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A MODEL FOR ANALYSING THE DETERMINANT FACTORS OF ADOPTION E-BANKING SERVICES BY ROMANIAN CUSTOMERS

Abstract. *Many studies, focused on technical and technological issues highlighted by Innovation Diffusion Theory, Technology Acceptance Model and Theory of Trust and Security, and on psychological aspects highlighted by the Decomposed Theory of Planned Behaviour, emphasised a variety of factors that may influence the adoption of Internet banking. The purpose of this study was to modelling factors with impact on adoption the electronic Banking services in transactions achieved by Romanian banking customers. We used Internet, Mobile and Home Banking as the target technologies and Romanian subjects as the sampling frame. The study investigates the influence of perceived usefulness, perceived ease of use, compatibility, self-efficacy, technical resources, security, cost and time, factors chosen in function of the highest percentages of occurrence in respondents answers from the questionnaires. A principal component analysis was used to validate the constructs and multiple regressions were employed to analyse the data. The results show that perceived usefulness, compatibility, technical resources, security and cost, all have significant effect on adoption of e-Banking services. The examination of the regression coefficients reveal that compatibility has a strong impact on customers' intention to use online services in Banking transactions.*

Keywords: *E-Banking services, Self-efficacy, Compatibility, Security, Transaction cost, Perceived usefulness and ease of use, Regression coefficients*

JEL Classification: M15, M21, O32

1. Introduction

As a result of the growing use of the Internet globally, there has been an apparent increase in the use of the Internet for financial service transactions (Ibbotson & Moran, 2003). The diffusion of the internet and its commercialization has paved the way to making online banking service offerings a reality (Pikkarainen *et al.*, 2006). There are massive opportunities that the Internet has brought to the banking industry in recent years including the rise of pure online

banks (Alnsour & Al-Hyari, 2011). With the use of the online banking channel banks are able to offer almost all their products and services online. Attractiveness to Internet banking is enhanced by the ability to conduct banking transactions anytime and anywhere, faster and with lower fees compared to using traditional bank branches (Sayar & Wolfe, 2007).

Thus, in the last years, the majority of banks had adopted and diversified e-Banking services, offering to their customers many facilities. Before adoption of e-banking channel, banks had to realize a financial assessment, using as prime financial indicators: cost reduction, profitability and risk, indicators that must be quantitatively analyzed. The first refers to labour and premises costs that are saved because the customer using the channel replaces the Bank's teller in executing the transactions. The profitability of the channel has to be calculated on the basis of revenues that are generated not only by directly charging the customers but also by exploring any reductions in operating costs. Finally, risk must not be ignored, both for the customer and the Bank as the channel interfaces with central IT applications. A channel should always give the customer the capability to reverse and/or cancel a transaction as mistakes can easily be made (Stamoulis *et al*., 2002).

As the bank analyse its overall profitability and so the customers evaluates their advantages by using e-banking services, compared with the risks involved. Internet banking allows for direct access to financial information and to undertake financial transactions with no need to go to the bank (Rotchanakitumnuai & Speece, 2003). Bhattacherjee (2002) argues that customer satisfaction is more challenging in e-Banking than in traditional banking transactions because customers are more empowered with the information required to make their own decisions. In this light, online companies should understand customer requirements and identify the factors affecting customer satisfaction (Chen & Liang, 2009).

In this paper we intend to realize a model for study the adoption of e-Banking services by Romanian customers taking into account a variety of factors set of theories known as focused on technical and technological issues, mainly that the Innovation Diffusion Theory, Technology Acceptance Model and Theory of Trust and Security, and the psychological aspects highlighted by the Decomposed Theory of Planned Behaviour.

According to the *innovation diffusion theory* (IDT) (Rogers, 1983) before individuals adopt a technology, they will first gather and synthesize information about the technology. The synthesizing process of the gathered information forms their beliefs about using the technology that consequently determine whether individuals will accept or reject the technology. Rogers (1995) suggested five key beliefs that influence individuals to adopt an innovation: relative advantage, compatibility, complexity, trialability, and observability (Md Nor & Pearson, 2008).

Technology Acceptance Model (TAM) has been adapted from the theory of reasoned action (TRA) (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). TAM suggests that attitudes predict intentions, and intentions predict behaviour. According to TAM, adoption behaviour is determined by the intention to use a particular system and the intention is determined by the attitude, which in turn is

determined by the perceived usefulness and perceived ease of use of the system (Davis, 1989).

TAM postulates that external variables may affect perceived ease of use and perceived usefulness. System features, training, documentation, and user supports are some external variables that may influence an individual's perceived ease of use (Davis et al., 1989). The model also hypothesizes a link from perceived usefulness to behavioural intention (Md Nor *et al*., 2010).

The theoretical validity and empirical applicability of TAM still had needed to be extended to incorporate different technologies, users, and organizational contexts (Hu *et al.*, 1999). This is especially true when studying e-banking system, where the technology settings and transaction environments are drastically different from conventional environment. A few researchers (Karahanna *et al.*, 2002) have empirically validated the TAM with demographic variables, such as gender and age. Although their findings suggested that these variables would have varied effects on decision processes, believing that these effects were caused by the instrument itself. Thus the TAM instrument should go through an invariance test across such variables prior to its being used in a survey (Lai & Li, 2005).

Trust has been analyzed from two different perspectives: trust is considered as a comportamental component, that is, trust refers to the individual's intention to act in a certain way and reflects the security that one party has in the other one (Geyskens *et al*., 1996; Siguaw *et al*., 1998). According to this perspective, trust is the "willingness to rely" in the partner (Flavian *et al*., 2006). Alternatively, trust may be analyzed as a cognitive component that supposes trust is associated with a set of beliefs (Doney & Cannon, 1997).

Trust is seen as being of considerable importance in the process of building and maintaining relationships, although it is also recognised as being difficult to manage (Bejou *et al.*, 1998). Most of the previous literature has emphasized the presence of two fundamental aspects that determine the degree of trust shown by the consumer to a company. First, trust will depend on the honesty perceived by the consumer in the actions of the company (Doney & Cannon, 1997). Second, researchers have shown that the degree of benevolence shown by the company is closely related to the trust shown by its customers (Flavian *et al*., 2006). In some studies is included a third component –competence perceived by the consumer in the company, in this case represented by a web site, includes the set of skills, capacities and characteristics that enable a party to have influence on a specific domain (Mayer et al., 1995), and therefore keep his promises (Sako & Helper, 1997).

From the studies results that trust has a significant positive influence on relationship commitment. These findings suggest that where customers maintain long-term contractual relationship with their bank, trust would be likely to be a strong driver of customer relationship commitment (Kassim & Abdulla, 2006).

Cheung & Lee (2001) point out that *security* refers to integrity, authentication, encryption, and non-repudiation. Integrity refers to the impossibility of the transmitted or stored data being modified by third parties without permission. Confidentiality involves the data being seen by authorized

individuals. Authentication enables a certain operation to be carried out only after identification, or if there are guarantees of the identity of the party one is dealing with. Finally, non-recognition refers to procedures that prevent an individual or organization from denying that they had carried out a certain operation (Flavian *et al.*, 2006).

Decomposed theory of planned behaviour (DTPB) is based on research undertaken by Taylor and Todd (1995) and provides tools that increase its capacity for predicting consumer behaviour, compared to other theories mentioned above, going further and determining a system of variables, that influence it directly, for each of the factors (attitude, subjective norm and perceived behavioural control).

Bhattacherjee (2000) concluded that attitudinal factors (usefulness and ease of use) have a significant influence on the attitude that the consumer have in terms of online trading. Social factors, as interpersonal influence and external influence, determine the adoption of subjective rules. Factors related to behaviour control (individual effectiveness and access to resources) have a significant influence on behaviour control. General attitude, subjective rules and control behaviour take part in the category factors with major impact on the using intention.

According to Lau (2002), behaviour that online trade consumers have right now is influenced by the intention to have certain behaviour. Attitude, subjective rules and how it is perceived the behaviour control are factors that have a major influence on behavioural intention. How they are perceived usefulness and ease of use, relative advantage, compatibility and visibility are factors whose influence manifests itself mainly on the attitude; the influence of competition, customer influence on decision makers and employees are related to subjective rules; access to resources and technology have an important role on the perception of behavioural control.

2. Modelling intention to use e-banking services

Starting from the theories mentioned and factors identified as having a major role in motivating consumers to use the Internet for conducting economic activities, there were selected factors considered as having significant influence in the decision of consumers to use e-Banking services, as follows:

- factors arising from innovation diffusion theory: complexity, testing, observability, and compatibility;
- factors arising from the technology acceptance model: perceived usefulness and perceived ease of use;
- factors derived from the theory of trust and security: security;
- factors arising from the theory of decomposed planned behaviour: self-efficacy and technical resources.

To these items were added other factors identified by empirical studies that are considered having a significant influence in the adoption of electronic banking services: culture, time, cost and accessibility.

Based on the factors that each of these theories claim them as fundamental to the user in adopting the decision to trade online, were constructed hypothesis to

identify those factors that currently determines the behaviour of consumers regarding e-Banking use for running banking transactions.

As the number of identified factors was quite high (15 factors) was chosen to develop the model in two stages. First, by applying the percentage calculation and determination of frequencies was made a selection of factors with the highest percentages of occurrence, which were stored in the second stage of model development.

So, this survey was based on a questionnaire results, taking into account the most relevant 8 factors that had the highest percentages of occurrence, factors that may influence more e-banking adoption: perceived usefulness, perceived ease of use, compatibility, self-efficacy, technical resources, security, cost and time. In the questionnaire, we used four items for each factor in evaluating respondents' perception of the understudied constructs.

The *Perceive Usefulness* was defined as "the degree to which a person believes that using a particular system would enhance his or her job performance". If a user holds a belief that an application can enhance ones job performance, then that application is perceived to be useful. Based on formerly conducted researches and their results, the more useful the system is seen, the more likely it is be that the system is also being used (Vainio, 2000). In accordance with that statement, the hypothesis is:

H1: "*Perceived Usefulness positively influences adoption of e-Banking Services".*

Perceive Ease of Use was described as "the degree to which a person believes that using a particular system would be free from effort" (Davis, 1989). Perceived ease of use means the users perception of the level of easiness to use the system. The more difficult the system is to use or learn to use, the less likely it is the system is used as extensively as would be desirable, or that it will be started to use in general.

If an online service is found to be very difficult and cumbersome to use, the customer is very likely to do the transactions in more traditional. Thus, the hypothesis is:

H2: "*Perceived Ease of Use positively influences adoption of e-Banking Service".*

Compatibility. An innovation is more likely to be adopted when it is compatible with individuals' job responsibilities and value system (Tornatzky & Klein, 1982). Internet banking has been viewed as a delivery channel that is compatible with the profile of the modern day banking customer, who is likely to be computer-literate and familiar with the Internet. Therefore, it is expected that the more the individual uses the Internet, and the more he or she perceives the Internet as compatible with his or her lifestyle, the more likely that the individual will adopt Internet banking (Tan & Teo, 2000).

Also, we consider that compatibility is in relation with previous experience that refers to **"**prior experience with similar technology". The more a user has experience with similar things, the more confident one should feel about starting or doing something alike. This applies to computers, Internet services, and systems in general as well. The more a person has experience in Internet services or other

banking systems in the Internet, the more likely he/she is to start using a system also at work in favour of the company (Vainio, 2006).

In terms of compatibility with the needs of the potential adopters, Internet banking can be seen as an expeditious tool that allows customers to better manage their multiple accounts. As there are more financial products and services, it is expected that individuals who may have many financial accounts and who subscribe to many banking services will be more inclined to adopt Internet banking (Tan and Teo, 2000).Thus, the hypothesis is:

H3: "*The greater the perceived compatibility of e-Banking with one's values and greater use banking products and services, the more likely that e-Banking service will be adopted"*.

Self-efficacy refers to the level of confidence a person has on oneself. Some people may be very confident about themselves just because that is their natures, where as others which are competent in something and should feel confident about doing it, actually don't. Previous experience, ability to learn and adopt new information, willingness to just try out new things probably influence individuals self-efficacy in many situations (Vainio, 2006).

Self-efficacy refers to the fact that **"**a person's estimate of his/her ability to cope with using a particular system". Self-efficacy predicts intentions to use a wide range of technologically advanced products (Hill *et al*., 1986). Thus, an individual confident in having the skills in using the computer and the Internet is more inclined to adopt Internet banking. This is because the individual is comfortable in using the innovation (Tan & Teo, 2000). This leads to the hypothesis:

H4: "*The greater the self-efficacy toward using e-Banking, the more likely that e-Banking service will be adopted"*.

Technical resources refer to the easy access of technological resources and infrastructure. Goh (1995) suggests that, as supporting technological infrastructures become easily and readily available, Internet commerce applications such as banking services will also become more feasible. As a result, Internet users would be expected to be more inclined to adopt e-Banking (Tan & Teo, 2000). Potential users, in turn would view new applications such as Internet banking services more favourably, and hence be more likely to use them. The above arguments lead to the following hypotheses:

H5: "*The greater the extent of technical resources for e-Banking, the more likely that e-Banking service will be adopted"*.

Trust is perhaps one of the critical components in building economic relationships in an online environment such as Internet banking due to a greater perception of risk and uncertainty. The negative perception may be the result of a higher perceived threat of possible inappropriate behaviours such as *security* lapses where vital private information can be stolen by hackers (Suh & Han, 2002). Unless individuals trust the technology, it is very likely that the technology will not be adopted. However, it should also be noted that there are still customers who fear to make use of Internet banking, as they are concerned with security aspects of such a system. Reliability is fundamental to product or service quality. For transactions conducted through an open network which may involve sizeable money values, security - especially with regard to proper authorization and

confidentiality - would tend to be that aspect of reliability which matters the most (Liao & Cheung, 2002).

In the view of some international experts, security concerns arise from the use of an open network, i.e. customers are afraid that their personal financial information will become available to others via the Internet and can be used for fraudulent purposes. Research has suggested that customers need to be convinced about their concerns of security in electronic banking, as they believe that the Internet payment channels are not secure and can actually be intercepted (Yousafzai *et al.*, 2003). This leads to the hypothesis:

H6: *"The more the user perception of security is high, the more likely that e-Banking service will be adopted"*.

Time is duration, measured in various size units, which corresponds to carrying out an action, that is, the time required to perform a banking transaction. Time is the main advantage of online service users, a factor which is recognized by banks and listed in the schedule of presentation of e-Banking services, as the main gain that will have users from online trading. The shorter time of performing e-banking transactions provide banking users to perform other activities.

H7: *"The more the time spent to make a transaction by using e-Banking services is reduced, the more likely that e-Banking service will be adopted"*.

Cost of using e-Banking services is reported to the costs to go to the bank and commissions of transactions made by interacting with bank officials. From the consumers' perspective, Internet banking provides a very convenient and effective approach to manage one's finances as it is easily accessible 24 hours a day, and seven days a week. Besides, the information is current (Tan & Teo, 2000). Benefits for the end users are numerous as well and include mainly convenience of the service (time saved and globally accessible service), lower cost of transaction and more frequent monitoring of accounts among others (Pikkarainen *et al.*, 2004). This leads to the hypothesis:

H8: *"The more the costs of using e-Banking services are reduced, the more likely that e-Banking service will be adopted"*.

3. Research method

The purpose of this study is to test empirically the influence of perceived usefulness, perceived ease of use, compatibility, self-efficacy, technical resources, security, cost and time on the intention to adopt e-Banking services by Romanian Banking customers. This study hypothesizes that all factors positively affect the adoption of e-Banking services.

To assess the research model proposed in figure 1, a survey was used to collect data from Internet users in Romania. A survey questionnaire was put up to collect the information via the Internet or face to face. The participants were recruited both through email invitations and invited face to face to complete questionnaires.

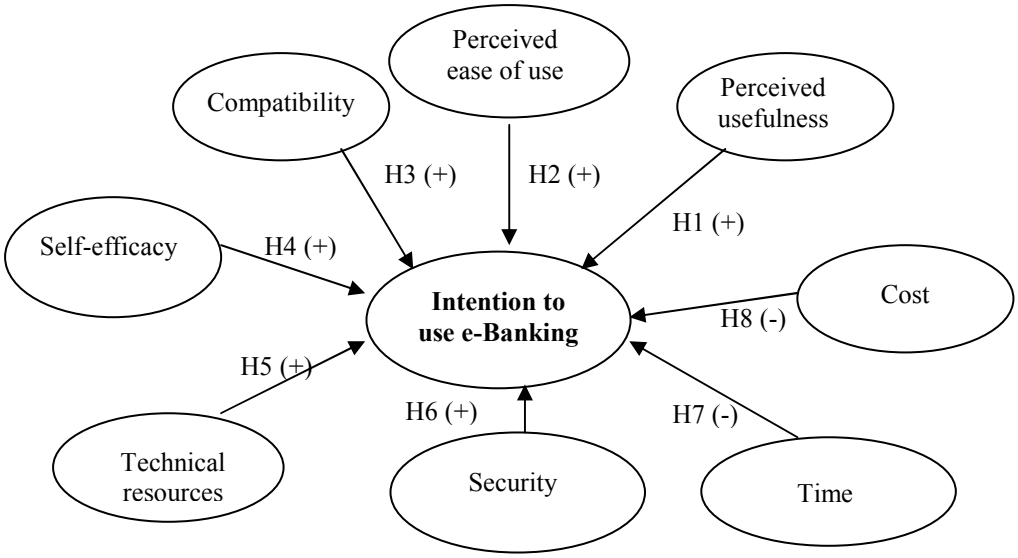


Figure 1. Research model with hypothesis indicators

The actual questionnaire comprised a series of statements reflecting the items operationalising the constructs of the study. All statements were measured on a five-point Likert scale, ranging from strongly disagree (1) to strongly agree (5). The questionnaire consisted of 36 questions covering those 8 factors mentioned above, plus Intention (figure 1). The questions related to each variable and their operationalization are provided in detail in Appendix A. No incentive was offered to induce survey response and all answers belong to respondents.

The participants to this survey were students, master and PhD students from Dunarea de Jos University of Galati and other persons, universities' collaborators and different employed persons, interested in e-banking services. Analysing the structure of the interviewed group it was found that it has a homogeneous nature, with people from different geographical areas of Romania, different backgrounds, with diverse professional training and with different occupations. A factor analysis was performed to assess the validity of the construct and multiple regressions was employed to analyze the data.

4. Data analysis and findings

A total of 458 questionnaires were distributed to target respondents. Out of 458 questionnaires distributed, 440 were usable for the analysis. Table 1 shows the respondents' demographic background. About 37.5% of respondents are living in the capital and the same percent in the district. Only 16.8% of participants are living in the city and 8.2% in the rural environment.

Table 1. Demographic Profile

Variable	Category	Frequency	Percentage
Place	Capital	165	37.5
	City	74	16.8
	District	165	37.5
	Rural	36	8.2
Education	Secondary	1	0.2
	High School	148	33.7
	College	193	43.9
	Master's	64	14.5
	Ph.D	34	7.7
Employment	Employed	270	61.4
	Unemployed	34	7.7
	Entrepreneur	30	6.8
	Others	106	24.1
Occupational sector	Private	183	41.6
	Public	144	32.7
	Self-employed	22	5.0
	Others	91	20.7
Occupational field	Manufacturing	22	5.0
	Construction	11	2.5
	Agriculture	4	0.9
	Distribution	22	5.0
	Service	105	23.9
	Education	89	20.2
	Health	34	7.7
	Culture	7	1.6
	Defense/Public Order	12	2.7
	Justice	10	2.3
	Administration	14	3.2
	Others	110	25.0
Age	< 30 years old	225	51.1
	30 to 40 years old	135	30.7
	41-55 years old	67	15.2
	Over 55 years old	13	3.0

Related to education, about 43.9 percent of respondents have graduated, 14.5 percent are graduates of master and 7.7 percent are PhD graduated. A significant share is held by high school graduates, as 33.7 percent. About 61.4 percent of responders are employed, 7.7 percent unemployed and 6.8 percent entrepreneurs. Participants working in the private sector hold the largest share of 41.6% compared

to the participants working in the public sector of 32.7%. About 23.9 percent are occupied in the service field and 20.2 percent in the education. Reduced shares are registered by the respondents working in health, manufacturing, distribution, justice, administration, construction, defense, culture etc.

These 440 respondents ranged in age from 18 to over 55 years old, but most (81.8%) were between 18 and 40, while the remaining 18.2% were older than 40 years.

This section presents the results of the full hypothesized model developed for this research. Altogether eight factors were proposed, namely perceived usefulness, perceived ease of use, compatibility, self-efficacy, technical resources, security, cost and time. However, one construct i.e., time was dropped from the analysis. This will be explained in the following paragraph. A Cronbach alpha was performed to check on the reliability of the construct measurements. Given the exploratory nature of the research, 0.6 was chosen as cut point for the reliability test (Corbitt *et al.*, 2003). Table 2 below shows the cronbach alpha for each constructs. All eight factors' α are higher than 0.6, ranging from 0.795 to 0.958, which suggest reliable measurements (Hair *et al*., 1998).

Table 2. Reliability Results

Construct	No. of Items	Cronbach's Alpha
Perceived usefulness	3	0.806
Perceived ease of use	4	0.932
Compatibility	2	0.898
Self-efficacy	3	0.795
Technical resources	3	0.844
Security	4	0.924
Cost	4	0.879
Intention	4	0.958

Validity of the constructs was evaluated by performing factor analysis. Table 3 shows the final output of the factor analysis using principal components with varimax rotation. Originally, this study had proposed eight factors that influence the intention to use e-banking. Based on the factor analysis; however, one construct was dropped, namely Time. The analysis showed that the items used to measure this construct were somewhat poorly constructed and loaded on many factors. We decided to drop the construct from the analysis.

Furthermore, several items were also dropped. One item was dropped from each of these constructs i.e., perceived usefulness, self-efficacy and technical resources and two items were dropped from compatibility construct. The items were dropped as they loaded highly on several factors.

Table 3. Rotated Component Matrix

Items	F1	F2	F3	F4	F5	F6	F7	F8
PU1	.757							
PU2	.844							
PU3	.690							
PEOU1		.873						
PEOU2		.888						
PEOU3		.876						
PEOU4		.763						
Compatibility2			.686					
Compatibility3			.672					
SE1				.733				
SE2				.810				
SE3				.739				
TR2					.804			
TR3					.814			
TR4					.806			
Security1						.826		
Security2						.923		
Security3						.914		
Security4						.849		
Cost1							.816	
Cost2							.776	
Cost3							.849	
Cost4							.851	
Intention1								.877
Intention2								.886
Intention3								.883
Intention4								.879

Notes: Only loading > 0.4 are shown; Extraction Method: Principal Component Analysis;
Rotation Method: Varimax with Kaiser Normalization; Rotation converged in 7 iterations.

Table 4 shows the results of multiple regression analysis. Before the results were interpreted we analyzed the variance inflation factor (VIF). VIF that is greater than 10 indicates the presence of multicollinearity (Cooper & Schindler, 2003). From the table below, VIF shows values ranging from 1.190 to 1.788, indicating that a low threat of multicollinearity. As can be seen in Table 4, the strength of the relationships among the constructs was represented by the respective standardized path coefficient (t). Following Cohen (1988) recommendations, standardized path coefficient with absolute values of less than 0.10 may indicate "small" effect; values of around 0.30 a "medium" effect; and "large" effects may be suggested by coefficients with absolute value of 0.50 or more (Kassim & Abdulla, 2006).

As shown in Table 4, the results of the multiple regressions show that out of the seven factors we hypothesized to influence the intention to use e-banking, five

factors were found significant. They are perceived usefulness, compatibility, technical resources, security, and cost. The two factors that were found not to be significant are perceived ease of use and self-efficacy. Overall, the seven factors explain 55.2% of the variance.

Table 4. Regression Results

Multiple $R = 0.743$
R square = 0.552
Adjusted R square = 0.544
Standard error = 0.64695

Variable	Beta	*t*	Sig.	VIF
Perceived usefulness	0.080	1.967	0.050	1.609
Perceived ease of use	-0.057	-1.361	0.174	1.677
Compatibility	0.584	13.566	0.000	1.788
Self-efficacy	-0.017	-0.416	0.678	1.620
Technical resources	0.099	2.573	0.010	1.441
Security	0.109	3.112	0.002	1.190
Cost	0.145	4.017	0.000	1.253

H1 and H2: Perceived usefulness, perceived ease of use and intention to use e-Banking services. The perceived ease of use has a negative non-significant effect (H2: $\beta = -0.057$; $t = -1.361$) on the intention to use e-Banking, and therefore H2 is not supported, but it has a significant positive influence of perceived usefulness on using e-Banking (H1: $\beta = 0.080$; $t = 1.967$), which supports H1. This result suggests that the degree to which a person believes that using e-Banking services would enhance his or hers job performance and bring personal benefits will lead him or her to use e-banking.

H3: Compatibility and intention to use e-Banking services. The relationship between compatibility and intention to use e-Banking services was significant as expected (H3: $\beta = 0.584$; $t = 13.566$). The research reveals that compatibility is the most significant determinant of building banking customers' attraction over the e-Banking services. The study supports the notion that individuals who feel e-banking as compatible with the current ways of them performing banking activities are more inclined to adopt e-Banking.

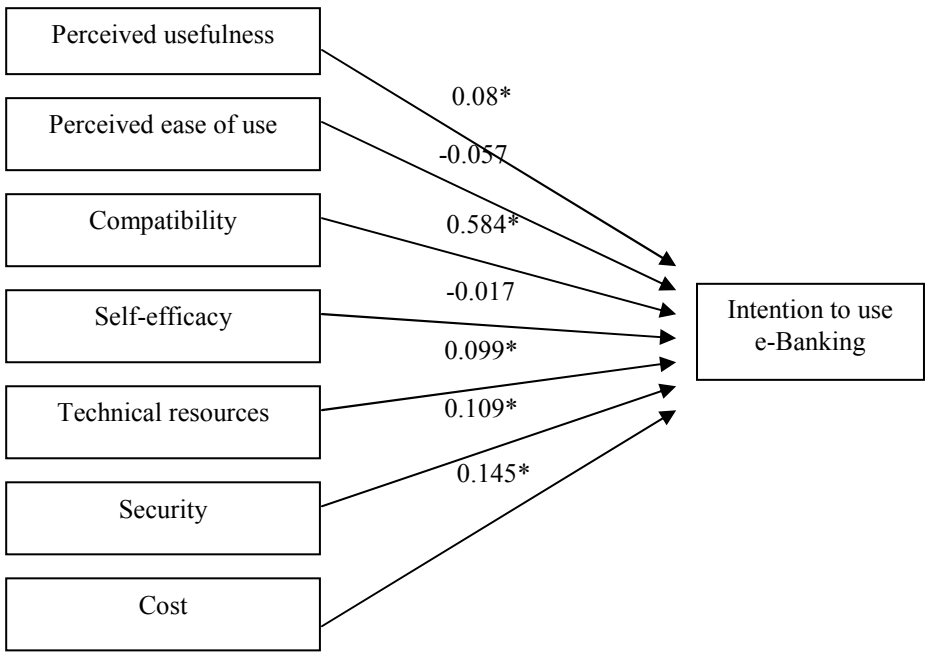
H4: Self-efficacy and intention to use e-Banking. Shared value of self-efficacy has a negative non-significant effect (H2: $\beta = -0.017$; $t = -0.416$) on intention to use e-Banking, and therefore H2 is not supported.

H5: Technical resources and intention to use e-Banking services. Technical resources was found to be positively related to intention to use e-banking (H5: $\beta = 0.099$; $t = 2.573$). The result shows that technical resources exert a relatively secondary influence in using e-Banking. Our result confirms the Goh's (1995) suggestion: as supporting technological infrastructures become easily and readily available, e-Banking services will become more feasible.

H6: Security and intention to use e-Banking. The link between security and intention to use e-Banking services was statistically significant and support hypothesis H6. Security tends to have a medium significant positive effect (H6: $\beta = 0.109$; $t = 3.112$) on using e-Banking. This finding suggests that customers' level of trust in security of e-Banking system which may partly based on whether they believe that the bank is engaging in activities that ensure all conditions on integrity, authentication, encryption, and non-repudiation are in place will affect their intention to use e-banking.

H7: Cost and intention to use e-Banking. Inspection of these coefficients indicates that cost has significant positive effect ($\beta = 0.145$; $t = 4.017$) on intention to use e-Banking services, thus, supporting H7. The results show that lower cost in performing e-banking affect the respondents' intention to use e-Banking.

The graphic representation of the results is shown in the figure 2.



*Note: * Significant at 0.05*

Figure 2. Final Model

5. Discussions and Conclusions

We found that compatibility (H3: $\beta = 0.584$) has a strong impact on customers' intention to use online services in Banking transactions. Understanding the role of compatibility in the customer decision to use e-Banking has important managerial implications in the present competitive environment. These are given

by the potential effect of the customers' commitment in using online banking transactions on the bank's future profits.

The findings of this study also show that cost ($\beta = 0.145$), security ($\beta = 0.109$), technical resources ($\beta = 0.099$) and perceived usefulness ($\beta = 0.080$) has a medium significant impact on intention to use online services in banking transactions. This indicates that customers are concerned about: the costs involved in using e-Banking services or benefits arising from their use, the level of security present when providing information online or making transactions online, the easy access of technological resources and infrastructure and if using a particular system would enhance his or hers job performance. So, the bank customers will perform online transactions only when they develop a certain level of trust related to these issues. Thus, this explains why perceived ease of use and self-efficacy (H2: $\beta = -0.057$ and H4: $\beta = -0.017$) has a negative significant effect on intention to use e-Banking services.

The study also found that cost significantly affect the respondents' intention to use e-banking. As phrased in the items to measure the construct, the finding suggests that cost savings of performing e-banking such as lower transportation cost and other expenses affect the respondents' to use e-banking. This results are as expected and probably a selling point for banks to inspire their customers to use the service.

This paper employed survey data and regression analysis to measure customer attitudes toward using e-Banking services and to explore its viability and prospects on the demand side. We found that individual perceptions regarding perceived usefulness, compatibility, technical resources, security and cost were the most important attributes in the intention to use electronic Banking services. In addition, willingness to use e-Banking services depended significantly on those five factors, allowing the interdependencies between them to be estimated in terms of ratios of the corresponding regression coefficients (Liao & Cheung, 2002).

Our results may be useful for the development planning of the banks to generate a widespread use of electronic banking services in Romania. Since the attributes like perceived usefulness, compatibility, technical resources, security and cost contribute to willingness to use e-Banking services, in different degrees, by developing them in order of significance, financial institutions would be able to more effectively enhance the customer value of online banking services, and reduce the time necessary for this financial innovation to secure market acceptance.

Thus, the results of the study have serious implications for bankers, corporate online users, individual users and business educators, who may use the empirically tested model as a diagnostic and monitoring tool in explaining the acceptance behaviour and adoption by Romanian users of online banking services.

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Appendix A. Items of the model variables

Constructs	Measures
Perceived usefulness	
PU1	I think e-banking makes it easier for me to do my banking activities.
PU2	I think e-banking enables me to complete my banking activities more quickly.
PU3	I think e-banking enables me to complete my banking activities conveniently.
PU4	I think e-banking allows me to manage my banking activities more efficiently.
Perceived ease of use	
PEOU1	I think it is easy to learn how to use e-banking.
PEOU2	I think it is easy to remember how to use e-banking.
PEOU3	I think e-banking is easy to use.
PEOU4	I think it is easy to become skillful at using e-banking.
Compatibility	
Compatibility1	I think e-banking is compatible with my lifestyle.
Compatibility2	I think e-banking is compatible with the way I like to do banking activities.
Compatibility3	I think using e-banking fits with my banking preferences.
Compatibility4	I think using e-banking to conduct banking transactions is compatible with my current situation.
Self-efficacy	
SE1	I am confident of using e-banking even if there is no one around to show me how to use it.
SE2	I am confident of using e-banking even if I have never used it before.
SE3	I am confident of using e-banking if I have only the instructions about how to use it.
SE4	I am confident of using e-banking if I have seen someone else using it before trying it myself.
Technical resources	
TR1	I have access to a computer with an Internet connection to use e-banking.
TR2	The resources needed to use e-banking are available to me.
TR3	I could easily get access to the resources that are needed to use e-banking.
TR4	I have sufficient resources to use e-banking.
Security	
Security1	I would not feel secure sending sensitive financial information across the e-banking
Security2	I am concerned to use e-banking because other people may be able to access my account
Security3	I am concerned to use e-banking because other people could make transaction in my name.
Security4	I do not feel secure related to the security solution provided by my bank.
Time	

	Time1	Using the e-banking provides me more free time.
	Time2	Using the e-banking, I am able to allocate my time more effectively.
	Time3	Using the e-banking gives me more time for my hobbies.
	Time4	Using the e-banking gives me more time for my work.
Cost		
Cost1		Using the e-banking allows me to save money.
Cost2		Using the e-banking allows me a better management of transportation expenses.
Cost3		Using the e-banking allows me to reduce some of my monthly expenses.
Cost4		Using the e-banking reduced my expenses.
Intention		
Intention1		I intend to use/continue using e-banking in the future.
Intention2		I will use/continue using e-banking in the future.
Intention3		It is likely that I will use/continue using e-banking in the future.
Intention4		I expect to use/continue using e-banking in the future.

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