

THE ROLE OF HABIT IN PERCEPTIONS, TRUST AND PERFORMANCE OF FIRMS WHEN USING E-INVOICING

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ABSTRACT

E-invoicing diffusion has been more limited than expected. As a result, there is a lack of information about firms' experiences after adopting e-invoicing. In contrast to existing research focused on the theoretical expected benefits, this study empirically tests a comprehensive performance framework for e-invoicing. The aim of this paper is to analyze the performance of firms that use e-invoicing. We test some of the main factors related to the usage of e-invoicing: (1) perceived security, (2) perceived usefulness, and (3) users' trust in the IT. Moreover, we propose that the habit acquired using this tool is an important antecedent of the perceptions of its users. Our results show that habit creates a positive information feedback loop and will allow the firms to be able to benefit from the advantages of e-invoicing.

Keywords:

E-invoicing, performance, habit, perceived security, trust, perceived usefulness.

1. Introduction

E-invoicing is the electronic transfer of billing and payment information, via the Internet or other electronic means, between parties involved in a commercial transaction - businesses, the public sector

and/or consumers - (European Commission, 2009). It links the internal processes of enterprises to the commercial system and may become an important part of an efficient financial supply chain. It speeds up the transmission of information via the online communication system and its intrinsic advantages are very interesting for firms: low operation costs, fewer administrative errors and the elimination of postal delays, among others (Hani, 2001; Berez and Sheth, 2007).

Since the late 90s, e-invoicing has been considered as a possible “killer application” in e-commerce, which may fundamentally change the way customers receive and pay their bills (Buchanan, 1998). Nevertheless, the number of user firms in the EU at the end of 2009 (15%) was significantly lower than initially expected, so there is little information about post-adoption experience. Furthermore, the published research about this tool deals with its expected theoretical benefits (Hani, 2001; Haq, 2007), without empirically studying its application.

The main objective of the present study is to analyze firm performance when using e-invoicing on a regular basis. We propose that the habit of using this tool acts as the principal antecedent of the perceptions of user firms. Habit allows the user to appreciate the benefits of the IT and to evaluate more precisely the improvements in performance coming from e-invoicing usage. Our results will allow us to know how and why firms continue using e-invoicing, which are still critical issues for technology management researchers and practitioners (Bell, 2004; Cho *et al.*, 2009).

We focus on just one country because it is not possible to compare between countries given the lack of homogeneity in the transposition of the EU Directive about e-invoicing. We have chosen the case of Spanish firms because this country has an adoption rate similar to the European average (12% according to the European Commission, 2009). Moreover, it is one of the five EU member states whose public sector is more committed to e-invoicing (the other four countries are Denmark, Finland, Italy and Sweden).

The paper is organized as follows. Firstly, the theoretical framework is explained, analysing the variables that we consider are important for explaining e-invoicing performance. Subsequently, the research model is designed and the hypotheses formulated. Thirdly, the methodology section describes the characteristics of the sample, the variables included in the study and the measurement scale assessment. Then, the research hypotheses are tested and the findings obtained are explained. Finally, the conclusions and managerial implications are discussed.

2. Theoretical framework

In recent years, the European Commission has defined the important factors in the diffusion process of e-invoicing. It states that some of the main requirements are (1) perceived security, (2) perceived usefulness, and (3) trust in e-invoicing (European Commission, 2009). Given that the firms analyzed have experience with e-invoicing, we consider it important to include two key factors to study its successful implementation and continued employment: acquired habit as an antecedent and the performance the firm perceives from the use of this tool.

2.1. Perceived Security

Lack of security is one of the most important barriers to the development of e-commerce and the financial transactions carried out over the Internet (Ranganathan and Grandon, 2002). Ignorance of how the Internet works increases users' fears that hackers or a third party will gain access to their financial secrets or disclose their personal information (Pavlou, 2003). Security reflects the perception of reliability of the payment methods used and the mechanisms of data transmission and storage (Kolsaker and Payne, 2002). In spite of the technological advances in recent years to increase the security of web-based transactions, firms are still concerned about conducting their relationships with suppliers and customers via the Internet, so they must perceive security during their interaction in order to continue using the IT (Kousaridas *et al.*, 2008; Kim *et al.*, 2010).

E-invoicing must satisfy strict security requirements if it is to become part of a firm's financial practices (Kaliontzoglou *et al.*, 2006). Some of these security requirements are related to relationships with other agents (authentication and non-recognition of transactions), while others are derived from the technological culture of the firm (security policy, electronic storage of e-invoicing, etc.). All these

security characteristics are very important in the development of e-invoicing as they transmit a better image of its working and increase the trust of user firms.

2.2. Perceived Usefulness

Perceived Usefulness (PU) is a key variable in the Technology Acceptance Model of Davis (1989). It represents the degree to which users of an IT consider that its usage will improve their performance, providing bigger organizational advantages than either the status quo or its precursor (Wu and Chuang, 2009). If users consider that the IT is necessary (Klopping and McKinney, 2004), PU modifies their behavior and predicts continued IT usage, as different TAM studies have shown. When users gain experience, they pay more attention to the improvement in performance derived from continued usage of the IT (Karahanna *et al.*, 1999). Therefore, to develop a post-acceptance model of an IT, PU must be included (Bhattacharjee, 2001; Liao *et al.*, 2006).

One of the attractions of e-invoicing is the intrinsic advantages of its usage^[1], already mentioned in the introduction section. These benefits determine expected usefulness and normally lead to an improvement in performance (Hani, 2001; Haq, 2007). So, the perceived usefulness of e-invoicing could be one of the key drivers of its acceptance and general diffusion.

2.3. Trust

The importance of trust in e-business has been widely analyzed by previous research from many literature streams (Pavlou, 2002; Yousafzai *et al.*, 2003). In strategy and marketing literature, trust has been related to benefits such as richer information (Lo and Lie, 2008), competitive advantage (Barney and Hansen, 1994), firm performance (Garcia *et al.*, 2008) and attainment of long-lasting and profitable relationships (Flavián *et al.*, 2006). From an economic perspective, trust reduces transaction costs (Bromiley and Cummings, 1995) and, in the organizational literature, trust has been posited to operate as a governance mechanism (Bradach and Eccles, 1989). In general, trust has been source of fundamental positive consequences.

In IT research, there is no consensus on the definition of trust since both the type of IT considered and the context affect its meaning (Palmer *et al.*, 2000). In the business context, we consider that trust is the subjective beliefs with which the firm assesses that it will perform tasks using an IT, irrespective of its ability (Doney and Cannon, 1997 and Bhattacharya *et al.*, 1998, among others). It can be highlighted that trust is founded on the subjective probability that the IT works; it is not an objective anticipation (Bhattacharya *et al.*, 1998; Pavlou, 2002).

Some authors have analyzed the role of trust by distinguishing different stages: trust before usage of the IT (pre-trust) and after usage (post-trust) (McKnight *et al.*, 1998; Chiou, 2004). In the first stage, users are not familiar with the IT, so trust formation is based on issues such as their propensity to trust (Teo and Liu, 2007). Nevertheless, once users have acquired experience with the IT, some perceptions determine their level of trust. The present study analyzes post-trust, since the firms studied use e-invoicing. Therefore, we consider that users' trust in the correct functioning of an e-invoicing system and in its benefits may reduce the perceived disadvantages of the change from hard-copy invoicing.

2.4. Habit

Habit reflects automatic behavior tendencies developed during the past history of the individual (Limayem and Hirt, 2003; Liao *et al.*, 2006). Past and present behavior can constitute a barrier to change because of the non-transferable system learning acquired (Keaveney and Parthasarathy, 2001). However, when behavior is repeated and becomes usual, it is guided by automated cognitive processes, rather than by elaborate decision processes (Aarts *et al.*, 1998). The meta-analysis research from Ouellette and Wood (1998) offers sufficient support for considering present behavior as an additional factor to the classical theories that explain performance. Habit involves learning and causes automatic responses to specific situations (Ouellette and Wood, 1998; Limayem and Hirt, 2003) which can be performed quickly in parallel with other activities. Habit is a behavioral preference in the present and guarantees that the user will always behave in the same way, effortlessly and unconsciously (Arts *et al.*, 1998). The relationship between habit and future behavior was already

proposed by studies such as LaBarbera and Mazursky (1983), which consider that activity carried out is the best predictor of future behavior.

In the IT field, none of the models used to study usage intentions (TAM, TPB, IDT, etc.) have included habit as an explanatory factor (Gefen, 2003) because most of them have analyzed the user's first use. However, once people have employed the IT and gained experience, habit becomes a primary predictor of their behavior and explains their perceptions and attitudes. Gefen (2003) states that force of habit dictate many behavioral intentions with an IT because previous behavior often determines current behavior independently of any rational assessments (Chaudhuri, 1999). Thus, examining the influence of habit on user behavior can improve our knowledge about the perceived performance of e-invoicing.

2.5. Performance

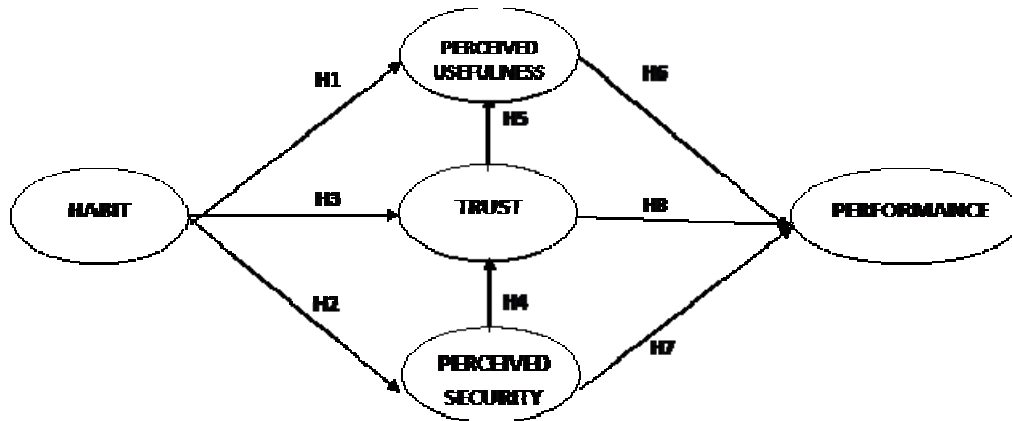
Research about inter-organizational relationships and IT has focused on concepts such as trust, satisfaction and commitment, which Ulaga and Eggert (2006) call *soft variables*. Nevertheless, most of these papers have not included a performance variable, which is interesting to evaluate the results obtained by firms (Gil-Saura *et al.*, 2009). Performance is a concept which measures how well a firm achieves its objectives (Hamon, 2003; Ho, 2008), i.e. the firm's efficiency and its effectiveness in achieving its goals (Robbins and Coulter, 2002). Schermerhorn *et al.* (2002) consider that performance refers to the quality and quantity of individual or group work achievement.

In the IT arena, performance includes the frequency of solving operational obstacles (Arora, 2002; Ho, 2009) and the success of the implementation of the IT (Ifinedo and Nahar, 2009). It is determined by the achievement of the expected benefits and promotes sustained usage of the IT, i.e. its "routinization" (Hage and Aiken, 1970; Saga and Zmud, 1994). Following Garcia *et al.* (2008), it could be affirmed that performance reflects the degree of satisfaction perceived during the application of an IT in the firm. Therefore, it is logical to consider that performance explains the intention of continuing to use the IT (Chiou, 2004), which will increase its diffusion and development. In the case of e-invoicing, performance is related to an increase in productivity, a reduction of costs, and an improvement in the relationships of the firm with its customers and suppliers (Kositanurit *et al.*, 2006; Park *et al.*, 2007).

3. Research design and hypotheses

Figure 1 shows the research model. Habit is a necessary condition in order for the user firm to accept e-invoicing. It is modeled as a determinant of the perceived usefulness, security and trust in e-invoicing which, in turn, influence the firm's performance.

FIGURE 1
Research model



Habit is the effect generated by experience of and knowledge acquired about e-invoicing. These are issues that allow users to learn how to operate it and, thus, to gain more advantages (Gefen, 2003; Liao *et al.*, 2006). Experienced user firms tend to evolve and handle different information to that used by an inexperienced firm (Michell and Prince, 1993; Bhattacharjee and Premkumar, 2004). Likewise, many authors have proved that users have significant differences in perceptions to non-users, since habit allows the users to form their own experiences and their degree of trust (Karahanna *et al.*, 1999; Yu *et al.*, 2005). Moreover, in subsequent periods, perceptions and firm performance will adjust to the effects of habit and feedback will emerge between the variables in the long term.

Perceived usefulness is the perception that shows the biggest differences after IT use. The influence of PU upon behavior becomes stronger as the user gains direct experience and acquires the habit of IT usage (Gefen *et al.*, 2003). Perceived security refers to the user's subjective evaluation of the electronic system's security. It has been observed that frequent activity with the IT conditions this perception (Linck *et al.*, 2006; Kim *et al.*, 2010). Overall, if users possess greater experience obtained through the repeated use of e-invoicing, they may have different perceptions of the IT. Therefore, habitual users will perceive e-invoicing as more useful and secure than users with only limited experience of it (Karahanna *et al.*, 1999; Gefen, 2003), so we formulate the following relationships:

H1: Habitual activity with e-invoicing positively increases users' perceived usefulness.

H2: Habitual activity with e-invoicing positively increases users' perceived security.

Based on previous interactions and experiences, habit improves users' understanding of the IT and reduces their uncertainty (Gefen, 2000). This understanding refers to current actions and influences user beliefs about future actions (Gefen, 2000). If, during these experiences, the IT has worked as expected, users will be more likely to trust in their performance and can predict the outcomes of using it. Thus, without habit, trust cannot be adequately anchored to specific favorable behavior (Luhman, 1979). We think that habit is the precondition for the development of trust and results in greater user awareness of how e-invoicing works. Thus, we state the following hypothesis:

H3: Habitual activity with e-invoicing positively affects users' trust.

One of the most necessary steps in the development of online trust is to assure users that their personal data will be safe (Chen and Barnes, 2007). Perceived security involves a set of procedures, mechanisms and computer programs to guarantee the integrity and privacy of the information transmitted (Tsiakis and Sthephanides, 2005). Therefore, security is a key determinant affecting users' online trust and helps them overcome the perceived risk (Warrington *et al.*, 2000; Pavlou, 2003; Chen and Barnes, 2007).

We will analyze the effect of this perception on trust in e-invoicing, in the same way as other authors have already tested this relationship for IT such as e-banking, e-commerce and e-payment (Kim and Ahn, 2006; Chen and Barnes, 2007; Tao, 2009). The introduction of e-invoicing should be

accompanied by a corresponding security policy, which should establish some norms related to the framework of trust (Kaliontzoglou *et al.*, 2006). In this context, we propose the following hypothesis:

H4. Perceived security about e-invoicing has a positive effect on user trust.

The relationship between PU and trust has been controversial. While several works have found that PU influences initial user trust towards an IT (Kofaris and Hampton-Sosa, 2005; Chen and Barnes, 2007), other authors consider that post-trust is an important antecedent of PU (Pavlou, 2003; Wu and Chen, 2005; McCloskey, 2006). The latter research strand states that trust in an IT improves users' evaluations of its usefulness (Gefen *et al.*, 2003; Cao *et al.*, 2005; Tung *et al.*, 2008), provides expectations of successful interactions, and improves IT adoption (Pavlou and Gefen, 2004; Rotchanakitumnuai and Speece, 2009). We propose that, without trust in e-invoicing, PU cannot guarantee that users will actually employ this IT in its business activity (Rotchanakitumnuai and Speece, 2009). Therefore, we hypothesize the following relationship:

H5: Trust in e-invoicing will positively affect the user firm's perceived usefulness.

The main behavioral consequence of the successful implementation of an IT is the improvement in performance derived from its employment, and it is determined by the experiences of users during their interaction. With respect to e-invoicing, we analyze whether the perceptions of usefulness, security, and trust enhance the performance of the firm.

Research based on DeLone and McLean's model of Information System success includes PU as a determinant of user satisfaction (Seddon and Kiew, 1994; Seddon, 1997; Konradt *et al.*, 2006). Users who consider the IT useful will be more satisfied with their interaction and, therefore, value the effect of the IT on their performance more highly (Bhattacharjee, 2001; Konradt *et al.*, 2006; Tung *et al.*, 2008). Devaraj *et al.* (2002) establish that the perceived usefulness of e-commerce is a significant antecedent of consumer performance. For e-invoicing, the fact that its employment decreases administrative errors and lowers operational costs, among others consequences, makes firms feel more satisfied with this IT and evaluate their performance positively. We state the following relationship:

H6. The perceived usefulness of e-invoicing has a positive effect on firm performance.

Moreover, if the level of perceived security in the IT is very low, users are unlikely to participate until solutions are implemented to allay their fears (Tsiakis and Sthephanides, 2005; Tao, 2009). Some studies find that users' perception of security dominates their decisions to use e-payment systems (Tao, 2009; Kim *et al.*, 2010). In the same line, we consider that perceived security will improve performance. Therefore, we propose the following hypothesis:

H7. The perceived security of e-invoicing has a positive effect on firm performance.

Regarding the relationship between trust and performance, Smith (2006) states that lack of trust in the IT usually hinder the achievement of the desired results. Lee and Turban (2001, p. 81) consider that users' trust is related to three factors: (1) the perceived technical competence of the IT, (2) the perceived performance level of the IT, and (3) the human operator's understanding of the characteristics and process of the system. The influence of trust on performance seems evident (Pavlou, 2002; Pavlou and Gefen, 2004) as the former improves user behavior with the IT and increases the likelihood that the expected benefits are obtained (Chiou, 2004; Lin and Wang, 2006; McCole *et al.*, 2009). Therefore, we will test the following relationship for e-invoicing:

H8. Trust in e-invoicing positively influences firms' performance

4. Methodology

4.1. Sample

Since 2003, Spanish legislation has allowed the use of e-invoicing, giving it the same value as its paper equivalent. According to the Spanish Tax Agency, the only requirements for a firm that wishes to adopt e-invoicing are: to accept the legal conditions established by the EU, to have a computer and to establish an Internet connection. Moreover, the Tax Agency and the Spanish Banking Association have elaborated a standardized e-invoicing software called “Facturae”, which can be downloaded free of charge by any firm. In this way, they hope to eliminate hard-copy invoices and bring about savings of 15,000 million euros, 1.5% of the country’s GDP.

Although the characteristics of the business structure in Spain are not identical to those of other European countries, the country’s track record and level of diffusion with respect to the e-invoice make it an interesting study case.

In order to carry out this research, a Computer Assisted Telephone Interviewing (CATI) survey was conducted. The information refers to the firm as a whole, not to each of its employees. Consequently, the questionnaires were addressed to the managers responsible for the use of IT in the firm and they were requested to answer on behalf of the firm. The data were compiled between the months of October and December, 2007.

To guarantee the representativeness of the sample, random quota sampling was employed, according to sector and size criteria and the distribution of Spanish firms. A total of 1,443 telephone calls were made and 1,193 valid surveys were obtained. We selected all the firms that had employed e-invoicing: 109 firms. There were no restrictions about the system used (for example, PDF, XML, EDIFACT, html, doc, xls, or jpeg) in order to avoid limitations derived from the non-application of a specific system. After the refining process, a total of 100 valid cases were obtained (8.38%).

4.2. Operationalizing variables and measures

Research constructs were operationalized using several items adapted from previous research, as shown in Table 1. All the variables were measured using 7-point Likert scales (1, totally disagree; 7, totally agree). Perceived usefulness (PU) was obtained from the Technology Acceptance Model (Davis *et al.*, 1989), and Perceived security (PS) refers to the need for the e-invoice to guarantee the safe transmission of the information (O’Cass and Fenech, 2003; Pikkarainen *et al.*, 2004). Habit has been measured based on a scale included by Gefen (2003).

Following Wang and Lead (2007), the trust construct has been selected and designed in a way that should lead to understanding how IT mechanisms affect firms’ performance. We have treated trust as a unitary concept which analyzes whether e-invoicing is trustworthy and reliable (Lee *et al.*, 2007; Lemire *et al.*, 2008). Lastly, performance refers to success in the implementation of e-invoicing and was adapted from the research of Park *et al.* (2007) and Kositanurit *et al.* (2006). According to both these papers, IT success has been measured through features such as enhanced productivity, task performance improvement, decision effectiveness and the time necessary to carry out a task. This focus is consistent with other research such as Weill and Olson (1989) and Ifinedo and Nahar (2009), which reject the inclusion of financial measures to assess performance or effectiveness. We developed a scale with four items, which has been adapted to the characteristics of the e-invoice. The first item is derived from Igbaria *et al.* (1997) and Gefen *et al.* (2005) and describes the enhancement of the productivity of the job (PERF1). Other items are related to the reduction of the cost of performing tasks (PERF2) and to improvements in the relationships with customers and suppliers (PERF3) (Kositanurit *et al.*, 2006). Furthermore, the degree of overall satisfaction with e-invoicing has been included (PERF4) (Park *et al.*, 2007).

TABLE 1.
Measurement of the variables

Variables	Items
HABIT (Gefen, 2003)	My firm usually employs e-invoicing in its transactions with other agents E-invoicing is the favorite tool of my firm to manage its transactions The percentage of invoices that are managed electronically by my firm is high
PERCEIVED SECURITY (Ranganathan and Ganapathy, 2002; O’Cass and Fenech, 2003; Pikkarainen et al., 2004)	My firm thinks that the e-invoice has mechanisms that ensure the safe transmission of the information My firm thinks that the e-invoice guarantees the security of the data from third parties My firm thinks that the e-invoice has sufficient technical capacity to ensure that the data I send will not be intercepted by hackers
TRUST (Wang and Head, 2007; Lee et al., 2007; Lemire et al., 2008)	Based on my firm’s experience with the e-invoice, my firm can trust in it Based on my firm’s experience with the e-invoice, my firm believes it is reliable Based on my firm’s experience with the e-invoice, my firm believes it provides good service
PERCEIVED USEFULNESS (Davis et al., 1989; Grandon and Pearson, 2004)	The e-invoice is useful in my firm The e-invoice enables my firm to accomplish specific tasks more quickly Using the e-invoice improves my firm’s performance
PERFORMANCE (Igbaria et al., 1997; Gefen et al., 2005; Kositanurit et al., 2006; Park et al., 2007)	The e-invoice increases the productivity of performing tasks The e-invoice reduces the costs of performing tasks The e-invoice improves relationships with customers and suppliers The performance of the firm in conducting its tasks using the e-invoice has been satisfactory

It must be highlighted that the absence of common method bias was corroborated, since Harman’s single factor test found that all the indicators do not load onto a single factor (Podsakoff *et al.*, 2003; Morgan *et al.*, 2004).

4.3. Measurement scale assessment

In order to guarantee measurement reliability and validity, a confirmatory factor analysis (CFA) containing all the multi-item constructs in our framework was estimated with EQS 6.1 (Bentler, 1995), using the maximum likelihood method. The results obtained are shown in Table 2.

The results suggest that our measurement model provides a good fit to the data: S-B= 167.91, df= 94, $p= 0.00$; RMSEA= 0.089; NFI= 0.875; NNFI= 0.907; CFI= 0.938. As evidence of convergent validity, the CFA results indicate that all items are significant ($p<.01$), related to their corresponding factors, whose standardized loadings are higher than 0.60 (Bagozzi and Yi, 1988), and have an R^2 higher than 0.50 (Jöreskog and Sörbom, 1993).

TABLE 2.
Internal consistency and convergent validity of the theoretical construct measures

Variable	Item	Factor loading	Robust t-value	R ²	Composite reliability	AVE
HABIT	HAB1	0.91	14.59	0.83	0.94	0.85
	HAB2	0.98	20.46	0.96		
	HAB3	0.88	13.50	0.79		
SECURITY	SEC1	0.88	9.64	0.78	0.89	0.73
	SEC2	0.95	10.05	0.90		
	SEC3	0.72	7.84	0.53		
TRUST	TRUS1	0.96	11.07	0.93	0.93	0.82
	TRUS2	0.96	9.85	0.93		
	TRUS3	0.79	6.64	0.62		
PERCEIVED USEFULNESS	PU1	0.76	7.00	0.57	0.93	0.81
	PU2	0.98	10.95	0.97		
	PU3	0.95	10.27	0.91		
PERFORMANCE	PERF1	0.81	8.70	0.65	0.98	0.91
	PERF2	0.82	8.46	0.67		
	PERF3	0.86	11.04	0.74		
	PERF4	0.77	10.05	0.58		

Table 3 also demonstrates the high internal consistency of the constructs. The composite reliability of each factor was higher than 0.60 (Bagozzi and Yi, 1988), the average variance extracted (AVE) was also greater than 0.50 (Fornell and Larcker, 1981) and Cronbach's alpha values exceed the reference value of 0.7 (Nunnally and Bernstein, 1994).

TABLE 3
Discriminant validity of the theoretical construct measures

Factors	Confidence Interval
HAB-SEC	(.118 .534)
HAB-TRUS	(.284 .572)
HAB-PU	(.363 .647)
HAB-PERF	(.358 .650)
SEC-TRUS	(.533 .793)
SEC-PU	(.101 .469)
SEC-PERF	(.287 .707)
TRUS-PU	(.230 .654)
TRUS-PERF	(.326 .762)
PU-PERF	(.575 .819)

As shown in Table 3, evidence for the discriminant validity of the measures was provided by checking that none of the 95 per cent confidence intervals of the latent factor correlation matrix contained a value of 1.0 (Anderson and Gerbing, 1988). On the basis of these criteria, we concluded that the measures in the study exhibited sufficient evidence of reliability and convergent and discriminant validity.

5. Findings

We tested the proposed conceptual model (Figure 1) using structural equation modeling. The empirical estimations for the main-effects are shown in Table 4. The goodness of fit indices reach the limits recommended by Hair *et al.* (1999): S-B $X^2 = 170.55$; $df = 96$; $p < 0.00$; NFI = 0.874; NNFI = 0.909; CFI = 0.927; IFI = 0.928; RMSEA = 0.088.

TABLE 4.
Structural model results

Hyp.	Path	Standardized Path Coefficients	Robust t-value
H1	Habit→P. Usefulness	0.39***	3.17
H2	Habit→P. Security	0.33***	3.15
H3	Habit→Trust	0.24***	2.71
H4	P. Security→Trust	0.58***	5.25
H5	Trust→P. Usefulness	0.27*	1.87
H6	P. Usefulness→Performance	0.57***	3.80
H7	P. Security→Performance	0.25**	2.00
H8	Trust→Performance	0.12	0.77
*** Significant at 99%, ** Significant at 95%, * Significant at 90%			

An examination of the estimated model parameters shows that habit influences the perceptions of the user about e-invoicing. The more frequent the use of the tool, the higher the perceived security ($\beta_1 = 0.33$), usefulness derived from usage ($\beta_2 = 0.39$) and experienced trust ($\beta_3 = 0.24$). So, we can affirm that habit causes an increase of trust in e-invoicing and more awareness of security and of the benefits. H1, H2 and H3 are supported. If we only take into account the significant relationships in the model, the standardized global effect of habit on performance is 0.37.

The security experienced by the user firm significantly improves firm trust ($\beta_4 = 0.58$) and performance perceptions ($\beta_7 = 0.25$). From these results, we would highlight the importance of designing secure systems of e-invoicing in order to provide users with the greatest possible guarantees. H4 and H7 are supported.

Trust resulting from e-invoicing use causes a greater perception of the benefits of using the IT. Nevertheless, trust does not have a direct effect on performance but exerts its influence on usefulness ($\beta_5 = 0.27$). Therefore, for the data analyzed, H5 is supported and H8 is rejected.

Perceived usefulness is the most important factor ($\beta_6 = 0.57$) influencing firms' performance from using the IT. This result indicates that the bigger the perceived usefulness of e-invoicing, the better the firms' evaluation of their performance. H6 is supported. PU acts as a mediator between the trust in and the perceptions of the user with respect to e-invoicing and the firms' final behavior. Finally, the global explanatory power obtained by our model for performance is 60%.

6. Conclusions

In spite of the numerous advantages of the adoption of e-invoicing, its diffusion rate is much less than initially expected. This is because this tool does not offer enough guarantees to potential adopters. This work has analyzed the experiences of firms with e-invoicing, contributing real data about its usage. Our results identify factors that improve firm performance.

The first important conclusion is the role of habit in the diffusion of e-invoicing. The benefits of this IT cannot be derived from its first use but only from continuous usage. From our results it can be concluded that, if a firm uses e-invoicing habitually, it will perceive more usefulness, security and trust in the use of the tool. These factors explain the subsequent improvement in performance from IT usage, which will consolidate previously acquired habit. Thus, habit constitutes the corner stone for the acceptance of an IT, ensuring its long-term viability (Bhattacharjee, 2001; Premkumar and Bhattacharjee, 2008).

Secondly, we would like to highlight the effects of perceived security, which are an important aspect in user firm behavior. For the firm to accept the IT, it must be sure that the information provided will not be used for fraudulent goals. If the firm finds security during its first interactions, it will trust in the benefits that could be obtained as well as in the achievement of the goals it initially expected, so its evaluation will be more positive. Thus, security enhances firm trust and gives the user a perception of better performance.

Thirdly, the role played by perceived usefulness in e-invoicing can be highlighted. This variable exerts a high influence on firm performance and acts as a trust mediator. As can be observed in various reports on e-invoicing (European Commission, 2009), cutting costs and reducing administrative errors are important factors in the decision to implement this tool. Our results highlight the importance of these benefits and reaffirm these statements, using information that has been obtained from the direct experience of firms that use this IT. Usefulness is a sufficient condition for firms to increase e-invoicing usage.

Finally, it is important to stress the effect of trust in this IT. This trust is obtained from continuous usage and improves the performance of firms when using e-invoicing.

7. Implications, limitations and future lines

The results obtained from the present work make an important contribution to the literature and have several implications for firms.

One of the main interests of our research is that, to the best of our knowledge, it is one of the first studies that have investigated the performance of experienced users of e-invoicing. The few papers on this IT are usually descriptive and/or exploratory. Our results have helped to fill this gap, at least partially, by empirically testing the importance of habit, perceptions and trust in firms with experience in the use of e-invoicing. These firms can make a significant contribution to the diffusion of e-invoicing because, if they are satisfied with the performance obtained, they will disseminate positive word-of-mouth that may attract new firms. They will promote the idea among the firms in their environment, build support, overcome resistance and ensure that the tool is implemented.

Another contribution of our research is the proposal of a comprehensive performance measurement framework for e-invoicing. Companies interested in adopting e-invoicing will know benefits related to its use as well as the effects on their performance. In order to achieve this improved performance, firms should use this tool continuously and develop a habit that allows them to benefit from all the advantages of the IT. As Gefen (2003) states, habit creates a positive information feedback loop in which the IT will gain more and more market share due to the cognitive and other switching costs. Developers must design systems of e-invoicing that suit customers habits and encourage its diffusion.

As with the e-payment system (Tao, 2009), there is a direct relationship between security and trust. Technical protection will increase perceived security, which is an essential concept in the understanding of the development of e-invoicing. Regarding the importance of trust, we would advise firms that wish to adopt e-invoicing to make an effort to deal with the psychological barriers involve in this adoption. In this way, they will be able to perceive the benefits of the new system more realistically, accelerate the learning process and improve future actions. These psychological barriers can be overcome via improvements in employee training, not only the ones that are using the tool but all the staff in the company. Training decreases levels of resistance, improves user habit and increases the possibility of a successful use of the IT (Bradford and Florin, 2003). The firm will acquire more familiarity with e-invoicing if it eliminates any kind of prejudice and resistance from its employees.

As with any investigation, our study has certain limitations. Firstly, we should mention our use of cross-sectional data, which means that our analysis lacks a temporal dimension so we cannot observe the evolution in firms' acceptance of technology. Consequently, as a future line of research, we want to test the model presented here over a continuous period, thereby determining the variation in the importance of the perceptions and performance in successive years. Secondly, we would also like to analyze the perceptions of firms that have not yet adopted e-invoicing and compare them with the behavior of user firms. This comparison will allow us to compare the beliefs of non-user and user

firms. In this way, false beliefs about the adoption and subsequent use of the IT could be eradicated and the limitations that are impeding its diffusion will be overcome. Lastly, in future research, we will test the development of e-invoicing in different countries, in order to make a cross-national comparison and to identify the differences in habit, perceptions, trust and performance.

References

- AARTS, H.; VERPLANKEN, B. AND VANKNIPPENBERG, A. (1998). "Predicting behavior from actions in the past: repeated decision making or a matter of habit", *Journal of Applied Social Psychology*, Vol. 28, n° 15, p. 1355-1374.
- ANDERSON, J.C. AND GERBING, D.W. (1988). "Structural equation modeling in practice: a review and recommend two-step approach", *Psychological Bulletin* Vol. 103, n° 3, p. 411-423.
- ARORA, R. (2002). "Implementing KM- a balanced scorecard approach", *Journal of Knowledge Management*, Vol. 6, n° 3, p. 240-249.
- BAGOZZI, R.P. AND YI, P.R. (1988). "On the evaluation of structural equation models", *Academy of Marketing Science*, Vol. 16, n° 1, p. 74-94.
- BARNEY, J.B. AND HANSEN, M.H. (1994). "Trustworthiness as a source of competitive advantage", *Strategic Management Journal*, Vol. 15, p. 175-190.
- BELL, S. (2004). "Trapped by the wrong dependent variable: a call for individual technology routinization and infusion research", *Proceedings of ASAC*.
- BENTLER, P.M. (1995). "EQS structural equations program manual", Multivariate Software, Inc., C.A.
- BEREZ, S. AND SHETH, A. (2007). "Break the paper jam in B2B payments", *Harvard Business Review*, Vol. 85, n° 11, p. 28.
- BHATTACHARYA, R.; DEVINNEY, T.M. AND PILLUTLA, M.M. (1998). "A formal model of trust based on outcomes", *Academy of management review*, Vol. 23, n° 3, p. 459-472.
- BHATTACHERJEE, A. AND PREKUMAR, G. (2004). "Understanding changes in belief and attitude toward information technology use: a theoretical model and longitudinal test", *MIS Quarterly*, Vol. 28, n° 2, p. 229-254.
- BHATTACHERJEE, A. (2001). "An empirical analysis of the antecedents of electronic commerce service continuance", *Decision Support Systems*, Vol. 32, n° 2, p. 201-214.
- BRADACH, J.L. AND ECCLES, R.G. (1989). "Price, authority, and trust: from ideal types to plural forms", *Annual Review of Sociology*, Vol. 15, n° 1, p. 97-118.
- BRADFORD, M. AND FLORIN, F. (2003). "Examining the role of innovation diffusion factors on the implementation success of enterprise resource planning systems", *International Journal of Accounting Information Systems*, Vol. 4, p. 205-225.
- BROMILEY, P. AND CUMMINGS, L.L. (1995). "Transactions costs in organizations with trust", In: Bies, R., Sheppard, B.; Lewicki, R. (eds). *Research on Negotiation in Organizations*, JAI Press, Greenwich, CT.
- BUCHANAN, L. (1998). "Killer apps", Inc. Boston: May 1998. Vol. 20, n° 6, p. 92.
- CAO, M.; ZHANG, Q. AND SEYDEL, J. (2005). "B2C e-commerce web site quality: an empirical examination", *Industrial Management & Data Systems*, Vol. 105, n° 5, p. 645-61.
- CHAUDHURI, A. (1999). "Does brand loyalty mediate brand equity outcomes?", *Journal of Marketing Theory and Practice*, Vol. 7, n° 2, p.136-146.
- CHEN, Y.-H. AND BARNES, S. (2007). "Initial trust and online buyer behavior", *Industrial Management & Data Systems*, Vol. 107, n° 1, p. 21-36.
- CHIOU, J.-S. (2004). "The antecedents of consumers' loyalty toward Internet service providers", *Information & Management*, Vol. 41, p. 685-695.
- CHO, V.; CHENG, T.C.E. AND HUNG, H. (2009). "Continued usage of technology versus situational factors: An empirical analysis", *Journal of Engineering Technology Management*, Vol. 26, p. 264-284.
- DAVIS, F.D. (1989). "Perceived usefulness, perceived ease of use user acceptance of information technology", *MIS Quarterly*, Vol. 13, n° 3, p. 319-339.
- DAVIS, F.D.; BAGOZZI, R.P. AND WARSHAW, P.R. (1989). "User acceptance of computer technology: a comparison of two theoretical models", *Management Science*, Vol. 35, n° 8, p. 982-1002.
- DEVARAJ, S.; FAN, M. AND KOHLI, R. (2002). "Antecedents of B2C channel satisfaction preference: Validating e-commerce metrics", *Information Systems Research*, Vol. 13, n° 3, p. 316-333.
- DONEY, P.M. AND CANNON, J.P. (1997). "An examination of the nature of trust in buyer-seller relationships", *Journal of Marketing*, Vol. 61, n° 2, p. 35-51.
- EUROPEAN COMMISSION EXPERT GROUP ON E-INVOICING (2009). Mid-term Report of the European Commission Expert Group on e-Invoicing. Available in: http://ec.europa.eu/internal_market/payments/docs/einvoicing/report-2009_01_27_en.pdf
- FLAVIÁN, C.; GUINALIU, M. AND GURREA, R. (2006). "The role played by perceived usability, satisfaction and consumer trust on website loyalty", *Information & Management*, Vol. 43, p. 1-14.
- FORNELL, C. AND LARCKER, D. (1981). "Structural equation models with unobserved variables measurement error", *Journal of Marketing Research*, Vol. 36, n° 3, p. 39-50.
- GARCIA, N.; SANZO, M.J. AND TRESPALACIOS, J.A., 2008. "New product internal performance and market performance: Evidence from Spanish firms regarding the role of trust, interfunctional integration, and innovation type", *Technovation*, Vol. 28, n° 11, p. 713-725.
- GEFEN, D. (2000). "E-commerce: the role of familiarity and trust", *International Journal of Management Science*, Vol. 28, p. 725-737.
- GEFEN, D. (2003). "TAM o just habit plan: A look at experienced online shoppers", *Journal of End User Computing*, Vol. 15, n° 3, p. 1-13.

- GEFEN D.; KARAHANNA E. AND STRAUB D.W. (2003). "Inexperience and experience with online stores: the importance of TAM and trust", *IEEE Transactions on Engineering Management*, Vol. 50, n° 3, p. 307.
- GEFEN, D.; KARAHANNA, E.; STRAUB, D.W. AND RAGOWSKY, A. (2005). "A multilevel approach to measuring firms", *Information Systems Management*, Vol. 22, n° 11, p. 18-25.
- GIL-SAURA, I.; FRASQUET-DEL TORO, M. AND CERVERA-TAULET, A. (2009). "The value of B2B relationships", *Industrial Management & Data Systems*, Vol. 109, n° 9, p. 593-609.
- HAGE, J. AND AIKEN, M. (1970). "Social change in complex organizations", New York: Random House.
- HAMON, T.T. (2003). "Organizational effectiveness between transformational leadership and organizational performance in the largest public companies in Canada", Unpublished doctoral dissertation, Capella University, Minneapolis, MN.
- HANI, E.E. (2001). "The e-invoice - a legal document?" *Credit Management*, Vol. 22-24.
- HAQ, S. (2007). "Electronic Invoicing gains as adoption barriers fall", *Financial Executive*, Vol. 23, n° 7, p. 61-63.
- HO, L.A. (2008). "What affects organizational performance? The linking of learning and knowledge management", *Industrial Management & Data Systems*, Vol. 108, n° 9, p. 1234-1254.
- IFINEDO, P. AND NAHAR, N. (2009). "Interactions between contingency, organizational IT factors, and ERP success", *Industrial Management & Data Systems*, Vol. 109, n° 1, p. 118-137.
- IGBARIA, M.; ZINATELLI, N.; CRAGG, P. AND CAVAYE, A.L.M. (1997). "Personal computing acceptance factors in small firms: a structural equation model", *MIS Quarterly*, Vol. 21, n° 3, p. 279-305.
- JÖRESKOG, K. AND SÖRBOM, D. (1993). "LISREL 8 Structural Equation Modeling with the Simplis Command Language", Scientific software International, Chicago-Illinois.
- KALIONTZOGLOU, A.; BOUTSI, P. AND POLEMI, D. (2006). "eInvoice: Secure e-Invoicing based on web services", *Electronic Commerce Research*, Vol. 6, p. 337-353.
- KARAHANNA, E.; STRAUB, D.W. AND CHERVANY, N. (1999). "Information technology adoption across time: a cross-sectional comparison of pre-adoption and post-adoption beliefs", *MIS Quarterly*, Vol. 23, n°2, p. 183-213.
- KEAVENEY, S. AND PARTHASARATHY, M. (2001). "Customer switching behavior in online services: An exploratory study of the role of selected attitudinal, behavioral, and demographic factors", *Journal of the Academy of Marketing Science* Vol. 29, n°4, p. 374-390.
- KIM, H.S. AND AHN, J.H. (2006). "Comparison of trust sources of an online market-maker in the e-marketplace: buyer's and seller's perspectives", *The Journal of Computer Information Systems*, Vol. 47, p. 84-94.
- KIM, C.; TAO, W.; SHIN, N. AND KIM, K.S. (2010). "An empirical study of customers' perceptions of security and trust in e-payment systems", *Electronic Commerce Research and Applications*, Vol. 9, p. 84-95.
- KLOPPING, I. AND MCKINNEY, E. (2004). "Extending the technology acceptance model the task-technology fit model to consumer e-commerce", *Information Technology, Learning Performance Journal*, Vol. 22, n° 1, p. 35-48.
- KOUFARIS, M. AND HAMPTON-SOSA, W. (2004). "The development of initial trust in an online company by new customers", *Information & Management*, Vol. 41, p. 377-397.
- KOLSAKER, A. AND PAYNE, C. (2002). "Engendering trust in e-commerce: a study of gender-based concerns", *Marketing Intelligence & Planning*, Vol. 20, n° 4, p. 206-214.
- KONRADT, U.; CHRISTOPHERSEN, T. AND SCHAEFFER-KUELZ, U. (2006). "Predicting user satisfaction, strain and system usage of employee self-services", *International Journal Human-Computer Studies*, Vol. 64, p. 1141-1153.
- KOSITANURIT, B.; NGWENYAMA, O. AND OSEI-BRYSON, K. (2006). "An exploration of factors that impact individual performance in an ERP", *European Journal of Information Systems*, Vol.15, n° 6, p. 556-568.
- KOUSARIDAS, A.; PARISSIS, G., AND APOSTOLOPOULOS, T. (2008). "An open financial services architecture based on the use of intelligent mobile devices", *Electronic Commerce Research and Applications*, Vol. 7, n° 2, p. 232-246.
- LABARBERA, P. A. AND MAZURSKY, D. (1983). "A Longitudinal Assessment of Consumer Satisfaction Dissatisfaction: The Dynamic Aspect of the Cognitive Standardization", *Journal of Marketing Research*, Vol. 20, November, p. 393-404.
- LEE, M.K.O. AND TURBAN, E. (2001). "A trust model for consumer internet shopping", *International Journal of Electronic Commerce*, Vol. 6, n° 1, p. 75-91.
- LEE, Z.; WAGNER, C. AND HIN, H.K. (2007). "The effect of decision support system expertise on system use behavior and performance", *Information & Management*, Vol. 45, p. 349-358.
- LEMIRE, M.; PARÉ, G.; SICOTTE, C. AND HARVEY, C. (2008). "Determinants of Internet use as a preferred source of information on personal health", *International Journal of Medical Informatics*, Vol. 77, n° 11, p. 723-34.
- LIAO C.; PALVIA P. AND LIN H-N (2006). "The roles of habit and web site quality in e-commerce", *International Journal of Information Management*, Vol. 26, p. 469-483.
- LIMAYEM, M. AND HIRT, S.G. (2003). "Force of habit and information system usage: Theory and initial validation", *Journal of the Association for Information Systems*, Vol. 4, pp. 65-97.
- LIN, H-H AND WANG, Y-S (2006). "An examination of the determinants of customer loyalty in mobile commerce contexts", *Information & Management*, Vol. 43, n° 3, p. 271-282.
- LINCK, K.; PTTCHI, K. AND WIEDEMANN, D.G. (2006). "Security issues in mobile payment from the customer viewpoint", In *Proceedings of the 14th European Conference on Information Systems (ECIS 2006)*. Goteborg, Sweden, 1-11.
- LO, S-K AND LIE T. (2008). "Selection of communication technologies—A perspective based on information richness theory and trust", *Technovation*, Vol. 28, n° 3, p. 146-153.
- LUHMAN, N. (1979). "Trust and power", London: Wiley.
- MCCLOSKEY, D.W. (2006). "The Importance of Ease of Use, Usefulness, and Trust to Online Consumers: An Examination of the Technology Acceptance Model with Older Customers", *Journal of Organizational and End User Computing*, Vol. 18, n° 3, p. 47-65.
- MCCOLE, P.; RAMSEY, E. AND WILLIAMS, J. (2009). "Trust considerations on attitudes towards online purchasing: the moderating effect of privacy and security concerns", *Journal of Business Research*, in press.

- McKNIGHT, D.H.; CUMMINGS, L.L. AND CHERVANY, N.L. (1998). "Initial trust formation in new organizational relationships", *Academy of Management Review*, Vol. 23, p. 473-490.
- MICHELL, V.W. AND PRINCE, G.S. (1993). "Retailing to experienced and inexperienced consumers", *International Journal of Retail & Distribution Management*, Vol.21, n° 5, p. 10-22.
- MORGAN, N.A.; KALEKA, A. AND KATSIKEAS, C.S. (2004). "Antecedents of export venture performance: A theoretical model and empirical assessment", *Journal of Marketing*, Vol. 68, p. 90-108.
- NUNNALLY, J.C. AND BERNSTEIN, I.J. (1994). "Psychometric theory" (3rd Ed.). New York: McGraw-Hill.
- O'CASS, A. AND FENECH, T. (2003). "Web retailing adoption: exploring the nature of internet users web retailing behaviour", *Journal of Retailing Consumer Services*, Vol. 10, p. 81-94.
- OUELLETTE, J.A. AND WOOD, W. (1998). "Habit and intention in everyday life: The multiple processes by which past behavior predicts future behavior", *Psychological Bulletin*, Vol. 124, n° 1, p. 54-74.
- PALMER, J.W.; BAILEY, J.P. AND FARAJ, S. (2000). "The role of intermediaries in the development of trust on the WWW: The use and prominence of trusted third parties and privacy statements", *Journal of Computer Mediated Communication*, Vol. 5, n° 3.
- PARK, J.-H.; SUH, H.-J. AND YANG, H.-D. (2007). "Perceived absorptive capacity of individual users in performance of Enterprise Resource Planning (ERP) usage: The case for Korean firms", *Information & Management*, Vol. 44, p. 300-312.
- PAVLOU, P.A. (2002). "Institutional trust in interorganizational exchange relationships: The role of electronic B2B marketplaces", *Journal of Strategic Information Systems*, Vol. 11, n° 4, p. 105-143.
- PAVLOU, P.A. (2003). "Consumer acceptance of electronic commerce: integrating trust and risk with the technology acceptance model", *International Journal of Electronic Commerce*, Vol. 7, n° 3, p. 101-134.
- PAVLOU, P.A. AND GEFEN, D. (2004). "Building effective online marketplaces with institution-based trust", *Information Systems Research*, Vol. 15, n° 1, p. 37-59.
- PIKKARAINEN, T.; PIKKARAINEN, K.; KARJALUOTO, H. AND PAHNILA, S. (2004). "Consumer acceptance of online banking: an extension of the technology acceptance model", *Internet Research*, Vol. 14, n° 3, p. 224-235.
- PODSAKOFF, P.M.; MACKENZIE, S.B.; LEE, J.-Y. AND PODSAKOFF, N.P. (2003). "Common method biases in behavioral research: A critical review of the literature and recommend remedies", *Journal of Applied Psychology*, Vol. 88, p. 879-903.
- PREMKUMAR, G. AND BHATTACHERJEE, A. (2008). "Explaining information technology usage: A test of competing models", *OMEGA, The International Journal of Management Science*, Vol. 36, p. 64-75.
- RANGANATHAN, C., GANAPATHY, E. (2002). "Key dimensions of business-to-consumer web sites", *Information & Management*, Vol. 39 n° 6, pp.457-65.
- RANGANATHAN, C. AND GRANDON, E. (2002). "An exploratory examination of factors affecting online sales", *The Journal of Computer Information Systems*, Vol. 42, n° 3, p. 87-94.
- ROBBINS, P.S. AND COULTER, M. (2002). "Management", Prentice-Hall, Upper-Saddle River, NJ.
- ROTCHANAKITUMNUAI, S. AND SPEECE, M. (2009). "Modeling electronic service acceptance of an e-securities trading system", *Industrial Management & Data Systems*, Vol. 109, n° 8, p. 1069-1084.
- SAGA, V. AND ZMUD, R. (1994). "The nature and determinants of information technology acceptance, routinization and infusion, in *Diffusion, Transfer and Implementation of Information Technology*" (ed. Levine, L.): North-Holland, Amsterdam, p. 67-86.
- SCHERMERHORN, J.R. JR.; HUNT, J.M. AND OSBORN, R.N. (2002). "Organizational Behavior", 7th ed. Wiley, New York, NY.
- SEDDON, P.B. (1997). "A respecification and extension of the DeLone and McLean model of IS success", *Information Systems Research*, Vol. 8, n° 3, p. 240-253.
- SEDDON, P.B. AND KIEW, M.-Y. (1994). "A partial least test development of the DeLone McLean Model of IS success", In: *Proceedings of the International Conference on Information Systems*. Vancouver, Canada ICI 94, 99-110.
- TAO, W. (2009). "An empirical study of customers' perceptions of security and trust in e-payment systems", *Electronic Commerce Research and Applications*, in press.
- TEO, T.S.H. AND LIU, J. (2007). "Consumer trust in e-commerce in the United States, Singapore and China", *Omega*, Vol. 35, p. 22-38.
- TSIAKIS, T. AND STHEPHANIDES, G. (2005). "The concept of security and trust in electronic payments", *Computers & Security*, Vol. 24, p. 10-15.
- TUNG, F.-C.; CHANG, S.-C. AND CHOU, C.-M. (2008). "An extension of trust and TAM model with IDT in the adoption of the electronic logistics information system in HIS in the medical industry", *International Journal of Medical Informatics*, Vol. 77, p. 324-335.
- ULAGA, W. AND EGGERT, A. (2006). "Relationship value and relationship quality_ broadening the nomological network of business-to-business relationships", *European Journal of Marketing*, Vol. 40, n° 3/4, p. 311-327.
- WANG, F. AND LEAD, M. (2007). "How can the Web help build customer relationships?: An empirical study on e-tailing", *Information & Management*, Vol. 44, n° 2, p. 115.
- WARRINGTON, T.B.; ABGRAB, N.J. AND CALDWELL, H.M. (2000). "Building trust to develop competitive advantage in e-business relationships", *Competitiveness Review*, Vol.10, n° 2, p.160-168.
- WEILL P. AND OLSON M.H. (1989). "Managing Investment in Information Technology: Mini Case Examples and Implications", *MIS Quarterly*, Vol.13, n° 1.
- WU, J.J. AND CHENG, Y.S. (2005). "Towards understanding member's interactivity, trust, and flow in online travel community", *Industrial Management & Data Systems*, Vol. 105, n° 7, p. 937-954.
- WU, I.-L. AND CHUANG, C.-H. (2009). "Analyzing contextual antecedents for the stage-based diffusion of electronic supply chain management", *Electronic Commerce Research and Applications*, in press.
- YOUSAFZAI, S.; PALLISTER, J.G. AND FOXALL, G.R. (2003). "A proposed model of e-trust for electronic banking", *Technovation*, Vol. 23, p. 847-860.

YU, J.; HA, I.; CHOI, M. Y RHO, J. (2005). "Extending the TAM for a t-commerce", *Information & Management*, Vol. 42, n° 77, p. 965-976.

^[1] We do not consider other possible advantages promoted by many European Governments in order to boost e-invoicing diffusion (e.g. tax or contract benefits).