

Acceptance of E-Invoicing in SMEs

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Abstract. Electronic invoicing (e-invoicing) refers to the sending and receiving of invoices by electronic means. Small and media sized enterprises (SMEs) have not accepted e-invoicing to the same extent as large companies and the public sector in Sweden. The purpose of present study was to gain a better understanding of the acceptance of e-invoicing in SMEs, particularly small business, by describing the factors that affect e-invoicing in SMEs in rural area. The study is a part of a going on project “The Digital Age in Rural and Remote Areas” DARRA. We proposed a research model that found significant in prior research and grouped them into four different factors; organisational readiness, external pressure, owner/manager characteristics, and perceived benefit in the perception of e-invoicing in SMEs. To validate the model we collected data from owners/managers of SMEs by using a survey. The main results from present study indicate that SMEs are ready for acceptance of e-invoicing. Pressure from customers is considered to be an important factor for e-invoicing acceptance in SMEs. Furthermore, the SMEs perceive that acceptance of e-invoicing can be beneficial, and lead to increased internal efficiency as well as impact on business processes and relationships. The innovativeness of the owner/manager was also found to influence acceptance of e-invoicing.

Keywords: Acceptance of e-invoicing, SMEs.

1 Introduction

The globalisation of markets, technology and competition has increased business' requirements for flexibility, quality, cost-effectiveness and timeliness. A way of meeting these requirements, information technology (IT) has transformed the way business is done [6]. Both businesses and consumers are buying and selling goods and services on the Internet or via other electronic networks.

The possible advantages and disadvantages with e-invoicing compared to traditional invoicing in paper form are:

Advantages

- Could bring very high automatization of the processes
- Few errors

- Great benefits for both seller and customer
- Well standardised and many business line solutions

Disadvantages

- Difficult for smaller businesses, with the exception of some services directed only for them
- Demands volumes
- Different standards
- High investment and integration cost

Large organizations, companies and municipalities have invested in e-invoicing, but small and medium sized enterprises (SMEs) are lagging behind in this process (Al-Qirim, 2004; [19]). SMEs have special uniqueness with special needs, knowledge and resources when introducing e-invoicing [11]. The public sector in Sweden including several municipalities have invested in systems for sending and receiving e-invoices, while many SMEs still sending their invoices the traditional way. Ballantine, Levy and Powel [4] and Hansemark [13] try to explain that SMEs have:

- Lack of business and IT strategy
- Limited access to capital resources
- Influence of major customers
- Limited information skills
- The owner/manager apply a high degree of locus of control in decision making [25].

It has also been shown that IT acceptance in SMEs is typically made by a single owner/manager [24, 11]. The business size, characteristics of the chief executive officer (CEO) is other important factors affecting IT acceptance in SMEs and especially small businesses. Small businesses are more likely to adopt IT when the CEOs are more innovative, have a positive attitude towards adoption of IT, and possess greater IT knowledge [28].

There is no standard definition of SMEs. This report will follow the 2005 European Commission's definition of SMEs which states that SMEs are autonomous, partner or linked enterprises with 10 to 250 employees and a total turnover of less than 50 Million EUR or a Balance Sheet total less than 43 Million EUR [10].

SMEs' lack of business and IT strategy leads to a short-term view of IT acceptance and implementation. Influence of major customers/suppliers usually makes SMEs' approach toward e-commerce acceptance more reactive than proactive, generally doing just enough to meet their customers/suppliers' needs (Chen and Williams, 1998). It has been shown that IT acceptance decisions in small businesses are typically made by a single owner/manager [24].

Present study will focus on the acceptance of e-invoicing in SMEs from the perspective that the company sends the invoice in B2B. The handling of received invoices will not be considered in this study.

2 Research Model

Davis proposed TAM, a model that has been tested in many studies [14]. Leader et al. summarized sixteen articles that tested the model for different technologies (e.g. ATM, e-mail, Netscape, Access, Internet, Word, and Excel). In their model, they considered beliefs about ease of use and perceived usefulness as the major factors influencing attitudes toward use, which, in turn, affected intentions to use.

Many other studies have attempted to describe the factors influencing IT acceptance in SMEs. For example, Iacovou et al. [15] studied factors influencing the acceptance of IT by SMEs in different industries; they included perceived benefits, organizational readiness, and external pressure. To measure perceived benefits they used awareness of both direct and indirect benefits. Variables measuring organizational readiness were the financial and technological resources.

Riemenschneider et al. [24] proposed a combined model using the theory of planned behaviour [1] and TAM. They tested individual models, partially integrated models. They found that the combined model provided a better fit.

We proposed a research model (Figure 1), based on early research. We identified the factors that influencing acceptance of e-invoicing in SMEs, found significant in prior research and grouped into four different factors; perceived benefits, organisational readiness, external pressure, and owner/manager characteristics (Table 1).

Organizational readiness was assessed by including two items about the financial and technological resources that the company may have available as well as factors dealing with the compatibility and consistency of e-invoicing with firm's culture, values, and preferred work practices. Such items were found relevant in other research [5; 8; 23, 26].

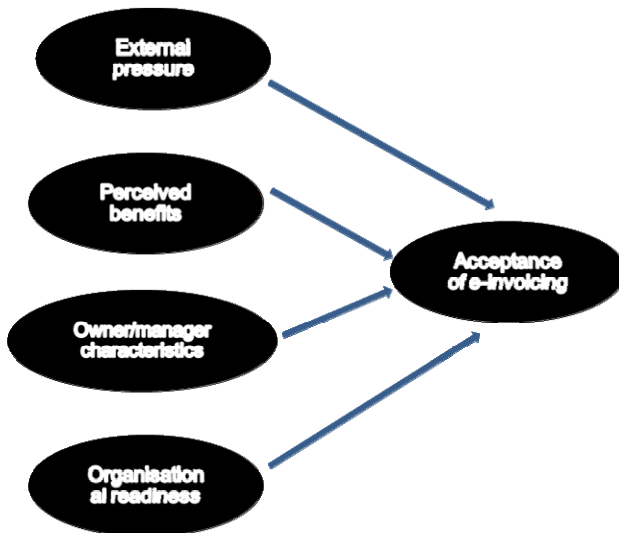


Fig. 1. The proposed research model

Table 1. Summary of acceptance factors

Factor in the current study	Factors in previous studies	Source
Perceived benefits	Advantages and risks	Iacovou et al. (1995); Grandon et al. (2005); Thong (1999)
Organizational readiness	Organizational readiness	Iacovou et al. (1995)
	Readiness	Chwelos et al. (2001)
	Organization	Kuan and Chau (2000)
	Organizational readiness	Mehrtens et al. (2001)
External pressure	Intra/extra organizational factors	Igbaria et al. (1997)
	External pressure	Chwelos et al. (2001); Mehrtens et al. (2001)
	Environment	Kuan and Chau (2000)
Owner/manager Characteristics	External competitive pressure	Premkumar and Roberts (1999)
		Thong et al. (1995), Riemenschneider et al. (2003)

External pressure was assessed by incorporating five items: competition, social factors, dependency on other firms already using e-invoicing, the industry, and the government.

3 Research Question

The research question we explored was: What factors affecting acceptance of e-invoicing by managers/owners of SMEs, particularly small business (less than 50 employees)?

4 Methodology

4.1 Subjects

We targeted managers/owner of SMEs from a variety of industries in the rural region of the Sweden. In our study, we considered the number of employees as the principal criterion in determining whether a firm qualified as an SME since other categorizations involving revenue, total capital and/or other types are more difficult to apply and can result in misleading classifications.

4.2 Data collection

The data were gathered by means of going on survey administered of SMEs during 2009. We identified the company name, a contact person, an e-mail address for that person, an address, and a telephone number. The contact person was typically the owner of the business or a manager. Documentation and interviews were used as collection methods for present study.

5 Results

We presented the main results of our empirical study of the case companies (n=20) in this section. Major characteristics of the analyses are emphasising regarding each factor that support to affect the acceptance of e-invoicing in our research model. The percent number within parenthesis show the responses of each question.

5.1 Overview of Perceived Benefits of E-Invoicing

The main advantages of e-invoicing;

- Cost savings (75 %)
- Staff resources can be set free for other tasks (75 %)
- Interest revenues and less invoice remainders needed (50 %)
- Reduced paper handling is beneficial for the environment (75 %)
- Using modern, rational and environmentally friendly technique can be good from a PR perspective (75 %)
- Strengthening of customer relations (50 %)
- Improved customer loyalty (50 %)
- Competitive advantage (50 %)
- Lower error rate (25 %)
- Service for the customers which makes it easier doing business (25 %)

Almost all advantages that are presented in our model are identified by the owner/manager of the companies.

5.2 Overview of External Pressure to Use E-Invoicing

The importance of external pressure;

- Pressure from customers (100 %)
- Competitive pressure (100 %)

The analyses indicate that all companies have considered adopting e-invoicing because customers have requested it, which is consistent with our research model.

5.3 Overview of Organisational Readiness to Use E-Invoicing

The importance of organisational readiness;

- Technological readiness (50 %)
- Financial readiness (75 %)

The level of technological resources differ between the companies, from a high level to sufficient IT utilisation and IT knowledge, for using an e-invoicing system. Regarding the financial resources, most of the companies have enough financial resources to accept e-invoicing and they also prioritise this investment.

5.4 Owner/Manager Characteristics

The importance of owner/manager characteristics;

- Innovativeness (50 %)

The level of the owner/manager's innovativeness differs between the companies. In one company owner/manager is described as very innovative, while the other companies are described as in-between innovative and conservative.

6 Discussion

The purpose of present study was to gain a better understanding of the adoption of e-invoicing in SMEs. The overall result from the study indicated that SMEs are experiencing pressure to accept e-invoicing from their customers. The SMEs also perceive that acceptance of e-invoicing can be beneficial, and lead to increased internal efficiency as well as impact on business processes and relationships. Technologically, the SMEs are ready for an acceptance of e-invoicing. Furthermore, the technological and financial assistance and coercive methods are important strategies to facilitate the acceptance of e-invoicing in SMEs.

All the SMEs in the study perceive advantages with e-invoicing, although the SMEs perceive different advantages and risks with e-invoicing.

The result in this study show that factors described by Iacovou et al. [15] together with the owner/manager characteristics highlighted by Kuan and Chau [17] have been proved useful when describing the factors that affect acceptance of e-invoicing in SMEs. Perceived benefits of e-invoicing are concluded to affect SMEs' acceptance of e - invoicing.

Advantages described relate to increased internal efficiency such as cost savings and interest revenues are identified as important by the SMEs. Advantages that have an impact on business processes and relationships are also identified as important by the SMEs. This advantage has not been explicitly expressed in the literature. SMEs in the study believe that the advantages of e-invoicing outweigh the risks, and the benefits the companies perceive with an adoption of e-invoicing are a factor which affects adoption of e-invoicing in SMEs.

The external pressure factor has been found to be the most influential factor affecting adoption of e-business systems in other studies e.g. [15, 20] and this factor is concluded to be an important factor for e-invoicing adoption in this study as well. The result shows that the SMEs subjected to this study have experienced external pressure to adopt e-invoicing, mainly from customers that have requested electronic invoicing and hence made the SMEs consider adopting e-invoicing. The majority of the SMEs also consider the competitive pressure, which is the e-invoicing capability of the firm's competitors, as a factor affecting adoption of e-invoicing. It can be noted that these SMEs also consider e-invoicing to be a competitive advantage. The SME that did not identify electronic invoicing as a competitive advantage did not consider the e-invoicing capability of their competitors as an important factor either.

On an organisational level, the result indicates that the organisational readiness for adoption of electronic invoicing was generally sufficiently high for e-invoicing adoption.

The resource poverty of SMEs is widely described in the literature, by e.g. Ballantine et al. [4] and Hansemark [13], but was only identified in one of the cases where limited financial resources was considered an obstacle for adoption of e-invoicing.

In general, the cost for the e-invoicing solution is not concluded to be an obstacle as long as the adoption is well motivated through a good understanding of the benefits of e-invoicing. The technological resources of the SMEs vary, but is generally enough to be able to accept and use an e-invoicing solution. SMEs with high level of IT knowledge were also having already accepted an e-invoicing solution.

When discussing the importance of the owner/manager's characteristics for adoption of e-invoicing, it can be concluded that the more innovative the owner/manager is, the more likely it is that the SME accepts e-invoicing. The reason for this is probably that innovative owners/managers are more willing to take the risk of acceptance e-invoicing, as stated by Thong et al. [28].

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