

The Effect of Specific Intra-Firm Characteristics Regarding Internet Use on Export Profitability: The Case of Greece

Abstract

In their effort to compete more efficiently with other companies, as well as larger counterparts, in the international business arena, SMEs can use the Internet as a tool for the enhancement of their exporting activities. The aim of this study is to reveal the influence of five specific intra-firm characteristics regarding successful Internet use on export profitability of Greek SMEs. Data were gathered via a self-administered e-mail survey of 312 Greek SMEs identified as having a corporate website. The findings indicate that the level of investment on Internet technologies within the firm along with the level of firm's management enthusiasm in promoting Internet use, have a significant positive impact on export revenues of Greek SMEs.

Key Words: *Internet, Exports, Export Marketing, International Marketing, SMEs, Greece*

Track: *E-Services*

1. Introduction

The Internet today is a widespread information infrastructure, the initial prototype of what is often called the National (or Global) Information Infrastructure. Internet is by many measures, hailed as a revolutionary force in business, being able to both improve the way business is conducted, and perhaps more importantly to reshape whole industries (Lichtenthal & Eliaz, 2003). The unique interactivity of the Internet (Avlonitis & Karayanni, 2000) and the advantages that derive from its use, led many companies, regardless of size, to use it for the expansion of their marketing efforts to foreign markets.

The diffusion of global e-commerce has spurred the growth of exports through the Internet. Exporting companies are increasingly realizing the potential of the Internet to either enhance existing export activities or find new foreign customers (Dou, Nielsen, & Tan, 2002). The Internet serves as a vehicle that accommodates the process of conducting export business or a tool deployed for promotion, information, and export revenue enhancement (Farhoomand & Lovelock, 2001).

In order to overcome the problem of small and saturated domestic markets, a large number of SMEs decided to engage in exporting, since one of the biggest advantages of exporting is accessing new markets and approaching new foreign customers. SMEs are crucial to every country and to every government because of: a) the important role they play for the economic development of the country, and b) the fact that they represent a very big percentage of the business sector. In due course, the fact that domestic markets are becoming more and more saturated, combined with the intensified local and international competition, has created several problems concerning the survival and growth of SMEs. Competing in the international business environment initially requires harder, more sustained work and effort than managers would normally experience in the domestic market (Seringhaus, 1989).

On the other hand, the twin phenomena of e-commerce and globalization pose new challenges and provide new competitive opportunities for large firms and SMEs alike. Small and medium-sized enterprises, in particular, are only beginning to embrace these new opportunities (Tiessen, Wright & Turner, 2001). It is, therefore, imperative to develop a better understanding of the impact of Internet on export performance of SMEs by examining several intra-firm factors that lead to successful Internet use. In order to shed some light on that direction: a) a set of hypotheses was generated based on the existing literature, and b) a survey was conducted on a sample of 312 Greek SMEs to test the validity of the proposed hypotheses and to reveal which factors have a positive impact on their export profitability. The paper is organized as follows: first, based on the existing literature the research hypotheses are discussed. Next, methodology and findings are presented respectively. Finally, discussion followed by conclusions and some managerial implications are highlighted.

2. Research Hypotheses

Firm-specific characteristics as a key determinant of a firm's export marketing performance has been well documented in the international literature (Julian & O'Cass, 2004; Lu & Julian, 2008). Intra-firm characteristics relate to a firm's capabilities and constraints, competitive advantages, competencies of management and staff, experience, and extent of international business involvement, as well as the availability of resources for export development (Cavusgil & Zou, 1994).

The goal of this study is to identify the impact of five specific intra-firm characteristics regarding successful Internet use on export revenues of Greek SMEs. The five intra-firm characteristics selected for the purposes of this research are: a) IT and Internet literacy within the firm, b) level of investment on Internet technologies within the firm, c) level of firm's understanding and use of Internet strategies, d) level of firm's management enthusiasm in

promoting Internet use, and e) level of firm's management entrepreneurial orientation regarding Internet use. The selection of those five intra-firm characteristics was based on the fact that, according to the third Pan-Hellenic Research conducted by the Technological Observatory of the Economic University of Athens (TOEUA, 2003) entitled "Business Use of the Internet", they play a very important role for the survival and growth of SMEs in the specific Greek context.

2.1 IT and Internet literacy within the firm

The literature identifies different types of organizational learning while at the same time it contends that experiential knowledge may play a significant role in order for firms to apply new technology effectively and to improve the likely success of technological introduction (Morgan-Thomas & Bridgewater, 2004). Moreover, practice has identified the firm's level of technological know how as one of the most important Internet competencies (Fillis, Johannson, & Wagner, 2004). Several research studies revealed that the level of IT and Internet knowledge and experience within a firm had a significant positive impact on export performance and Internet adoption (Bennett, 1997; Dholakia & Kshetri, 2004; Morgan-Thomas & Bridgewater, 2004; Mostafa, Wheeler, & Jones, 2006). In addition, it is suggested that the successful use of Internet and e-commerce as a strategy for expansion into new markets is likely to be influenced by factors such as the technical infrastructure and the availability of IT literate personnel (Moodley, 2002). As such, the following hypothesis is offered for testing:

H1: The level of IT and Internet knowledge and experience within a firm has a positive impact on its export revenues.

2.2 Level of investment on Internet technologies within the firm

While there are several research studies denoting that the Internet has the potential of neutralizing some existing advantages of bigger corporations and thus creating a level playing field for almost any interested SME to obtain a presence on the Internet and to list its address on various directories and Internet search engines (Quelch & Klein, 1996; Hamill & Gregory, 1997; Hoffman & Novak, 1997; Moodley, 2002; Wilson & Abel, 2002; Moen, Endresen, & Gavlen, 2003), there are other researchers expressing a different point of view by underlining the fact that large firms still enjoy a substantial competitive advantage mainly because of larger resources (Samiee, 1998a; Samiee, 1998b; Arnott & Bridgewater, 2002; Moodley, 2002; Eid & Trueman, 2004). In order to set up and run a successful corporate website, SMEs need several investments that include financial resources for: i) the development and implementation of the website, ii) covering running costs, maintenance and upgrading, and iii) acquisition and training of the staff that coordinates the integration of the Internet with existing marketing processes (Morgan-Thomas & Bridgewater, 2004). Hence, the literature hypothesizes that there is a link between resource commitment to the Internet and the success of its implementation for exporting purposes. As such, the following hypothesis is offered for testing:

H2: The level of investment on Internet within a firm has a positive impact on its export revenues.

2.3 Level of firm's understanding and use of Internet strategies

Given the impact of globalization effects in the past 20 years, technological advances have increased exponentially. With respect to e-business technology, unless there are particular sectoral and product factors which preclude its usage, it is believed that performance of businesses not embracing Internet technology and Internet strategies will suffer as competition increasingly does so (Fillis et al., 2004). Regarding use of Internet strategies, successful exporters provide through their corporate website a range of contact, payment and shipping

options. The resulting flexibility means that differing customer capacities and preferences are catered to. In some cases the preference concerns security issues whereas in others, it is about service level (Rosson, 2004). Moreover, many SMEs believe that Internet technology has little or no relevance for their own enterprises and business plans. One reason for this is that SMEs are not fully aware of the benefits of Internet technology, as well as they are unsure of how to set up a corporate website and develop an Internet strategy. As most SMEs do not possess the technological sophistication to implement new Internet strategies on their own, they will need expert technical advice, skills development, access to capital and infrastructure, and assistance with formulating an appropriate Internet business strategy (Moodley, 2002). Therefore, it is expected that those SMEs which do understand and adopt new Internet strategies will experience a range of competitive advantages, resulting in increased profitability (Fillis et al., 2004). As such, the following hypothesis is offered for testing:

H3: The level of firm's understanding and use of Internet strategies has a positive impact on its export revenues.

2.4 Level of firm's management enthusiasm in promoting Internet use

Management's "laager" mentality, which has locked several SMEs into an insular, inwardly oriented way of thinking, can be a great obstacle to the diffusion and adoption of Internet use for exporting purposes (Moodley, 2002). Research suggests that companies with owners or managers being proactive and eager to adopt and promote Internet use for exporting purposes, are more likely to perform better results in their performance (Poon & Swatman, 1997; Rosson, 2004). As such, the following hypothesis is offered for testing:

H4: The level of firm's management enthusiasm in promoting Internet use has a positive impact on its export revenues.

2.5 Level of firm's management entrepreneurial orientation regarding Internet use

A large number of research studies support the view that entrepreneurial orientation improves a firm's financial performance in terms of sales growth and profitability (see for example: Schoollhammer, 1982; Namen & Slevin, 1993; Brown, 1996; Wiklund, 1999; Barrett, Balloun, & Weinstein, 2000). Moreover, there is evidence that owners/managers of SMEs with high entrepreneurial orientation are more likely to exploit Internet enabled opportunities and lead to an improvement of the firm's financial performance via a significant growth of export sales and profitability (Mostafa et al., 2006). As such, the following hypothesis is offered for testing:

H5: The level of firm's management entrepreneurial orientation regarding Internet use has a positive impact on its export revenues

3. Methodology

The study was based on an empirical investigation of Greek exporting SMEs that had a corporate website (fully operational or under construction and operational within a time span of a month). In order to identify the size of each firm and to exclude large companies from the sample, the two most commonly used criteria from the new Recommendation 2003/361/EC of the European Commission, the number of employees and annual turnover, were used.

A questionnaire was developed and pre-tested using a small sample of Greek exporters. The final instrument was e-mailed and a cross-sectional survey was used to collect the data from a sample of 312 Greek SMEs identified from the Greek Export Directory 2007-2008 published by the Athens Chamber of Commerce and Industry (ACCI). The research generated 80 usable questionnaires, accounting for an effective response rate of 25.6 percent which is considered to be adequate (Groves, 1990) as similar response rates have been achieved in prior

international and export marketing research by Morgan-Thomas and Bridgewater (2004). All the constructs in the study that examined the use of the Internet in exporting evolved from the literature (Bennett, 1997; Poon & Swatman, 1997; Morgan-Thomas & Bridgewater, 2004; Mostafa et al., 2006). All items were measured via a five-point scale.

The sample includes firms spanning a size range from 2 to 249, with an average of 62 employees. Twenty three categories of industrial sectors were identified, with food products to account for 18.8 percent, manufacturing for 10 percent, computers and office machinery for 7.5 percent, and agricultural products for another 7.5 percent. For a full description of the distribution of sample firms regarding the industrial sector they belong to, see Appendix 1. The majority of the respondents are located in the prefectures of Attica (27.5 percent) and of Central Macedonia (41.3 percent).

The literature proposes that the appropriateness of the Internet for an exporter should be viewed primarily in terms of incremental revenue attributable to the use of Internet in exporting (Poon & Swatman, 1997; Samiee, 1998a; Moodley, 2002; Morgan-Thomas & Bridgewater, 2004; Rosson, 2004) and secondarily in light of its direct and indirect costs and benefits (Samiee, 1998a; Moodley, 2002; Rosson, 2004). Thus, the dependent variable for this study is going to be measured in terms of incremental revenues (primary focus) attributable to the use of Internet in exporting based on firms' change of export revenues during the past 12 months.

All items included in this study were measured according to previously validated scales identified by the literature. IT and Internet literacy within the firm were measured via items that assessed: a) staff's level of certified IT knowledge, and b) the level of staff's experience on Internet use (Bennett, 1997; Morgan-Thomas & Bridgewater, 2004).

The investment on Internet technology within the firm was measured via items that tapped the level of the firm's: a) initial investment in Internet-related hardware/software, b) ongoing investment in Internet-related hardware/software, c) strategic planning for Internet activities, and d) overall Internet investment in terms of time and resources (Morgan-Thomas & Bridgewater, 2004).

The level of firm's understanding and use of Internet strategies was measured via items that assessed the existence and use of the firm's: a) online promotion strategy regarding the corporate website, b) advertising strategy regarding the corporate website, c) one-to-one Internet marketing strategy, d) any CRM system/program (Rosson, 2004).

The level of firm's management enthusiasm in promoting Internet use was measured via items that tapped the extent: a) of how fast the firm adopted Internet in comparison to other companies that belong to the same industrial sector (Poon & Swatman, 1997), and b) to which management supports with enthusiasm the promotion of Internet use (Morgan-Thomas & Bridgewater, 2004).

The level of firm's management entrepreneurial orientation regarding Internet use was measured via items that tapped the extent: a) to which firm's management is willing to take on some risks in order to promote Internet use, and b) to which firm's management adopts new strategies and innovations regarding Internet use (Fillis et al., 2004, Mostafa et al., 2006). The final reliabilities for all scales were equal or greater than 0.70, which means that they are all reliable and the calculation of summated scales is permitted, with two being equal or over 0.90 showing that the result should be considered very good and the elimination of any of the statements is unnecessary (Janssens, Wijnen, De Pelsmacker, & Van Kenhove, 2008). Appendix 2 provides a summary of the constructs along with alpha reliabilities.

4. Statistical Analysis and Findings

A multiple regression was conducted to examine the relationship between the incremental revenues attributable to the use of Internet in exporting of Greek SMEs as a dependent variable

and the five intra-firm characteristics discussed in the section “Research Hypotheses” as the independent variables. Table 1 presents the results of multiple regression analysis, which indicates that the combined effects of the explanatory variables (which were not multicollinear to any damaging extent) were strongly significant ($F = 4.182$, $p < 0.01$). Due to some missing values in six responses, the total number of firms in the sample was reduced to 74.

Table 1: Multiple regression analysis

Independent Variables	B	Beta	t	Sig.	Hypothesis	Supported?
Literacy	-0.299	-.119	-1.021	0.311	H1	No
InvestInternet	0.932	.453	3.228	0.002***	H2	Yes
InternetStrategies	-0.117	-.075	-0.655	0.515	H3	No
Enthusiasm	0.680	.234	1.753	0.084*	H4	Yes
Entrepreneurship	-0.040	-.025	-0.155	0.877	H5	No

$R^2 = 0.235$ $n = 74$ $df = 5$

Notes: *Significant at $p < 0.10$; **Significant at $p < 0.05$; ***Significant at $p < 0.01$

The analysis resulted in an $R^2 = 0.235$ suggesting that the five independent variables explained 23.5 percent of the variation in the incremental revenues attributable to the use of Internet in exporting of Greek SMEs. Overall, two coefficients concerning the research hypotheses, level of investment on Internet (H2) and firm’s management enthusiasm in promoting Internet use (H4), are significant at the level of 0.10 or higher. The rest of the hypotheses are not supported. In terms of the magnitude of effects, the results revealed that the firm’s level of investment on Internet represents the strongest factor in enhancing its export revenues (0.453), followed by the level of management’s enthusiasm in promoting Internet use (0.234).

5. Discussion

This research study identifies a number of findings which make a contribution to the understanding of the extent to which Greek SMEs can enhance their export revenues from the use of Internet. The discussion of these findings follows the description of the proposed hypotheses presented in the section “Research Hypotheses”.

International literature suggests that the successful use of Internet and e-commerce as a strategy for expansion into new markets is likely to be influenced by several factors. Among these factors, the availability of IT literate personnel is of great importance (Moodley, 2002). In addition, the results of a number of research studies showed that the level of IT and Internet knowledge and experience within a firm had a significant impact on export performance and Internet adoption (Bennett, 1997; Dholakia & Kshetri, 2004; Morgan-Thomas & Bridgewater, 2004; Mostafa et al., 2006). The findings of this paper do not support this suggestion, since there seems to be a negative (-0.299) and insignificant impact of staff’s level of Internet knowledge and experience on firm’s export revenues. This negative and insignificant impact could be caused by the fact that extensive IT knowledge and Internet experience creates the illusion of technological security within the firm, thus making managers less proactive and energetic towards Internet use for exporting purposes.

Research suggests that firms making a larger financial and managerial investment in technology as a whole, reap higher rewards from the Internet than those who do not (Chatterjee, Grewal, & Sambamurthy, 2002). This suggestion creates a link between resource commitment to the Internet and the success of its implementation for exporting purposes. This hypothesis is supported in the research of Morgan-Thomas and Bridgewater (2004), as well as in the present study. These results of this research regarding Greek SMEs revealed that the firm’s level of

investment on Internet technologies has a strong and significant positive impact (0.932) on its export revenues.

According to the literature, it is believed that performance of businesses not embracing Internet technology and Internet strategies will suffer as competition increasingly does so. Therefore, it is expected that those SMEs which do understand and adopt new Internet strategies will experience a range of competitive advantages, resulting in increased profitability (Fillis et al., 2004). The findings of this study do not support this suggestion, and they show that there is a negative (-0.117) and insignificant relationship between the level of firm's understanding and use of Internet strategies and its export revenues. One possible explanation for that negative relationship is that users in several countries of the world, like Greece, are not yet familiar with advanced Internet technologies, like one-to-one marketing systems, or new sophisticated CRM programs. This fact could result in a negative belief-attitude towards new and unknown to them Internet technologies incorporated into company's professional website.

Previous research suggests that companies with owners or managers being proactive and eager to adopt and promote Internet use for exporting purposes, are more likely to perform better results in their performance (Poon & Swatman, 1997; Rosson, 2004). Results for Greek exporting SMEs yielded weak support for this hypothesis, indicating a positive (0.680) relationship between the level of firm's management enthusiasm in promoting Internet and its export revenues.

There is evidence that owners/managers of SMEs with high entrepreneurial orientation are more likely to exploit Internet enabled opportunities and lead to an improvement of the firm's financial performance via a significant growth of export sales and profitability (Mostafa et al., 2006). The results of this paper do not support those suggestions. The findings showed that there is no significant positive relation between management's entrepreneurial orientation and enthusiasm in supporting Internet use and the firm's export revenues. Indeed, there is a very slight negative impact (-0.04) that requires further research and exploration in order to be justified properly and thoroughly.

6. Conclusions and Managerial Implications

This study provides an insight on the current situation of successful Internet use for exporting purposes by Greek SMEs and makes a valuable contribution by extending the literature on the relationship between the Internet and SMEs export revenues in several areas within the specific Greek context. First, the constructs developed here can serve as a foundation for further research into the Internet and SMEs enhancement of export revenues. Second, the study has contributed to a more comprehensive understanding of the successful use of intra-firm characteristics in export marketing and the role the Internet plays. Third, evidence has been provided that the level of firm's investment on Internet will have a strong positive impact on its export revenues. Finally, the management of any Greek exporting SME needs to be aware of the fact that their enthusiasm and positive attitude towards the adoption and intensive use of Internet has a positive influence on their export profitability. IT and Internet literacy within the firm, the level of firm's understanding and use of Internet strategies, and management's entrepreneurial orientation regarding Internet's use for exporting purposes, are factors that Greek exporting SMEs have to take into account, but not as their primary focus.

7. References

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8. Appendices

Appendix 1: Industrial Sector of Sample Firms (n=80)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agricultural Products	6	7.5	7.5	7.5
	Leather/Furs	1	1.3	1.3	8.8
	Food Products	15	18.8	18.8	27.5
	Manufacturing	8	10.0	10.0	37.5
	Publishing	1	1.3	1.3	38.8
	Clothing Industry	5	6.3	6.3	45.0
	Furniture	5	6.3	6.3	51.3
	Hi-tech Products	2	2.5	2.5	53.8
	Textile	5	6.3	6.3	60.0
	Traditional Art	1	1.3	1.3	61.3
	Metal Products	3	3.8	3.8	65.0
	Machinery/Components	1	1.3	1.3	66.3
	Wood Products	1	1.3	1.3	67.5
	Raw Materials	3	3.8	3.8	71.3
	Petroleum/Fuels	1	1.3	1.3	72.5
	Plastic Products	3	3.8	3.8	76.3
	Wines/Refreshments/Alcohol Drinks	3	3.8	3.8	80.0
	Footwear	1	1.3	1.3	81.3
	Computers/Office Machinery	6	7.5	7.5	88.8
	Medical Products/Drugs	1	1.3	1.3	90.0
Chemicals	3	3.8	3.8	93.8	
Other	5	6.3	6.3	100.0	
Total		80	100.0	100.0	

Appendix 2: Summary of constructs and alpha reliabilities

Variable name	Measured Items	Cronbach's Alpha
IT and Internet literacy within the firm	i. Staff's level of certified IT knowledge ii. Level of staff's experience on Internet use	0.700
Level of investment on Internet technology within the firm	i. Initial investment in Internet-related hardware/software ii. Ongoing investment in Internet-related hardware/software iii. Strategic planning for Internet activities iv. Overall Internet investment in terms of time and resources	0.900
Level of firm's understanding and use of Internet strategies	i. Online promotion strategy regarding corporate website ii. Advertising strategy regarding corporate website iii. One-to-one Internet marketing strategy iv. Existence and use of any CRM system/program	0.762
Level of firm's management enthusiasm in promoting Internet use	i. Firm's Internet adoption rate ii. Level of firm's management enthusiasm	0.749
Level of firm's management entrepreneurial orientation regarding Internet use	i. Willingness of firm's management to take on some risks ii. Level of firm's management adoption of new strategies and innovations	0.902