International Review of Business Research Papers
Vol. 7. No. 1. January 2011. Pp. 106 – 117

Enabling Factors Influencing Internet Adoption by New Zealand Small and Medium Size Retail Enterprises

Kevin E. Voges* and Venkateswarlu Pulakanam**

The uptake of Internet-based electronic-commerce in New Zealand has been relatively slow compared to the US and Europe. This paper reports the results of a mail survey of 130 SMEs with 200 or less full-time employees from the retail industry throughout New Zealand, randomly selected from online databases. The results obtained indicated that the level of Internet support was positively related to the perceived benefits and the number of Internet uses. This result was consistent with previous studies that showed that organizations that posessed higher levels of IT knowledge and capabilities were more likely to adopt and implement Internet-enabled capabilities.

Field of Research: Management of Small Business

1. Introduction

As the twenty-first century unfolds, the Internet and electronic commerce have become increasingly important to the business world. In particular, small to medium sized businesses (SMEs) can now overcome some of their major disadvantages, such as size, limited financial, technological and human resources, and limited exposure to the global marketplace, by adopting Internet technologies (Cooper and Burgess 2000; Maswera, Dawson and Edwards 2008; Riquelme 2002).

In New Zealand, SMEs are recognised as a vibrant and innovative sector of the economy, constituting approximately 96% of enterprises, 35% of the national economic output, and over 40% of employment (Al-Qirim 2004; Corner 2001; McCole and Ramsey 2004). Within the SME sector, the retail industry in particular plays a key role in New Zealand's national economy. It generates a substantial level of annual sales of around $50 billion, and supports approximately 20 percent of the nation's employment. The New Zealand government had an expectation that Internet-enabled business activities would help minimise the constraints caused by time and distance, and therefore benefit the business supply chain (Rashid and Al-Qirim 2001). According to Hossain (2000), New Zealand offered many strategic advantages for Internet commerce, such as "English speaking, geographical location, acceptance of communications technology, deregulated telecommunications industry, an exporter of technology expertise" (p. 120).

However, the uptake of Internet-based electronic-commerce in New Zealand has been relatively slow compared to the US and Europe (Hossain 2000; Locke and Cave 2002; Yao 2004). Currently, research into the impacts of firm- and industry-specific factors on Internet adoption among SMEs is limited (MacGregor and Vrazalic 2006; Nikolaeva 2006), particularly in the New Zealand context. Thus, the aim of the research reported in this paper is to provide a better understanding of Internet adoption behavior among New Zealand retail SMEs.

*Associate Professor Kevin E. Voges, Department of Management, University of Canterbury, New Zealand
Email: kevin.voges@canterbury.ac.nz
**Dr. Venkateswarlu Pulakanam, Department of Management, University of Canterbury, New Zealand
Email: venkat.pulakanam@canterbury.ac.nz

The paper provides a brief overview of enablers that determine the likelihood of Internet adoption for SMEs, taken from the current literature. These range from attitudinal factors, such as the perceived benefits of Internet adoption and pressures felt from the marketplace, through to structural factors such as company size and legal structure. The paper then describes the mail survey methodology used to assess the importance of these enablers in the New Zealand retail industry. The results of this survey are then presented, followed by a discussion of conclusions and limitations.

2. Literature Review

In studies of the attitude towards technological innovations in SMEs, most were more likely to avoid sophisticated software and applications due to lack of necessary specialists, and the limited level of human, financial and technological resources within the firm (Begin and Boisvert 2002; Seyal et al. 2004). Prior research has identified a number of enablers that determine the likelihood of Internet adoption for SMEs. For example, Mehrtens et al. (2001) in their Internet adoption model, identified perceived benefits and organizational readiness as two important factors.

Perceived Benefits: Mehrtens et al. (2001) identified three types of perceived benefits: relative advantage, communication, and business tool use. The aspects of relative advantage and communication were identified by comparing the Internet with traditional methods of doing businesses. Some of the sources of relative advantage included global resources of information and the advantage of a Website over traditional forms of advertising and retailing. The Internet was viewed not only as a source of information but a business tool to give a presence or build a company's image on the World Wide Web.

Organizational Readiness: Mehrtens et al. (2001) also identified three forms of organizational readiness as highly relevant to the adoption of the Internet: the level of IT knowledge among IT professionals; the level of IT knowledge among non-IT professionals; and the level of IT use within the organization. Empirical evidence shows that businesses with employees who had more knowledge of a technological innovation were more likely to use more of that innovation (Thong 1999). Hadaya (2008) found that technological readiness and support from technology experts influenced the use of B-to-B e-marketplaces by SMEs. In a related finding, In addition, the presence of an innovation champion, that is, a person with a reasonable amount of knowledge and interest in technology, can provide the drive and effort to facilitate the technology adoption (Grandon and Pearson 2004; Iacovou et al. 1995; Poon and Swatman 1997; Seyal and Rahman 2003; Teo and Ranganathan 2004). Mao and Palvia (2008) found that more experienced IT users had more positive perceptions, attitudes, and behavioral intentions, and consequently, were more likely to make use of new technology.

Other factors identified in the literature include external pressure, business characteristics such as legal structure, size and international focus, and prior length, types and level of Internet use.

External Pressure: External pressure was suggested by a number of researchers as influential in technological adoption by SMEs (Chong 2006; Chwelos et al. 2001; Gibbs and Kraemer 2004; Grandon and Pearson 2004; Hadaya 2008; Iacovou et al. 1995; Looi 2005; Premkumar and Roberts 1999; Scupola 2003; Wang and Cheung 2004). In this context, external pressure refers to the influential factors from outside the organizational

environment, such as pressure from competitors, customers, and/or governmental agencies (Chau and Hui 2001; Iacovou et al. 1995).

Legal Structure: Wang and Cheung (2004) suggested incorporating business type into any analysis of Internet adoption as a possible factor, while Chuang et al. (2007) found that the extent of e-commerce adoption varied across business types. For the current study, business type was conceptualized as legal structure, categorized into limited enterprises, sole proprietors, partnerships, small corporations, and other types of SMEs.

Business Size: Previous research has also suggested that firm size is a major determinant of a firm's decision and involvement in adopting the Internet (Dholakia and Kshetri 2004; Lertwongsatien and Wongpinunwatana 2003; Lertwongsatien, Wongpinunwatana and Achakulwisut 2004; Palvia and Palvia 1999; Poon and Swatman 1999; Premkumar and Roberts 1999; Thong 1999; Wang and Cheung 2004). In contrast to this, other studies found no significant support for this organizational factor (Grandon and Pearson 2004; Mehrtens et al. 2001; Scupola 2003).

International Focus: Past research has also reported that the international experience of a firm was one of the most significant factors influencing the extent of Internet adoption in SMEs. It has been found that the SMEs with a higher level of international experience had a higher level of Internet use (Kula and Tatoglu 2003).

Years on the Internet: Locke (2004) found that the amount of experience that the owner/manager has had with the technology adopted determined how well it was implemented. Dholakia and Kshetri (2004) and Golden, Hughes, and Ruane (2004) have also found that a firm's previous exposure to and attitude towards the technology were important determinants in the adoption decision of SMEs.

Types of Internet Usage: Several studies suggested that adoption behavior may also be predicted through the types of Internet uses by SMEs (Clark 2002; Kula and Tatoglu 2003; Walczuch et al. 2000). In a study on net readiness in eight New Zealand industries, the level of Internet adoption and the sophistication of electronic business capabilities were illustrated by the number and types of website functions (Clark, 2002).

Level of Internet Support: Previous studies suggested that levels of Internet adoption can be assessed by the levels of IT sophistication or support within a firm (Egan, Clancy and O'Toole 2003; Ihlstrom and Nilsson 2003; Lee and Cheung 2004; Martin and Matlay 2001; Poon and Swatman 1997; Rao, Metts and Monge 2003; Shiels, McIvor and O'Reilly 2003). Furthermore, Lefebvre, Harvey, and Lefebvre (1991) have argued that not all small businesses are the same, and their technology adoption models varied in relation to their current level of technological advancement.

3. Methodology

This study aimed to explore some specific factors that may influence Internet adoption among retail SMEs. To do this, a mail survey method was used, as questionnaires are able to provide a basis for generalizing and give some degree of statistical power. Subjects of the survey were retail SMEs with 200 or less full-time employees nationwide in New Zealand. The survey was conducted on 500 firms randomly selected from online databases across the retail industry throughout New Zealand. An initial sample size of 500 was thought to be large enough to give a reasonable number of responses given the

relatively low response rate for mail surveys. To be included in the survey, the organizations selected needed to have adopted at least one of the following forms of Internet usage: e-mail, Internet browsing, or a website for business purposes. We asked the person responding to the survey to be holding a management position and who had been involved in any decision on the adoption of Internet technologies. This was to ensure that the attitudes reflected in the questionnaire were reflective of the person carrying out the relevant decision-making, although we had no direct control over this.

One hundred and thirty firms responded, a 26% response rate, which is fairly standard in mail surveys. Approximately three-quarters of the SMEs who participated were limited enterprises (76.2%), 10.8% were sole proprietors, 6.2% were partnerships, and 6.2% were small corporations. Most SMEs (82.3%) did not have an international focus (measured as either having international customers or trading in overseas countries), although a small percentage of firms (3.8%) said they would become an international business in the near future. For the 23 firms that indicated they were international, the average number of years of international experience was 22.9. The majority of the firms (85.4%), indicated they had 20 or less full time employees (FTE), 11.5% had between 20 to 99 FTEs, and only a small percentage (3.1%) had FTE number greater than 99. The majority of firms (92.6%) were not family businesses. The earliest year in which the SMEs started to use the Internet as a business tool was 1990, with a median year of 1999.

4. Results

Section 5.1 reports frequency data for levels of Internet support and types of Internet usage. Sections 5.2 through 5.5 report the results of a series of ANOVAs and t-tests with the Internet adoption factors as dependent variables and various company variables as independents. In all tables means are shown based on a 1 to 5 Likert scale, with 5 indicating higher levels of the enabling factor.

4.1 Internet Usage

For the level of Internet support offered by the business, 38.5% had a business webpage with an online catalogue. Only 7.7% indicated that all their business transactions and payments could be done through the webpage (Table 1).

Table 1: Level of Internet Support

	Frequency	Percent
No Internet connection	2	1.5%
Internet connection without website	22	16.9%
Basic website without permanent Internet connection	10	7.7%
Basic website with permanent Internet connection	36	27.7%
Business website with online catalogue	50	38.5%
All transactions/payments can be done on website	10	7.7%

Table 2: Types of Internet Usage

	Frequency	Percent
External communication / E-mail	122	93.8%
Randomly looking for information	110	84.6%
Obtaining information from suppliers	104	80.0%
Receiving orders from customers	97	74.6%
Offering information to consumers on website	96	73.8%
Searching for webpage addresses	79	60.8%
Product and market research	72	55.4%
Sending purchase orders to suppliers	62	47.7%
Contact with government agencies	53	40.8%
Internal communication / Intranet	48	36.9%
Offering online payment options	42	32.3%
Placing job vacancies	30	23.1%
Voice / Video conferencing	4	3.1%

As shown in Table 2, firms adopting Internet technologies predominantly use it as a way of external communication or E-mail (93.8%). Many firms used the Internet to randomly look for information (84.6%), while 80% used it to obtain information from suppliers. Close to a third (32.3%) of the firms offered online payment options to their customers, and about a quarter (23.1%) placed their job vacancies online. Voice and/or video conferencing was not popular, with only 3.1% using it. The number of separate uses identified by each firm was summed to form a “Number of Internet Uses” measure. This ranged from 1 to 12, with 7 the average number of uses.

4.2 Adoption Influencers by Level of Internet Support

A series of one-way analysis of variance (ANOVA) tests were undertaken on the levels of Internet support offered by retail SMEs (firms indicating no Internet connection were excluded from the analysis). The tests showed that there were significant differences in perceived benefits and number of Internet uses (Table 3). Not surprisingly, as the level of Internet support increased the number of uses of the Internet increased. The perception of perceived benefits from adopting Internet technology also increased as the level of Internet support increased.

Table 3: Summary of ANOVA Analyses for Levels of Internet Support

	1*	2	3	4	5	F	df	p
Number of uses of Internet	4.59 (1.87)	6.00 (3.09)	7.06 (2.38)	8.18 (2.27)	9.30 (1.57)	11.53	124	p<0.001
Perceived benefits	3.45 (0.58)	3.44 (0.72)	3.70 (0.63)	3.85 (0.51)	4.02 (0.49)	2.88	116	p<0.05
Organizational readiness	2.85 (0.84)	3.14 (0.71)	3.17 (0.69)	2.98 (0.78)	3.08 (0.69)	0.72	116	ns
Organizational readiness (Non-IT Resources)	2.73 (1.00)	2.70 (0.79)	2.93 (0.95)	2.40 (0.96)	2.20 (0.86)	2.21	124	ns
Organizational readiness (IT Resources)	2.95 (0.89)	3.43 (0.72)	3.33 (0.81)	3.36 (0.92)	3.67 (0.72)	1.45	124	ns
External pressure	2.45 (0.77)	2.50 (0.73)	2.95 (0.76)	2.77 (0.81)	2.98 (0.51)	1.30	116	ns

* 1 – Internet connection without website
2 – Webpage without permanent Internet connection
3 – Webpage with permanent Internet connection
4 – Webpage with online catalogue
5 – All transactions and payments through website

4.3 Adoption Influencers by Business Type and Size

For business type (conceptualized as legal structure), there were significant differences for perceived benefits and number of uses of the Internet (see Table 4). Because of the small number of responses for business type “other,” this data was excluded from the analysis. Post-hoc tests showed that the differences in perceived benefits were between sole proprietors and limited enterprises, and between partnerships and limited enterprises. Both small corporations and limited enterprises identified more perceived benefits. For the number of uses of the Internet, post-hoc tests found significant differences between sole proprietors and small corporations, sole proprietors and limited enterprises, and partnerships and limited enterprises. Both small corporations and limited enterprises had higher levels of Internet use.

Table 4: Summary of ANOVA Analyses for Business Type

	1*	2	3	4	F	df	p
Number of uses of Internet	4.71 (2.79)	5.00 (2.56)	7.50 (1.85)	7.53 (2.60)	6.01	125	p<0.01
Perceived benefits	3.41 (0.64)	3.30 (0.93)	3.66 (0.36)	3.79 (0.57)	3.00	117	p<0.05
Organizational readiness	3.22 (0.80)	3.05 (1.13)	3.48 (0.58)	2.99 (0.72)	1.30	117	ns
Organizational readiness (Non-IT Resources)	3.00 (0.92)	2.81 (1.53)	2.81 (0.84)	2.58 (0.95)	0.78	125	ns
Organizational readiness (IT Resources)	3.38 (0.89)	3.21 (0.94)	3.92 (0.58)	3.26 (0.86)	1.53	125	ns
External pressure	2.71 (0.63)	2.84 (0.98)	3.31 (0.69)	2.70 (0.77)	1.57	117	ns

* 1 – Sole proprietor
2 – Partnership
3 – Small corporation
4 – Limited enterprise

For the analyses of business size, the data were combined into two groups: group one had between 1 and 20 FTEs and group two had between 21 and 200 FTEs. The results of a series of t-tests showed that there was a significant difference in the number of uses of the Internet, with the larger company having the higher number of uses. All the other variables showed no significant differences. Table 5 gives a summary of the result for business size.

Table 5: Summary of t-Test Analyses for Business Size

	1 to 20	21 to 200	t-value	df	p
Number of uses of Internet	6.76 (2.74)	8.89 (1.94)	3.26	128	p<0.01
Perceived benefits	3.68 (0.62)	3.85 (0.50)	1.13	123	ns
Organizational readiness	3.02 (0.74)	3.19 (0.83)	0.92	125	ns
Organizational readiness (Non-IT)	2.62 (1.00)	2.79 (0.89)	0.70	128	ns
Organizational readiness (IT)	3.29 (0.84)	3.46 (0.94)	0.78	125	ns
External pressure	2.72 (0.76)	2.96 (0.79)	1.26	124	ns

4.4 Adoption Influencers by International Business Focus

A series of t-tests were also conducted to determine if there were any significant differences between international retail SMEs (defined as either having international customers or trading in overseas countries) and non-international retail SMEs (Table 6). There were significant differences found between the means for perceived benefits, number of uses of the Internet, and organizational readiness (non-IT resources). For all variables with significant differences, except for organizational readiness (non-IT resources), higher scores were associated with those firms with an international focus.

Table 6: Summary of t-Test Analyses for International Focus

	No Int'l Focus	Int'l Focus	t-value	df	p
Number of uses of Internet	6.75 (2.74)	8.52 (2.33)	2.87	123	p<0.01
Perceived benefits	3.65 (0.59)	3.97 (0.65)	2.27	118	p<0.05
Organizational readiness	3.07 (0.75)	2.97 (0.78)	0.54	120	ns
Organizational readiness (Non-IT)	2.74 (1.00)	2.26 (0.82)	2.14	123	p<0.05
Organizational readiness (IT)	3.30 (0.84)	3.42 (0.94)	0.61	120	ns
External pressure	2.71 (0.75)	2.91 (0.84)	1.08	119	ns

4.5 Adoption Influencers by Year Established Internet Presence

The sample of SMEs was divided into two groups – those firms who had an Internet presence prior to 2000, and those who established an Internet presence in 2000 or later. Statistically significant differences were found for the number of Internet uses (Table 7), with a higher level of Internet use associated with businesses with an earlier Internet presence.

Table 7: Summary of t-Test Analyses for Year Established Internet Presence

	Prior to 2000	2000 & after	t-value	df	p
Number of uses of Internet	7.64 (2.71)	6.29 (2.61)	2.85	128	p<0.01
Perceived benefits	3.78 (0.60)	3.61 (0.60)	1.55	123	ns
Organizational readiness	3.05 (0.72)	3.04 (0.80)	0.05	125	ns
Organizational readiness (Non-IT)	2.57 (0.95)	2.75 (1.04)	1.02	128	ns
Organizational readiness (IT)	3.36 (0.84)	3.24 (0.88)	0.78	125	ns
External pressure	2.84 (0.77)	2.64 (0.76)	1.43	124	ns

5. Summary and Conclusions

The results obtained from the retail SMEs indicated that the level of Internet support was positively related to the perceived benefits and the number of Internet uses. This result was consistent with previous studies that showed that organizations that posessed higher level of IT knowledge and capabilities were more likely to adopt and implement Internet-enabled capabilities (Iacovou et al. 1995; Lertwongsatien and Wongpinunwatana 2003).

Business type not only had an impact on the number of Internet uses, but also on the level of perceived benefits. These findings support an earlier study by Clark (2002), who suggested that the type of business operations influences the types of technology solutions that are appropriate to the firm and that are actually used by the firm. Business size only affected the number of Internet uses within firms. These overall results were consistent with the findings of Dholakia and Kshetri (2004), Lertwongsatien and Wongpinunwatana (2003), and Wang and Cheung (2004), but contradictory to those of Grandon and Pearson (2004), Mehrtens et al. (2001), and Scupola (2003).

For businesses with an international focus, the overall results suggested that whether or not organizations engaged in international business had a significant impact on the level of perceived benefits and the number of Internet uses. It was found that international business had no effect on the level of external pressure, and only a partial impact on organizational readiness.

Prior experience on the Internet did not have any impact on the Internet adoption factors, but it was found that the more experienced a firm was in terms of Internet presence, the greater the number of Internet uses it reported.

Overall, several conclusions can be drawn from the findings of this study. Among the three main categories of adoption factors, perceived benefits provided a stronger impact on the adoption decision than either organizational readiness or external pressure. This finding was consistent with previous studies that pointed to the relative advantage of the technology as the key factor influencing an SMEs' decision to adopt innovation (Chau and Hui 2001; Thong 1999). However, retail firms were concerned with the organizational and technological resources needed to support an Internet adoption decision. For example, in open-ended questions associated with the survey, many retail businesses had commented on issues such as the cost of a high speed Internet connection and concerns with issues of Internet security.

This research has helped to identify some issues relating to Internet adoption and SMEs, and the findings should be of value to management in delivering better Internet strategies for their businesses. However, there are a number of limitations to the study that need to be kept in mind. Firstly, only the retail industry was examined. It is quite possible that the importance of enablers will vary across industry types, so caution needs to be expressed in extrapolating the results to other industries. Similarly, only one country's industry was examined. Countries differ in their level of Internet infrastructure support, so different enablers may vary in importance depending on these differences. Finally, while we did attempt to provide a comprehensive list of enabling factors based on the current literature, it is possible that other enabling factors are yet to be identified.

Future research should be carried out in other industry sectors to better understand differences in adoption rates across those sectors. Work needs to continue to identify and assess the impact of other Internet adoption enablers.

References

Al-Qirim, NAY (Ed.) 2004, *Electronic commerce in small to medium-sized enterprises: Frameworks, issues, and implications*, Idea Group, Hershey, PA.

Begin, L and Boisvert, H 2002, 'E-commerce: Evaluating the external business environment', *CMA Management*, vol. 76, pp. 16-21.

Chau, PYK. and Hui, KL 2001, 'Determinants of small business EDI adoption: An empirical investigation', *Journal of Organizational Computing and Electronic Commerce*, vol. 11, pp. 229-52.

Chong, S 2006, 'An empirical study of factors that influence the extent of deployment of electronic commerce for small- and medium-sized enterprises in Australia', *Journal of Theoretical and Applied Electronic Commerce Research*, vol. 1, no. 2, pp. 45-57.

Chuang, T-T, Nakatani, K., Chen, J. C.H. and Huang, I-L., 2007, 'Examining the impact of organisational and owner's characteristics on the extent of e-commerce adoption in SMEs', *International Journal of Business and Systems Research*, vol. 1, no. 1, pp. 61-80.

Chwelos, P, Benbasat, I and Dexter, AS 2001, 'Research report: Empirical test of an EDI adoption model', *Information Systems Research*, vol. 12, pp. 304-22.

Clark, DN 2002, 'Getting ready for the digital economy: Net readiness in New Zealand industries', *Strategic Change*, vol. 11, pp. 195-203.

Cooper, J and Burgess, L 2000, 'A model of Internet commerce adoption (MICA)', in SM Rahman and MS Raisinghani (eds.), *Electronic commerce: Opportunity and challenges*, Idea Group, Hershey, PA, pp. 189-201.

Corner, P 2001, 'Improving the performance of New Zealand SMEs: Measures for success', *Business Review*, vol. 3, pp. 1-16.

Dholakia, RR and Kshetri, N 2004, 'Factors impacting the adoption of the Internet among SMEs', *Small Business Economics*, vol. 23, pp. 311-23.

Egan, T, Clancy, S and O'Toole, T 2003, 'The integration of e-commerce tools into the business processes of SMEs', *Irish Journal of Management*, vol. 24, pp. 139-53.

Gibbs, JL and Kraemer, KL 2004, 'A cross-country investigation of the determinants of scope of e-commerce use: An institutional approach', *Electronic Markets*, vol. 14, pp. 124-37.

Golden, W, Hughes, M and Ruane, L 2004, 'Successful SMEs in e-commerce', in NAY Al-Qirim (ed.), *Electronic commerce in small to medium-sized enterprises: Frameworks, issues and implications*, Idea Group, Hershey, PA, pp. 165-78.

Grandon, EE and Pearson, JM 2004, 'Electronic commerce adoption: An empirical study of small and medium US businesses', *Information and Management*, vol. 42, no. 1, pp. 197-216.

Hadaya, P 2008, 'Determinants and performance Outcome of SMEs' use of vertical B-to-B e-marketplaces to sell products', *Electronic Markets*, vol. 18, no. 3, pp. 260-274.

Hossain, L 2000, 'Planning e-strategies for New Zealand firms', in Rahman, S. M. and Raisinghani, M. S. (Eds.), *Electronic Commerce: Opportunity and Challenges*, Idea Group, Hershey, PA, pp. 115-25.

Iacovou, CL, Benbasat, I and Dexter, AS 1995, **'**Electronic data interchange and small organizations: Adoption and impact of technology', *MIS Quarterly*, vol. 19, pp. 465-86.

Ihlstrom, C and Nilsson, M 2003, 'E-business adoption by SMEs – prerequisites and attitudes of SMEs in a Swedish network', *Journal of Organizational Computing and Electronic Commerce*, vol. 13, pp. 211-23.

Kula, V and Tatoglu, E 2003, 'An exploratory study of Internet adoption by SMEs in an emerging market economy', *European Business Review*, vol. 15, pp. 324-34.

Lee, MKO and Cheung, CMK 2004, 'Internet retailing adoption by small-to-medium sized enterprises (SMEs): A multiple-case study', *Information Systems Frontiers*, vol. 6, pp. 385-97.

Lefebvre, LA, Harvey, J and Lefebvre, E 1991, 'Technological experience and the technology adoption decisions in small manufacturing firms', R*&D Management*, vol. 21, pp. 241-49.

Lertwongsatien, C and Wongpinunwatana, N 2003, 'E-commerce adoption in Thailand: An empirical study of Small and Medium Enterprises (SMEs)', *Journal of Global Information Technology Management*, vol. 6, pp. 67-83.

Lertwongsatien, C, Wongpinunwatana, N and Achakulwisut, A 2004, 'Adoption and diffusion patterns of e-commerce in SMEs', in NAY Al-Qirim (ed.), *Electronic commerce in small to medium-sized enterprises: Frameworks, issues and implications*, Idea Group, Hershey, PA, pp. 107-26.

Locke, S 2004, 'ICT adoption and SME growth in New Zealand', *Journal of American Academy of Business*, vol. 4, pp. 93-102.

Locke, S and Cave, J 2002, 'Information communication technology in New Zealand SMEs', *Journal of American Academy of Business*, vol. 2, pp. 235-40.

Looi, HC 2005, 'E-commerce adoption in Brunei Darussalam: A quantitative analysis of factors influencing IT's adoption', *Communications of the Association for Information Systems*, vol. 15, pp. 61-81.

MacGregor, RC and Vrazalic, L 2006, 'e-Commerce adoption barriers in small businesses and the differential effects of gender', *Journal of Electronic Commerce in Organizations*, vol. 4, no. 2, pp. 1-24.

Mao, E, and Palvia, P 2008, 'Exploring the effects of direct experience on IT use: An organizational field study', *Information and Management*, vol. 45, no. 4, pp. 249-256.

Martin, LM. and Matlay, H 2001, 'Blanket approaches to promoting ICT in small firms: Some lessons from the DTI ladder adoption model in the UK', *Internet Research*, vol. 11, pp. 399-411.

Maswera, T, Dawson, R and Edwards, J 2008, 'E-commerce adoption of travel and tourism organisations in South Africa, Kenya, Zimbabwe and Uganda', *Telematics and Informatics*, vol. 25, no. 3, pp. 187-200.

McCole, P and Ramsey, E 2004, 'Internet-enabled technology of Northern Ireland, the Republic of Ireland and New Zealand', *Marketing Intelligence & Planning*, vol. 22, pp. 761-82.

Mehrtens, J, Cragg, PB and Mills, AM 2001, 'A model of Internet adoption by SMEs', *Information & Management*, vol. 39, pp. 165-176.

Nikolaeva, R 2006, 'e-Commerce adoption in the retail sector: Empirical insights', *International Journal of Retail and Distribution Management*, no. 3445, pp. 369-386.

Palvia, PC and Palvia, SC 1999, 'An examination of the IT satisfaction of small-business users', *Information & Management*, vol. 35, pp. 127-37.

Poon, S and Swatman, PMC 1997, 'Small business use of the Internet: Findings from Australian case studies', *International Marketing Review*, vol. 14, pp. 385-402.

Poon, S and Swatman, PMC 1999, 'An exploratory study of small business Internet commerce issues', *Information & Management*, vol. 35, pp. 9-18.

Premkumar, G and Roberts, M 1999, 'Adoption of new information technologies in rural small businesses', *Omega, International Journal of Management Science*, vol. 27, no. 4, pp. 467-84.

Rao, SS, Metts, G and Monge, MC A 2003, 'Electronic commerce development in small and medium sized enterprises', *Business Process Management Journal*, vol. 9, pp. 11-32.

Rashid, MA.and Al-Qirim, NA 2001, 'E-commerce technology adoption framework by New Zealand small to medium size enterprises', *Research Letters in the Information Mathematical Science*, vol. 2, pp. 63-70.

Riquelme, H 2002, 'Commercial Internet adoption in China: Comparing the experience of small, medium and large businesses', *Internet Research*, vol. 12, pp. 276-87.

Scupola, A 2003, 'The adoption of Internet commerce by SMEs in the south of Italy: An environmental, technological and organisational perspective', *Journal of Global Information Technology Management*, vol. 6, pp. 52-71.

Seyal, AH and Rahman, MNA 2003, 'A preliminary investigation of e-commerce adoption in small and medium enterprises in Brunei', *Journal of Global Information Technology Management*, vol. 6, no. 2, pp. 6-26.

Seyal, AH, Awais, MM, Shamail, S and Abbas, A 2004, 'Determinants of electronic commerce in Pakistan: Preliminary evidence from small and medium enterprises', *Electronic Markets*, vol. 14, pp. 372-87.

Shiels, H, McIvor, R and O'Reilly, D 2003, 'Understanding the implications of ICT adoption: Insights from SMEs', *Logistics Information Management*, vol. 16, pp. 312-26.

Teo, TSH and Ranganathan, C 2004, 'Adopters and non-adopters of business-to-business electronic commerce in Singapore', *Information and Management*, vol. 42, pp. 89-102.

Thong, JYL 1999, 'An integrated model of information systems adoption in small businesses', *Journal of Management Information Systems*, vol. 15, pp. 187-214.

Walczuch, R, Van Braven, G and Lundgren, H 2000, 'Internet adoption barriers for small firms in the Netherlands', *European Management*, vol. 18, pp. 561-72.

Wang, S and Cheung, W 2004, 'E-Business adoption by travel agencies: Prime candidates for mobile e-business', *International Journal of Electronic Commerce*, vol. 8, pp. 43-63.

Yao, JT 2004, 'E-commerce adoption of insurance companies in New Zealand', *Journal of Electronic Commerce Research*, vol. 5, no. 1, pp. 54-61.