

*Full Length Research Paper*

# The influence of privacy and security of internet technology on quality information exchange between businesses to business (B2B) in Malaysian Industry

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The growing importance of using internet technology has led companies to make their applications highly commercial and widely accepted for all sorts of customers and suppliers relations such as advertising, brand building and information sharing. Unfortunately, empirical studies on information quality delivery over the internet application particularly in the Malaysian manufacturing companies have been less than encouraging. This empirical research investigates the influence of security and privacy of internet technology on the quality information shared by the company to their suppliers. 650 questionnaires were distributed to different manufacturers in different regions of Malaysia, 184 were returned and only 151 were analyzed due to incomplete responses. This research found a significant relationship between perceived security and quality information exchange. Perceived privacy did not as a significant predictor. Further justification and discussion has been made at the end of chapters in order to clarify this finding. Hence, this article ends with suggestion for the industry, responsible parties that involved in promoting internet usage for quality information delivery among industries.

**Key words:** Privacy, security, internet technology, quality information exchange, Malaysian industry.

## INTRODUCTION

Global trade and partnership provide more opportunities for entrepreneurs economically and socially. Furthermore, this development has led a new growing market that has spurred the volume of consumption, imports and production. This phenomenon subsequently increases a demand for and use of information (AIMD, 2008; World Bank, 2004). It is a fact that information and communication technology (ICT) assists companies to communicate faster and cheaper, increase productivity and save cost (Economist Intelligence Unit, 2007). In addition, the Internet technology plays a significant role in providing various types of services and applications to the firms and users at the same time (Person, 2005: 418). The growing importance of using the Internet technology leads companies to make their applications highly commercial and widely accepted for all sorts of

customers and suppliers relations such as advertising, brand building and online buys and sells (Hyperdictionary, 2008). According to the Internet World States update (2009a), on 30 June, 2009, the total population of the world is 6,767.8 million but the Internet users are just 24.7% of the world population, which are 1,668.8 million. This means that a substantial number of the world population do not have access to the Internet (Kripanont, 2007). But in Malaysia, for example, the penetration rate is 59% more than the world penetration rate; therefore, Malaysia is ranked 34 in terms of the 'Internet penetration rate' in the world (Internet World Stats, 2009). This is because the Internet users in this country are 16.9 million of its total population of 28.3 million. There are many people in many countries, especially in developing countries that still have no chance to access the Internet. However, in Asia, Malaysia was ranked ninth of ten countries with the highest number of the Internet users (Internet World state, 2008). On the other hand, it still needs more times

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and efforts to reach the level of developed countries which have the highest Internet penetration such as Greenland (92.3%), Netherlands (90.1%), and Norway (87.7%) or to reach the level of countries that have the highest number of the Internet users such as China (18.7%), the United States (14.2%) and Japan (5.9%). It has been predicted that the Information Technology market in Malaysia increases from US\$ 1.2 billion in 2007 to US\$ 2 billion in 2012 with the annual growth rate of 11.1% (IDC, 2009). IDC also forecasted that the percentage of business services will grow between 17 to 18% in 2009, and Malaysian IT spending is estimated to grow in the percentage between 4 and 5% in 2009. Despite the increase of IT investment in Malaysia, Malaysian businesses have been relatively slow in the Internet applications adoption (Alam et al., 2007). Moreover, Tarofder et al. (2010) mentioned that the percentage of Malaysian firms that adopt information technology in their daily operation is low, which reflects the poor information exchange among these companies. The Internet has become as a gate way for organizations to re-evaluate their operations when they exchange and use information (Power et al., 2001). McCormack and Kasper (2002) highlighted that the Internet usage strongly extends outward suppliers to share forecasting planning and scheduling information. They added that the digital technology is used to obtain information about customers and suppliers, and to arrange special interaction data such as usage, forecasts, complaints or other order performance data. Due to the importance of the Internet usage among companies for information exchange, many factors might influence the intensive usage of the Internet by these companies for their smooth exchange of information. However, this empirical paper only focuses on perceived privacy and perceived security.

## LITERATURE REVIEW

### Quality of information exchange

The examination of information quality dimensions (accuracy, timelines, formatting) must reflect the exchange of information through the Internet (Feldmann and Mrller, 2003; Moberg et al., 2002). Feldmann and Mrller (2003) and Moberg et al. (2002) added that managers and members cannot use supply chain (SC) partner's information if they have difficulty in perceiving the level of information quality. According to Sahin and Robinson (2002), the degree of information sharing ranges from sharing the immediate replenishment order only to sharing all point of sales (POS), inventory and cost data. Because of this limitation, timing of information exchange plays an important role in quality of information delivery. Boyer and Olson (2002) find that accuracy of information is more important for accounting purposes. Sales bills must be prepared accurately and so is the

availability of supplies and materials online. Indeed, Boyer and Olson added that ever since traditional method of transaction had been replaced by online transaction; it is easier to use because of its accurate properties. The Internet-based platform in SC has given retail store managers and suppliers an opportunity to sharing information and knowledge. This practice has led to increased order accuracy and fewer out-of-stock situation (Boyer and Olson, 2002). Pramatarari (2006) pointed out that the integration between various systems levels strongly enhances information exchange within the industry. In SC more particularly it increases flexibility (volume and time) of the supplier, leads times and improves delivery accuracy. Indeed, increased forecast accuracy and delivery performance, reduced supply chain planning cycle time, synchronized inventory supply/demand schedules, automated inventory replenishment, elimination of unnecessary administrative burden and drive for continuous improvement with integrated intelligence have been important elements in supply inventory management (SIM) (Sahin and Robinson, 2002). Lin and Tseng (2006) argue that accurate and useful information will contribute to enhanced strategy making formulations.

Li et al. (2006) examined quality of information sharing in terms of accuracy, adequacy and credibility of information exchange toward competitive advantage. They measured competitive advantage on financial criteria, consisting of return on investment (ROI) and market share including growth of sale. They found that strategic supplier partnership, level of information sharing, and quality of information delivery are the strong indicators of supply chain management (SCM) practices, and lead to provide the organization competitive advantage on cost, quality, dependability, flexibility and time-to-market dimensions. Fawcett et al. (2007) found that willingness dimension of quality information has an impact on competitive performance such as sales growth, market share, and growth return, return on investment (ROI). Accuracy and flexibility of information are the important criteria of quality information delivery to respond to customer demands and supplier offers. Lin and Tseng (2006) state that in developing information system, it is important to consider high level of services, cost and quality. A review of work in the area of information quality in the context of SC information system indicates a substantial number of studies have examined its antecedents such as environmental uncertainty, intra-organizational facilities, and organizational relationships (Li and Lin, 2006), internal, intergenerational and economic factors (Madlberger, 2008), trust (McDowell and Karriker, 2008), intranet, organizational and individual characteristics (Masrek et al., 2007), individual, internal, external, and system factors (Wu et al., 2004), information system (IS) dimension (facilities, competency, structure, and integration) and user support (Mellarkod et al., 2007),

intra organizational and extra organizational factors (Igbaria et al., 1997), technological-level (infrastructure) and individual-level (reuse-related experience and self-efficacy) (Mellarkod et al., 2007). Despite the various antecedents examined, many calls have been made for further empirical research (Lee et al., 2002; Lenger and Schemm, 2008; Li and Lin, 2006; Mentzer et al., 2000; Moberg et al., 2002; Venkatesh et al., 2003) to investigate the antecedents of information quality delivery (IQD).

## THE INFLUENCE OF PERCEIVED SECURITY AND PRIVACY ON QUALITY INFORMATION DELIVERY

Security threat sometimes arises at the network level (the server), the user personal computer (the client) or during communication channel (Lallmahamood, 2007). The security of information requires prohibition of disclosure about any of important information and disallowing infringement to the information systems used during communication between supply chain management (SCM) partnerships. A substantial number of studies (Bhatnagar et al., 2000; Faisal et al., 2007; Goode and Harris, 2007; Laforet and Li, 2005; Li and Huang, 2009; Mohd.Yusoff et al., 2009; Salisbury et al., 2001; Shin et al., 2000; Vijayasathy and Jones, 2000; Yousafzai et al., 2003) have shown that perceived security is associated with the behavior of sharing information in business process. Warrington et al. (2000) categorized perceived security on the website into two dimensions namely decreased environment risk and raising the security. On the other hand, Knight (2003) proposes SC security of different elements: risk analysis, physical security, access control, personal security, education and training awareness, information security, training partner security and others. The different levels of security require different heights of collaboration and the sharing of data between the trading partners and that lead to different types of relationships between them (Martin et al., 1999). From the aforementioned discussion, it appears that perceived security has generally produced supportive evidence for quality information delivery. However, since most of these studies were conducted in the West, the applicability of the findings may be limited to different cultural contexts (Pikkarainen et al., 2004). As a newly industrialized economy, Malaysia still needs to work harder on ICT penetration rates, development of local content and security of infrastructure networks (Third Outline Perspective, 2006), particularly in the manufacturing and service sector in which supply linkages with large high-technology as well as more smart partnerships and strategic alliance are highly encouraged. For this reason, perceived security is included as a potential antecedent of information quality delivery in the manufacturing sector context. Therefore, it is hypothesized that:

**Ho<sub>1</sub>:** Perceived security is positively related to quality information delivery.

Perceived privacy has long been accepted as the right of individuals, groups or institutes and they decide for themselves when, how and to what kind of information they need to deal with during communication with others (Westin, 1967). Thus it is not surprising that many customers worry that companies will use their information for marketing and other secondary purposes without their permission (Painea et al., 2007; US Public Interest Research Group, 2000). According to Yousafzai et al. (2003), perceived privacy includes both reliability and credibility dimensions which are related to sharing of information among users of IT. During the communication on the website, many users handle a lot of information on certain procedures. Credibility and reliability therefore are important issues in these transactions (Choate, 2000). Demonstrating credibility is very clear in the relationship between a seller and a buyer, and whether the seller keeps his/her promise or not.

The level of honesty from the buyer to the seller will reduce or increase depending on the credibility of the seller (Yousafzai et al., 2003). But credibility will be ignored in business by sellers and buyers when they place products in the marketplace without established brand name (Warrington et al., 2000). Liu et al. (2002) state that privacy phenomenon appears strongly in B2B applications and it promotes customers' claims about the kind of information organizations want to disclose about. In order to protect the privacy of individuals, the responsibility falls on the organization that collects personal information and the organization that receives secondary data (Liu and Arnett, 2002). Because of the data transmission and emerging technologies, collecting personal information from customers and sharing it with other parties become easier and cheaper than before (Clay and Strauss, 2000). As a result, Liu et al. (2005) noted that such situation requires high coordination within the companies. Managerial and technical measures are very necessary to protect users of information from any misuse, loss, data safety and unauthorized access (Liu and Arnett, 2002). As a summary, perceived of privacy is very important in transaction between customers and supplier providers online and users' behavioral intention in e-commerce (Yousafzai et al., 2003). Therefore, perceived privacy is included as a potential antecedent of information quality delivery towards supply chain information performance, thus, it is hypothesized that:

**Ho<sub>2</sub>:** Perceived privacy is positively related to quality information delivery.

## METHODOLOGY

The companies included in the study came from a wide range of businesses including machinery and equipment, transportation

**Table 1.** Reliability coefficient for the variables in the study.

Variables	Number of items	Reliability
Perceived privacy	3	0.802
Perceived security	7	0.830

**Table 2.** Pearson correlations of study variables.

Variables	Mean	SD	1	2
Perceived privacy	9.13	2.229		
Perceived security	8.99	2.355	0.508**	
Quality information delivery	36.32	5.611	0.270**	0.270**

Note. \*\*Correlation is significant at the 0.01 level (2-tailed); \*Correlation is significant at the 0.05 level (2-tailed).

**Table 3.** Summary of multiple regression analyses for factors influencing quality information delivery (n = 151).

Variables	Standardized $\beta$	T	Sig.
Mean perceived privacy	-0.055	-0.677	0.499
Mean perceived security	0.188	2.462	0.015
R <sup>2</sup>			0.407
F values			13.947
Significant F values			0.000

equipment, radio television and communication equipment, and rubber and plastic products. All these companies were registered under the Federation of Malaysian Manufactures (2007). Other manufacturing activities include food product and beverage, electrical machinery basic metal and medical, precision and optical instrument, office, accounting and computing machinery, fabricated metal products and other non-metallic mineral products. Simple random sampling method was applied and 650 questionnaires were distributed to different manufacturers in different regions of Malaysia. Out of this number, 184 were returned, 2.8% of which were excluded because they were not included in the Federation Malaysian Manufactures (FMM). This reduced the number of usable questionnaires to 151, representing a response rate of 23.7%. The data were analyzed using multiple regression analysis to investigate the influence of privacy and security on information quality delivery among businesses. Other basic analysis such as factor analysis, reliability test and validity test also conducted to ensure the quality of the findings.

## THE FINDINGS

### Reliability test

Cronbach's alpha can be considered as perfectly adequate indication of the internal consistency, and thus of the reliability (Sekaran, 2000). It is the most widely used indicator. The generally agreed upon most acceptable value for Cronbach's alpha is 0.70, although it may decrease to 0.50 in exploratory research (Hair et al.,

2007). Table 1 summarizes the reliability test of the measures (after taking into consideration of deleted items). As shown, the Cronbach's alphas of the measures were comfortably above the minimum acceptable level of 0.70. For this reason, all measures were highly reliable and acceptable, thus, providing strong support for all variable components.

### Correlation analysis

Correlation analysis is used to describe the strength and direction of the linear relations between the variables (Pallant, 2001). The computation of Pearson correlation coefficients was performed to obtain an understanding the relationship between all variables in the study. The value of the correlation coefficient ( $r$ ) given in Table 2 indicates the strength relationship between variables. The overall correlation value of the variables is below 0.50, which indicates a weak association between selected variables.

### Multiple regression result

Table 3 provides evidence on the influence of antecedent factors on quality information delivery. It shows that the

relationship between the independent variables and the dependent variable is significant ( $F = 13.947$ ,  $\text{Sig} = 0.00$ ). In this research, the value of  $R^2$  is 0.407, which means that 40.7% of the variance in supply chain information performance is explained significantly by a number of independent variables which are perceived security and perceived privacy. The results show that perceived security has a significant influence on quality information delivery ( $p = 0.015$ ), however, there is a non-significant relationship between perceived privacy and quality information delivery ( $p = 0.499$ ).

## DISCUSSION

The study found that perceived of security is related to quality information delivery, which suggests that the more secured the online information exchange is, the better the information sharing performance would be. In general, online security during exchange of the information on the Internet is thus a critical issue. In fact, security online is defined as any factor that influences perceived risk of organizational and financial matters (Grewal and Dharwadkar, 2002). Therefore, this phenomenon leads many companies (such as amazon.com and ebay.com) to spend a lot of money and efforts in protecting their suppliers and customers information (Goode and Harris, 2007). So, it is possible to argue that the sample companies have high reputation in online context, whereas the online fraud and hackers in their websites are limited. This is consistent with Laforet and Li (2005) who found that hackers and fraud were the main barriers that prohibited online banking adoption in China. In Malaysia, the general regulation in online trading has improved, reflected in the increase of e-commerce transactions such as online banking, indicating that perceived security over online trading has been diminishing. This finding validates the works of earlier studies by Grewal and Dharwadkar (2002), Goode and Harris (2007) and Laforet and Li (2005) regarding the importance of perceived security as a key antecedent of the behavioral intention of using the Internet. They concluded that when perceived security is high, it accelerates exchange of information among the firms and improves the rate of online trading adoption.

On the other hand, technical support, usefulness and perceived privacy are found to have no significant effect on quality information delivery. This research found a non-significant relationship between perceived privacy and quality information delivery. In other words, perceived privacy is not related to behavioral intention to sharing quality information toward supply chain information performance in the context of the Internet technology. In this study, perceived privacy is defined as the right of individuals, groups or institutes and they decide for themselves when, how and to what kind of information they need to deal with during communication with others. Operationally, the respondents were asked to

rate their perceptions of protecting their online suppliers and customers information from any use and for any purpose without their permission. Based on the items asked, the respondents did not concern about their privacy online (credibility and reliability), because they had some information technology (IT) knowledge and so had already carried out the appropriate actions to protect their organizational information online (Paine et al., 2007). In addition, most companies in Malaysia have been using some kinds of software or programs that prohibit any abuse of sensitive data during the exchanging process among them. The reason for this procedure relates to the importance of this kind of information such as the information of consumers' concern at transaction or purchasing level. Moreover, the firms aim to protect the privacy of the sensitive data to enable effective decision making by supply chain partners, and to yield better forecasting outcome. Another possible explanation for this result might be that factors of speed and reliability of the Internet connections are not considered as important because they have become so common among the respondents. This finding is consistent with previous study by Pikkarainen et al. (2004), who found that the Internet factors such as privacy and security have relatively weak relations with online banking usage. Therefore, the perceived privacy is not one of the predicted factors for quality information delivery and this is fully supported by past research.

This research has also confirmed the research work done by Wahab et al. (2009) who found that privacy concern has a non-significant influence on transaction intention to reflect online users' information privacy concern in the mobile service context. However, these research findings contradict past research which found that concerns for perceived security and privacy was positively influence intention to use SMS banking (Wahab et al., 2009; Jahangir and Begum, 2008). Furthermore, another study by Wang et al. (2003) found that perceived credibility that reflects security and privacy concerns had a significant positive effect on behavioral intention in the of electronic banking. The findings of the study have shown that perceived security is related to QID. Therefore it is recommended to extend the framework to a more distinguished study such as reinventing, cultures and other characteristic, which can influence QID, perceived trust and SCMI. Replication of the study is strongly recommended, the replication carries the ability to strengthen and then to generalize the findings of the study.

## REFERENCES

- AIMD (2008). Introduction - Why Malaysia: Economic strength. Retrieved December, 10, 2007, from: <http://www.mida.gov.my/>.
- Alam SS, Khatibi A, Ahmad MIS, Ismail HB (2007). Factors affecting e-commerce adoption in the electronic manufacturing companies in Malaysia. *Int. J. Commer. Manag.*, 17(1/2): 125-139.
- Bhatnagar A, Misra S, Rao HR (2000). On risk, convenience and

- internet shopping behavior, association for computing machinery. *Communications of the ACM*, 43(11): 98-105.
- Boyer KK, Olson JR (2002). Drivers of Internet purchasing success. *Production and operation Management Society*, 11(4): 480-498.
- Choate T (2000). 5 Keys to customer conversion. *Catalog Age*, I. Merchant, August, 14-15.
- Clay K, Strauss R (2000). Trust, risk and electronic commerce: nineteenth century lessons for 21st century. Paper presented at the 93rd Annual Conference on Taxation, National Tax Association, Session on Taxation and E-Commerce, 9 November.
- Economist Intelligence Unit (2007). Overview of e-commerce in Malaysia. Retrieved September 17, 2009, from: [http://graphics.eiu.com/ebf/PDFs/E\\_readiness\\_rankings\\_April%202007\\_FINAL.pdf](http://graphics.eiu.com/ebf/PDFs/E_readiness_rankings_April%202007_FINAL.pdf)
- Faisal MN, Banwet DK, Shankar R (2007). Information risks management in supply chains: An assessment and mitigation framework. *J. Enterp. Inf. Manag.*, 20(6): 667-699.
- Fawcett SE, Osterhaus P, Magnan GM, Brau JC, McCarter MW (2007). Information sharing and supply chain performance: The role of connectivity and willingness. *Supply Chain Management: An Int. J.*, 12(15): 358-468.
- Feldmann M, Miller S (2003). An incentive scheme for true information providing in supply chains. *OMEGA*, 31(2): 63-73.
- Goode MMH, Harris LC (2007). Online behavioral intentions: An empirical investigation of antecedents and moderators. *Eur. J. Mark.*, 41(5/6): 512-536.
- Grewal R, Dharwadkar R (2002). The role of the institutional environment in marketing channels. *J. Mark.*, 66(3): 82-98.
- Hair JF, Jr Money AH, Samouel P, Page M (2007). *Research method in business*. London: John Wiley & Sons Ltd.
- Hyper Dictionary. (2008). Internet definition. Retrieved September 8, 2009, from: <http://www.hyperdictionary.com/dictionary/Internet>
- IDC (2009). Malaysia services market. Retrieved March 30, 2009, from: <http://www.idc.com.my/PressFiles/IDC%20Malaysia%20-%20Malaysian%20Services%20Market%202009.asp>
- Igbaria M, Zinatelli N, Cragg P, Cavaye ALM (1997). Personal computing acceptance factors in small firms: A structural equation model. *MIS Q.*, 21(3): 279-305.
- Internet World States (2009). Internet usage in Asia. Retrieved April 18, 2010, from: <http://www.internetworldstats.com/stats3.htm>
- Internet World States update (2009a). Retrieved 30 June, 2009, from: <http://www.internetworldstats.com/stats3.htm>
- Jahangir N, Begum N (2008). The role of perceived usefulness, perceived ease of use, security and privacy, and customer attitude to engender customer adaptation in the context of electronic banking. *Afr. J. Bus. Manag.*, 2(1): 32-40.
- Knight P (2003). Supply chain security guidelines. IBM, White paper.
- Kripanont N (2007). Examining a Technology acceptance model of internet usage by academics within Thai business schools. Unpublished PhD thesis, Victoria University, Melbourne, Australia.
- Laforet S, Li X (2005). Consumers' attitudes towards online and mobile banking in China. *Int. J. Bank Mark.*, 23(5): 362-380.
- Lallmahamood M (2007). An examination of individual's perceived security and privacy of the internet in Malaysia and the influence of this on their intention to use e-commerce: Using an extension of the technology acceptance model. *J. Internet Bank. Commer.*, 12(3): 1-26.
- Lee YW, Strong DM, Kahn BK, Wang RY (2002). AIMQ: A methodology for information quality assessment. *Information Management and Computer Security*, 40: 133-146.
- Legner C, Schemm J (2008). Toward the inter-organizational product information supply chain: Evidence from the retail and consumer goods industries. *J. Associat. Inf. Syst.*, 9(3/4): 119-150.
- Li S, Lin B (2006). Accessing information sharing and information quality in supply chain management. *Decision Support Systems*, 42(3): 1641-1656.
- Li S, Ragu-Nathan B, Ragu-Nathan TS, Rao SS (2006). The impact of supply chain management practices on competitive advantage and organizational performance. *Omega*, 34: 107-124.
- Li YH, Huang JW (2009). Applying theory of perceived risk and technology acceptance model in the online shopping channel. *World Academy of Science, Engineering and Technology*, 52: 919-925.
- Lin C, Tseng H (2006). Identifying the pivotal role of participation strategies and information technology application for supply chain excellence. *Indust. Manag., Data Syst.*, 106(5): 739-756.
- Liu C, Arnett KP (2002). Raising a red flag on global WWW privacy policies. *J. Comput. Inf. Syst.*, 43(1): 117-127.
- Liu C, Marchewka JT, Lu J, Yu CS (2005). Beyond concern: A privacy-trust-behavioral intention model of electronic commerce. *Inf. Manag.*, 1(42): 289-403.
- Madlberger M (2008). Interorganizational collaboration in supply chain management: What drives firms to share information with their trading partners? Paper presented at the 41st Hawaii international conference on system sciences.
- Martin EW, Brown CV, DeHayes DW, Hoffer JA, Perkins WC (1999). *Managing information technology*. Upper Saddle River, New Jersey: Prentice Hall.
- Masrek MN, Abdul Karim NS, Hussein R (2007). Antecedents and impact of intranet utilization: A conceptual framework. *J. Inf. Technol., Impact*, 7(3): 213-226.
- McCormack K, Kasper K (2002). The extended supply chain. *Benchmarking: Int. J.*, 9(2): 133-145.
- McDowell WC, Karriker JH (2008). Mediating effects of information quality on trust and performance in interorganizational relationships Paper presented at the southeast decision sciences institute conference, Orlando, Florida.
- Mellarkod V, Appan R, Jones DR, Sherif K (2007). A multi-level analysis of factors affecting software developers' intention to reuse software assets: An empirical investigation. *Business Process Manag. J. Appl. Attendance*, 13(5): 613-627.
- Mentzer JT, Min S, Zacharia ZG (2000). The nature of interfirm partnering in supply chain management. *J. Retailing*, 76(4): 549-568.
- Moberg CR, Cutler BD, Gross A, Speh TW (2002). Identifying antecedents of information exchange within supply chains. *Int. J. Phys. Distrib. Logist. Manag.*, 32(9): 755-770.
- Mohd YY, Muhammad Z, Zahari MSM, Pasah ES, Robert E (2009). Individual differences, perceived ease of use, and perceived usefulness in the e-library usage. *Comput. Inf. Sci.*, 2(1): 76-81.
- Painea C, Reipsb UD, Stiegerc S, Joinsona A, Buchanan T (2007). Internet users' perceptions of 'privacy concerns' and 'privacy actions'. *Int. J. Human-Comput. Stud.*, 65: 526-536.
- Pallant J (2001). *SPSS survival manual: Step by step guide to data analysis using SPSS*. Maryborough, Victoria: McPherson Printing Group.
- Pikkarainen T, Pikkarainen K, Karjaloto H, Pahlila S (2004). Consumer acceptance of online banking an extension of the technology acceptance model. *Internet Res.*, 14(3), 224-238.
- Power DJ, Sohal AS, Rahman SU (2001). Critical success factors in agile supply chain management: An empirical study. *Int. J. Phys. Distribution Logist. Manag.*, 31(4), 247-265.
- Pramatari KC (2006). Efficient store replenishment through Internet-based information sharing and collaborative supply-chain practices. Unpublished Ph.D thesis, Athens University of Economics and Business.
- Sahin F, Robinson EP (2002). Flow coordination and information sharing in supply chain: Review, implications, and directions for future research. *Decision Sci.*, 33(4): 505-536.
- Salisbury WD, Pearson RA, Pearson AW, Miller DW (2001). Perceived security and world wide web purchase intention. *Indust. Manag. Data Syst.*, 101(4): 165-176.
- Sekaran U (2000). *Research methods for business: A skill building approach* (3rd ed.). New York: John Wiley and Sons Inc.
- Shin H, Collier DA, Wilson DD (2000). Supply chain orientation and supplier/buyer performance. *J. Operat. Manag.*, 18(3): 317-333.
- Tarofder AK, Marthandan G, Haque A (2010). Critical factors for diffusion of web technologies for supply chain management functions: Malaysian perspective. *Eur. J. Soc. Sci.*, 12(3): 490-505.
- US Public Interest Research Group (2000). Public comment on barriers to electronic commerce: Response to call by U.S., (65 Federal Register 15898), Department of Commerce.
- Venkatesh V, Davis FD (2000). A theoretical extension of the technology acceptance model: four longitudinal field studies. *Manag. Sci.*, 46(2): 186-204.
- Wahab S, Al-Momani K, Noor NAM (2009). The antecedent of customer

- relationship management performance: an empirical investigation in Jordan mobile phone services, *Int. J. Bus. Edu.*, 1(2): 129-144.
- Wahab S, Noor NAM (2009). Technology Trust and e-Banking Adoption: The Mediating Effect of Customer Relationship Management Performance. *As. J. Technol. Manag.*, 2(1): 1-15.
- Wang YS, Wang YM, Lin HH, Tang TI (2003). Determinants of user acceptance of internet banking: An empirical study. *Int. J. Service Indust. Manag.*, 14(5): 501-519.
- Warrington TB, Abgrab NJ, Caldwell HM (2000). Building trust to develop competitive advantage in e- business relationship. *Competitiveness Rev.*, 10(2): 160-168.
- Westin A (1976). *Privacy and Freedom*. New York: Atheneum.
- World Bank (2004). *Malaysia: Brief country report*. Retrieved on November 4, 2008, from: <http://siteresources.worldbank.org/Malaysia/Resources/Malaysia+April04.pdf>
- Wu WY, Chiag CY, Wu YF, Tu HF (2004). The influencing factors of commitment and business integration on supply chain management. *Indust. Manag., Data Syst.*, 104(4): 322-333.
- Yousafazi SJ, Pllister JG, Foxall GR (2003). A proposal model of e-trust for electronic banking. *Technovation*, 23: 847-860.