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PERCEPTION AND ATTITUDE TOWARDS E-COMMERCE: A CASE OF POSTGRADUATE STUDENTS IN UUM (KOD S/O 11378)

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Abstrak

E-dagang didefinasikan sebagai aktiviti-aktiviti perniagaan yang dijalankan dengan menggunakan teknologi penghantaran data secara elektronik. Ianya merangkumi semua bentuk transaksi perniagaan di mana pihak-pihak yang terlibat berinteraksi secara elektronik dan bukannya melalui pertukaran atau hubungan fizikal secara langsung. Walaupun telah beberapa tahun Internet dikomersilkan, pengguna di Malaysia masih menggunakannya bagi tujuan komunikasi dan hiburan dan bukannya medium untuk interaksi perniagaan. Justeru, perkembangan aktiviti e-dagang telah mewujudkan keperluan untuk memahami bagaimana dan mengapa individu melibatkan diri dalam aktiviti e-dagang. Kajian ini dijalankan untuk menganalisa persepsi dan sikap terhadap e-dagang di kalangan pelajar ijazah lanjutan, berdasarkan faktor-faktor organisasi, persekitaran dan juga faktor peribadi. Hasil kajian menunjukkan pelajar-pelajar ijazah lanjutan mempunyai persepsi yang positif terhadap perkembangan e-dagang, dengan skor keseluruhan mean sebanyak 82.6 (minimum=17, maksimum= 109). Mereka juga bersikap positif dan menyokong usaha-usaha e-dagang (mean= 16.66, minimum=3, maksimum=21). Walaubagaimanapun, masih banyak ruang yang perlu diperbaiki terutamanya berkaitan penyebaran maklumat berkaitan e-dagang, meningkatkan kefahaman dan pengetahuan e-dagang dan teknologi maklumat, mengukuhkan pelaksanaan undang-undang siber serta menggalakkan komitmen yang lebih tinggi di kalangan organisasi dalam menyokong pembangunan e-dagang.

Abstract

E-commerce is defined as business activities conducted using electronic data transmission technology. It includes any form of business transactions in which the parties interact electronically rather than by physical exchanges or direct physical contact. Even though it has been a few years since the commercialization of the Internet, Malaysians still mainly regard it as a means of communication and entertainment and not yet as a medium for business interactions. Thus, the proliferation of e-commerce activities has created a need to understand how and why people participate in e-commerce. This research is designed to analyze perception and attitude towards e-commerce among postgraduate students, based on organizational, environmental and personal factors. The results of this study revealed that the postgraduate students perceived e-commerce positively with the overall mean score of 82.6 (min=17, max= 109). They also possessed positive attitude towards e-commerce and are supportive of the e-commerce development (mean= 16.66, min=3, max=21). However, there is still room for improvement particularly in disseminating e-commerce information, enhancing information technology and e-commerce understanding among the people, strengthening cyber regulations as well as encouraging superior organizational commitment to support e-commerce development.

1.0 INTRODUCTION

The world is now in the moves of Internet based economic structures and information societies, which comprise networks of individuals, firms, and countries linked electronically in interdependent and interactive relationships (Arunachalam, 1999; E-commerce and Development Report, 2001). The wide uses of Information and Communication Technologies (ICTs) have revolutionized business, economic prosperity, and the communication patterns around the world (Bedi, 1999, Cattani, 2000, Pohjola, 2001). It has also accelerated the growth of e-commerce in many parts of the world.

E-commerce is the current trend in doing trade worldwide estimated to be worth US$20 billion a year and is projected to grow between two hundred to four hundred per cent annually (Ghazie, 2003). It promises to be the momentum behind a new wave of electronic growth and able to improve business values by fundamentally changing the way products are conceived, marketed, delivered, and supported (Sharma and Gupta, 2003).

In conjunction to that, Malaysian government has invested $10 billion in two high-tech parks, which are Cyberjaya and Putrajaya, as part of its Multimedia Super Corridor (MSC) project to attract international business (Collett, 2003). E-commerce is necessary as the nation's competitiveness depends on companies' competitiveness. Thus, Malaysian companies must incorporate electronic commerce in their daily business operations as soon as possible or risk being left out in an increasingly competitive business environment. E-commerce activities are also expected to expand as more Malaysian companies look to the Internet as a platform to change the way they do business globally.

This study replicates research done by Stynlianou, Robbins and Jackson (2003), which studied the perception and attitude towards e-commerce development in China. According to their research, people's viewpoint towards e-commerce is influenced by several elements namely environmental, organizational, and personal factors.

Environmental factors include the existence of government laws or regulations as well as improvements of infrastructure that facilitates implementation of e-commerce. On the other hand, organizational factors focus on management's role in pursuing the use of e-commerce to support organization's functions. Meanwhile, personal factors consist of one's knowledge and understanding in information technology (IT) and e-commerce domains.

This research is designed to analyze postgraduate students' perception and attitude regarding e-commerce development in Malaysia. Their viewpoint which is based on variety of factors will provide some insight into the future of e-commerce in Malaysia within the framework of organizational commitment to e-commerce driven innovation.

Objectives of the Study

The purposes of this study are:

- To analyze descriptively the content of factors that are believed influence the viewpoint of postgraduate students towards e-commerce.
- To determine level of perception of postgraduate students towards e-commerce.
- To determine level of attitude of postgraduate students towards e-commerce.

Significance of the Study

Based on the report in MSC Updates (2003), the introduction of MSC has created a number of 17,369 knowledge workers in this country compared to only 1,946 in the year 1997. Majority of them are Malaysian graduates and from different occupational background such as computer sciences, information technology, finance, accounting, management and information system. They will become future leaders and the proliferation of e-commerce activities has created a need to understand how and why people participate in e-commerce (Klopping and McKinney, 2004).

Most study on perception towards e-commerce in Malaysia has been focusing on the Small Medium Enterprises (SMEs) or companies. Thus, this study may contribute in assessing the perception of an individual, who are actually responsible in establishing and managing an organization to coordinate their activities.

Since the Internet provides huge opportunity for e-commerce growth in Malaysia and the government has spent (and will spent) enormous amount of money in providing e-commerce facilities, there is a need to assess the perception of postgraduate students with regards to the development of e-commerce in this country. They are not only seen as the potential users of e-commerce, but with sufficient knowledge and qualification, they also represent future corporate leaders who will determine the future of e-commerce in Malaysia.

Thus, findings of the study will provide better understanding of the current postgraduates' perception towards e-commerce development in Malaysia. As a result, the information gathered will provide insight view for the policy maker to formulate strategies in enhancing e-commerce acceptance among society. It is also hoped that the results of this study will give information on future prospect of e-commerce development in Malaysia based on the attitude towards it.

2.0 LITERATURE REVIEW

2.1 Internet technology in Malaysia

Internet is the world's largest interconnected environment. It is the most recent communication tool of the world in the global village (Rahmah and Arfah, 1999). In 1995, some 30 million computers were linked throughout 90 countries in the world including Malaysia (Shamsul, 1995). In Malaysia, it all began in 1990 when the Malaysian Institute of Microelectronic Systems (MIMOS Berhad) launched Joint Advanced Integrated Networking (JARING) as a main Internet Service Provider (ISP), to promote information exchange and database development through access to the Internet. With the installation of a satellite link between Malaysia and the United States of

America in 1992, JARING was connected to the Internet, henceforth providing Malaysian users with accessibility to the Internet in more than 140 countries (Seventh Malaysia Plan, 1996). Since that, the use of Internet has been widespread, not only as a source of information, but also as a communication medium that connects people all over the world.

National Information and Communication Technology Policy Planning and Strategic Intervention in Malaysia (2004) stated that information and communication technology (ICT) is seen as a key driver of future growth in all phases of work and life. It represents a new sector of growth to achieve development goals and value creation and also acts as a strategic enabler in moving Malaysia towards Knowledge Society and Knowledge Economy.

Sankaran (1999) suggested that there are several factors that lead to the rapid spread of Internet communication technologies in Malaysia. First, it is the result of the progress towards privatization that has occurred in Malaysia since the early eighties. Yet, a more vital factor is due to government's commitment in providing high technology infrastructure for the business community such as the Multimedia Super Corridor (MSC) and the Cyber City projects.

In MSC Impact Survey (2003), it is reported that there is a high percentage of knowledge workers created after the establishment of MSC, taking up 86% of the working population in 2002 as well as 2003 and expected to increase continuously. Out of this number, majority of them are Malaysians who represent 82.2% of the total population of knowledge workers in the MSC. The majority of knowledge workers are made up of software developers and programmers, followed by technical support staff. Managers in Sales, Finance, Marketing and Management Information System come in third in the occupational grouping breakdown. This shows that Malaysia is able to provide the required number of knowledge workers needed for the industry provided that there are enough opportunity, exposure and resources allocation given to the society.

Besides of the initiation of the MSC projects in Cyberjaya, efforts have been taken to ensure Malaysians are technology-literate. The establishment of smart schools, e-training site, e-services infrastructure companies, implementation of the National Internet Literacy Campaign in 2000, PC-Ownership Campaign and provision of E-Commerce Grant that aimed to assist small and medium enterprises to start their e-commerce initiatives are among of the strategies employed by the government in building a knowledge-based nation (Paynter and Lim, 2001).

2.2 E-commerce

Until recently, the primary uses of the Internet have been for communication, information exchange, and entertainment. However, electronic commerce is becoming an increasingly large component of Internet use and growth (Campbell, Richard, Sherman, Kraan and Birchmeier, 2001). Schneider (2003) defined electronic commerce or e-commerce as business activities conducted using electronic data transmission technology. It includes any form of business transactions in which the parties interact electronically rather than by physical exchanges or direct physical contact. In a similar way, Kalakota and Whinston (1997) defined e-commerce as the buying and selling information, products and services via computer networks.

These types of business transactions are usually separated into several categories, such as business-to-business transactions and business-to-consumer transactions. The business-to-consumer category primarily relates to electronic retailing, which has expanded significantly with the introduction of the Internet. There are well over 70 million websites offering all sorts of services and products, ranging from books, music and household appliances. With the changing in global marketplace, businesses rely more and more on changing technology. The companies, services and industries that fuel economic growth are also evolving (Gabbin, 2002).

According to International Data Corporation (IDC), e-commerce consumer's spending will grow from US Dollar 118 billion worldwide in 2001 to US Dollar 707 billion in 2005. E-commerce offers many opportunities to businesses and corresponding benefits to

consumers. Some of the opportunities include worldwide access and greater choice, enhanced competitiveness and quality of service, mass customization and personalized products and services, elimination of intermediaries and product availability, greater efficiency and lower costs which also brings new business opportunities and new products and services (Alboukrek, 2003).

There are two human-related aspects that are vital for the successful implementation of e-commerce in Malaysia as stated in the National ICT Plan 2004. First is the technology know-how human capital, which is the driving force behind technology innovations. Second is the entrepreneurial skill among e-commerce players which is also important in turning innovations into world beating products and to capture global market. In addition, there are four critical components of e-commerce in Malaysia as outlined by MIMOS, which include security, payment, public acceptance and legal aspect.

Based on MSC Impact Survey (2003), there is a positive indication that the initiatives taken by the MSC to enhance e-commerce development especially in the MSC Valley are achieving their objectives. Key performance indicators in relation to jobs created, company performance, export sales, research and development and technology exhibit an upward trend towards further progress. The result also showed that companies are upbeat about their development and their future prospects.

As suggested by Paynter and Lim (2001), the development of e-commerce technology in Malaysia is fully supported by the government via implementation of multiple strategies to promote IT industry and to provide favorable environment for the acceleration of the country's e-commerce competitiveness. It includes steps of providing basic infrastructures as well as lying down some regulatory, physical, technical and institutional preconditions to facilitate smoother electronic communications and transactions. However, they argued that though it has been a few years since the commercialization of the Internet, Malaysians still mainly regard it as a means of communication and entertainment and not yet as a medium for business interactions. It is also stated that committing a transaction online in Malaysia is not as popular as in

western countries. Even though Malaysians are very curious about this new market, they are delaying to involve in e-commerce activities due to several factors such as lack of product awareness, lack of value awareness, attitude of consumers and organizations, low level of Internet knowledge as well as concern over security of transactions.

In order to assess public awareness, attitude, interest and understanding towards policies and issues of science and technology, Malaysian Science & Technology Information Centre (MASTIC) has conducted a Science & Technology Awareness Study in 2002. The result indicated that even though perceived public knowledge have increased compared to the previous years, the level was still only between moderately and slightly knowledgeable. However, in terms of attitude, the overall findings of the study showed that 56.8% of the respondents acknowledged the positive contribution of technology to the society (Public Awareness of Science and Technology Report, 2002).

Ali, Thyagarajan and Seetharaman (2003) examined the perceived benefits and barriers to e-commerce adoption that caused Malaysian e-commerce industry has not taken off as expected. They found that respondents perceived e-commerce positively in terms of increases competitiveness, creates better image and results in more efficient processes. Despite of its' benefits, e-commerce adoption is hindered by several barriers including lack of trained personnel, lack of technological knowledge and uncertainties of its operations and regulations. These barriers are closely related with the absent of solid understanding of e-commerce concept itself.

As cited by Rahmah and Arfah (1999), Yee (1998) studied the potential of e-commerce among teaching staff and students of a university in Sarawak. The study found that users were not convinced with the method and security of payment through the Internet. This led to their skepticism of e-commerce. In addition, study by Tang (1998) also found e-commerce to be a very convenient way to do business however, many users are doubtful about the security of transactions.

As security has proven to be one of the major concerns in using e-commerce for users (Norhayati, 2000), numerous legislations have been enacted in 1997 to 1998 in attempt to provide a secure network business environment for consumers. It includes Computer Crime Act 1997, Digital Signature Act 1997, Copyright (Amendment) Act 1997, Multimedia Commissions Act 1998 and Multimedia and Communications Act 1998. Yet, these laws are not sufficiently broad enough to control various types of cyber crime activities (Roos, 2005).

Furthermore, with the purposes of strengthening security element in virtual environment for e-business in Malaysia, considerable efforts and several projects have been initiated. For instance, in 1999 MIMOS Berhad has introduced a locally developed Internet security system known as Information or Internet Virtual Environment for Secure Transaction (iVEST) (http://www.ivest.com.my/ivest.html). This system allows users to create digital signatures, and produces extremely reliable user identification on an open system such as the Internet. All communications utilizing iVEST technology are also encrypted with a locally developed cryptography that prevents security breach on the Internet. It comprises of client and server kit that integrate encryption, smart card technology and digital signature into a single product. This system also supports user with Legal Protection for Digital Signature, where provisions under the Malaysian Digital Signature Act 1997 and the Digital Signature Regulation 1998 enable the digital signature to be admitted as evidence in court.

In addition, Digicert Sdn Bhd, the first certification authority in Malaysia is licensed to issue digital signature and digital certificate for consumers that trade through the Internet, in providing a safe environment for business to-business transactions. Then, in September 2000, MEPS Secure Electronic Transaction Payment Gateway, which uses secure electronic transaction (SET) protocol is jointly developed by Visa International, MasterCard and other industry professionals to provide an open, multi-party payment mechanism for conducting secure bank or credit card payments over open networks (Paynter and Lim, 2001).

Until now, continuous efforts and plans are taken to resolve issues raised by the users in order to strengthen the implementation of e-commerce in Malaysia. This is in line with the government beliefs that society's involvement in this field is important as they must be knowledgeable and capable enough to utilize the technology effectively.

Bharadwaj, Sambamurthy and Zmud (1999) developed a research framework that conceptualized group of factors that govern a firm's IT capability like business IT strategic thinking, IT business process integration, IT management and IT infrastructure. The researchers claimed that a firm's ability to sustain IT innovation and respond to market conditions is reflected by organizational and technological capabilities of the firm.

Van Slyke (2005) used a diffusion of innovation framework to compare consumers' perceptions and attitudes toward electronic commerce in developed and developing countries. The study was made based on the fact that developing countries face a number of obstacles that may impact their view of e-commerce, such as less reliable telecommunication infrastructures, less access to online payment mechanisms and lack of consumer rights protection in the e-environment. The findings indicated that consumers perceived differently the relative advantage, ease of use, compatibility and result demonstrability of e-commerce. Thus, he suggested that it is important to consider the influence of local conditions on the adoption and assimilation of new technologies.

In a prior research by Sagi, Carayannis, Dasgupta and Thomas (2004), it is noted that the success of e-commerce is shaped by several variables such as national economy, national literacy, telecommunications availability as well as Internet penetration and acceptance.

Haslinda, Noor Afza and Kamil (2003) found that among of the factors that discourage the implementation of e-commerce in business operations are employees' attitude, lack of training, lack of knowledge, lack of facilities and security concern.

Whether e-commerce has the potential to replace traditional commerce depends largely on customers and traders. As the growth of the Internet in Malaysia continues, it is expected that peoples' perception will begin to change and fears will begin to reside as they gain understanding of the technology and how to use it (Paynter and Lim, 2001).

The most important, is the awareness and motivation among them to utilize the technology and effectively grab the benefits offered by e-commerce to improve the users' performance as well as the businesses' operation.

2.3 Definition of Perception and Attitude

From psychology and cognitive sciences perspective, perception is the process of acquiring, interpreting, selecting, and organizing sensory information. It begins with the stimulation of sensory neurons and each sense involves highly evolved cells which are sensitive to a particular stimulus (Boeree, 2002). It is also a process of organizing information received through the senses and interpreting it, done by a conscious and mentally aware brain. In other words, perception is the process of perceiving and becoming aware of something via the senses.

As cited by Oskamp (1991), social perception has a number of important characteristics (Schneider, Hastorf and Ellsworth, 1979) like immediate perception, selective perception, structured perception, stable perception and meaningful perception. Immediate perception is when we immediately aware of something we see in front of us such as existence of our friend when we entered his room. Selective perception is when our attention focuses on only a few objects out of the multitude that are within our sensory range. For instance we may notice our friend but ignore the walls, flowers, telephone and other objects in the room. Structured perception is when we organize complex stimulation into a pattern of shapes, colors and sizes even though our eyes merely receive light waves of various frequencies and degrees of brightness like hair, face, or clothes are integrated into a structured whole when we perceive a person. Stable perception is an experience of constancies in perception. The apparent shape, color, and size of objects remain constant even though we view them from different distances and angles and in different amount of light. For example if we see our friend from a distance and then we move closer to him, we will not perceive him as growing taller or wider. Meaningful perception is when we have already imparted meaning to the sensory experience in interpreting a pattern of stimuli as a person and it does not stop there. We immediately integrate aspects of their