

CHAPTER 2: LITERATURE REVIEW

2.1 OVERVIEW

This chapter summarizes the literature reviews concerning the e-commerce adoption among SMEs. Models and frameworks that used by previous studies on this topic are also presented.

2.1.1 E-commerce Studies

There have been a myriad of research studies concerning e-commerce adoption among SMEs, since the commercialization of e-commerce in mid 1990s. Those studies have examined e-commerce adoption issues from various aspects.

There were studies that were conducted in the context of developed countries (Lee and Runge, 2001; Grandon and Pearson, 2004; Chong, 2004) and also developing countries (Looi 2005; Lertwongsatien et al. 2004; Kendall et al. 2001).

Past researches have shown that there are several approaches in examining e-commerce adoption. One approach is descriptive in nature which simply identifies the list of motivating factors and barriers that affect e-commerce adoption (e.g. Lawson et al 2003). Another approach assesses the strength of

the influence of each factor in the adoption decision (e.g. Jeon et al., 2006; Kartiwi and Macgregor, 2007). However, the findings of these studies have often been fragmented and contradictory. Furthermore, different factors were found to affect adoption in different countries (Kartiwi and Mcgregor, 2007).

According to Hussin et al. (2008), past researchers generally agreed on the view that SMEs have been slow in adopting e-commerce despite the potential benefits that SMEs can gain. This is particularly more obvious as far as developing countries are concerned (Hussin and Al-Musowi, 2006; Sam and Leng, 2006; Sulaiman, 2000). Regrettably, such adoption is only limited to the basic e-commerce applications such as the use of email services and websites.

Raymond et al. (2005) explained that this may relate to the specificity of SMEs, as compared to larger organizations, in terms of their environment, structure, strategy and decision process, and psychological context such as the dominant role of the owner-manager.

A review of relevant literature has highlighted the importance of further research into the factors which trigger or influence the decision to implement e-commerce in SMEs.

There have already been several studies conducted to investigate e-commerce among SMEs in Malaysia. However the studies used different models or slight

variations of them. For example, Tan and Eze (2008) conducted an empirical study of Internet-Based ICT adoption among Malaysian SMEs using the Diffusion of Innovation (DOI) theory. Hussin et al (2008) adopted a similar version of the research instrument used in the study conducted by Kendall et al. (2001) to investigate e-commerce adoption decision and perceived attributes among Malaysian SMEs.

2.1.2 Technology Adoption

Most of previous studies on e-commerce adoption have utilised the innovation adoption model, which is derived from Rogers' Innovation Diffusion Theory. According to Rogers (1983), the adoption decision process begins with the knowledge of the existence of the innovation and matures with observing persuasion, decision and implementation stage. Rogers' research focuses on the innovation characteristics that influence and persuade adopters, especially in the early stage of adoption.

Rogers' theory of innovation diffusion has been utilised to study different technology adoptions. The model has been frequently used in past studies to investigate SME e-commerce adoption factors in many countries around the world, for example in Limthongchai and Speece (2002), Tan and Teo (2000), Kendall et al. (2001), Sathye and Diana (2001), among others.

However, the aforementioned studies placed much emphasise on the innovation characteristics, and therefore focused more on the technological context. Although slight variations were made on the original model, the utilised frameworks generally still failed to investigate e-commerce adoption from other perspectives, such as the organisation's organisational context and environmental context.

Another recent study implemented by Kshetri (2007) analyzed ecommerce barriers in terms of three categories: economic, socio-political and cognitive. Whereas economic and socio-political factors focus mainly on the environmental characteristics, the cognitive component reveals organizational and individual behaviours such as the preference of Asian people to communicate face-to-face over e-mails (Kshetri, 2007).

Another framework that has been used more successfully is the Tornatzky and Fleischer's (1990) model, which has been applied in several SME studies (see, for example, Chan and Hui, 2001, Gengatharen and Standing, 2004, Scupola, 2003, Scupola, 2004).

The model classifies SME e-commerce adoption factors into three contexts, which influence the adoption of innovations in organisations: (1) organisational; (2) environmental; and (3) technological contexts.

The organisational context refers to the factors within the organisation, such as the size of the firm and internal processes. The environmental context refers to the organisation's business environment, such as competitors, legal issues and customers. Finally, the technological context refers to the technologies relevant to the firm, that is, the technology in question, on which the adoption decision is based. Investigating the factors from three different contexts, namely organisational, environmental and technological, provides a more holistic approach to the study of e-commerce adoption.

2.2 PERCEIVED ATTRIBUTES OF E-COMMERCE

2.2.1 Technological Context

This study first investigates the factors of e-commerce adoption from the technological context, similar to most past studies. The three factors which are categorized within technological context are: Perceived relative advantage, perceived compatibility and perceived complexity.

Factor 1: Perceived Relative Advantage

Perceived relative advantage (or perceived benefits) is the belief that certain benefits will be obtained by performing the behaviour. Perceived relative advantage is one of the most frequently used characteristics in e-commerce

adoption studies (e.g. Jeo et al. 2006, Seyal et al. 2004). Most past studies have illustrated that perceived relative advantage is an important determinant of technology adoption (e.g Al-Qirim, 2007; Sparling et al., 2007; Kaynak ete al., 2005).

In contrast, Tsao et al. (2004) have discovered that perceived relative advantage was actually not a significant contributor to e-commerce adoption. This may be due to the fact that the managers in developing countries are not sure about the e-commerce benefits, and lack adequate skills or knowledge about what it can provide (Alzougool and Kurnia, 2008).

Factor 2: Perceived Compatibility

Compatibility reflects the extent to which a technological innovation is compatible with the way organisation works, in terms of its values and beliefs, previously introduced ideas, and needs (Rogers 1995). Many previous researches discovered that the compatibility perception construct is significant in the adoption of information technologies (e.g Beatty et al., 2001; Teo and Ranganathan, 2004; Huy and Filiatrault 2006).

Factor 3: Perceived Complexity

The final factor under technological context is perceived complexity. Several past studies on e-commerce adoption, such as Davis et al. (1989), used opposite terms such as 'perceived ease of use'. Generally, perceived ease of use is conceptualized as the extent to which a firm perceives the adoption of e-commerce would be effortless. In contrast, complexity is defined as the degree to which an innovation is perceived as difficult to understand and use (Rogers, 1995).

2.2.2 Organisational Context

Most past studies, such as Iacovou et al. (1995), Chewlos et al. (2001) and Grandon and Pearson (2004) have often combined organisational context factors under a single factor which is termed as 'organisational readiness' or 'e-readiness'.

Organisation readiness is defined as the resources at the disposal of the firm to perform adoption (Saffu, Walker, and Hinson, 2008), such as the availability of human, financial and technological resources of a firm (Tan et al. 2007). On the other hand, e-readiness is defined as the degree to which an economy or community is prepared to participate in the digital economy (APEC 1999).

Parker (2000) described e-readiness as “preparedness” to operate in an e-business and e-commerce marketplace.

This study, however, further divides the organizational context into two factors: e-commerce knowledge and attitude, and the management attitude towards e-commerce.

Factor 4: E-commerce Knowledge and Expertise

Many studies have documented how the level of e-commerce knowledge and expertise within an organisation can affect its adoption. For example, Mehrtens et al. (2001) highlighted that the knowledge among non-IT professionals is a very significant factor in Internet adoption. Teo and Ranganathan (2004) also discovered that 54.4% of e-commerce adopters in Singapore had a formal plan and a task force dedicated to carry out e-commerce initiatives, indicating the prevalence of internal expertise within such organisations. However, knowledge is most influential only at the earlier stage of adoption, and become less important when e-commerce moves towards the higher end of adoption ladder (Roberts and Toleman, 2007).

Factor 5: Management Attitude Towards E-Commerce

According to Saffu et al. (2008), top management's enthusiasm to adopt information technology is one of the factors that contribute towards adopting of e-commerce. It can be expected that companies that have positive management attitude towards e-commerce have more tendency to initiate e-commerce activities. Moreover, the success of e-commerce deployment also depends on the support by the management.

2.2.3 Environmental Context

Environmental pressure may come from the firm internally or from external parties. The environmental context consists of three factors: external change agents, pressure from trading factors, and pressure from competitors.

It is worth noting here that a number of past studies that have grouped the above three factors into a single factor. For example, Gibbs et al. (2003) have combined the factors of competition, the government, industry, and the reliance on firms that are using e-commerce, under a factor termed as 'external pressure'. Similarly, in Grandon and Pearson (2004), the factor 'external pressure' was assessed by incorporating competition, social factors, dependency on other firms already using e-commerce, the industry and the government. This study, however, investigates the three factors separately.

Factor 6: External Change Agents

A number of studies have investigated the availability of external skilled labour and software/hardware vendors as a determinant of e-commerce adoption among SMEs (e.g. Srinivasan et al., 2002; Doolin et al., 2003). Similarly, the presence of multinational companies such as Microsoft or Google can also spur the uptake of e-commerce by providing reliable products and fostering indigenous ICT community and enriching them with technical expertise (Alzougool and Kurnia, 2008)

Kuan and Chau (2001) noted that another driving force SMEs to adopt a technology comes from the government policies. Through direct interventions, governments have a considerable impact on the level of Internet penetration and usage. For example, Ang et al. (2003) explained that within the Malaysian shipping industry, the Electronic Data Interchange (EDI) usage is high because shippers and forwarders are forced to transact with Customs Department electronically, for duty payments and import/export declarations.

Factor 7: Pressure from Trading Partners

The success of the Internet initiatives of an organisation depends not only on its own effort, but also on the readiness of its customers, suppliers, and trading

partners to engage in electronic interactions and transactions (Barua, Whinston and Yin, 2000a; 2000b).

Keeling et al (2000) investigated the factors driving and inhibiting e-commerce adoption in SMEs. They found that adoption was motivated by pressure from customers, a belief that e-commerce would produce revenues or reduce costs, and access to new markets.

A firm may adopt a technology due to the influences exerted by its trading partners (Kuan and Chau 2001). This is because a company may feel pressure to adopt the technology if its business partners request or recommend it to so. Multinational corporations, in the past, have created coercive pressures on their subsidiaries and suppliers by requiring them to use e-commerce technologies to link to global production networks (Gibbs and Kraemer 2004). Therefore, SMEs, might also face the same pressure, especially when dealing with relatively bigger companies and partners.

Factor 8: Pressure from Competitors

Relationships among players within the same industry also affect the overall industry structure (Gregor and Johnston, 2000). These relationships determine the extent of competition and rivalry within the industry and play a role in e-commerce adoption. A company may feel pressure when it sees more and ore

companies in the industry are adopting e-commerce and therefore feels the need to adopt it as well, in order to remain competitive (Kuan and Chau, 2001).

Moreover, power structure within the industry is also crucial in technology adoption. Alzougool and Kurnia (2008) claimed that if there are dominant players in the industry who enjoy a lot of power, they can force other weaker entities to follow suit. Similarly, if the industry is monopolized by a monopoly, duopoly or oligopoly, any technology initiative by one player will then be closely matched and emulated by the rest. However, only few studies have explored how this factor affects the adoption of e-commerce (e.g. Zhu et al., 2003; Wymer and Regan, 2005).

Dependent Variable: E-commerce Adoption

Although e-commerce activities also include conducting more complex tasks such as online data gathering and online customer relationship management (CRM), this study looks at the more basic e-commerce activities. This includes having a website, utilizing emails, doing online marketing, conducting online sales, using online payments, and performing online purchases.

As shown above, a review of relevant literature has highlighted the importance of further research into the factors which trigger or influence the decision to implement e-commerce in Malaysian SMEs.

2.3 CONCLUSION

In conclusion, this chapter has identified factors that influence SME's in adopting e-commerce in their organisations. This chapter also discussed the previous models that have been used in similar studies. The proposed research model and hypotheses will be discussed in the next chapter.