

Social Structures, Isomorphic Pressures, and B2B Utilisation in the Thai Tourism Industry

Savanid Vatanasakdakul
Macquarie University, Australia
svatanas@efs.mq.edu.au

Chadi Aoun
Macquarie University, Australia
caoun@efs.mq.edu.au

Abstract

This study aims to develop and test a theoretical model to investigate how Thai firms use B2B technology for interorganisational collaboration and productivity. We apply the institutional theory to investigate factors affecting firms' B2B technology utilisation and performance in the Thai tourism industry. This study posits that mimetic, coercive and normative pressures may influence B2B technology utilization and performance. Survey-based research was carried out to test this model. Following questionnaire development, pretest, and a pilot study, data were collected from firms that have adopted B2B technology in the Thai tourism industry. The Partial Least Squares method was used for data analysis. Results show that normative and coercive pressures had a significant influence on firms' utilisation of B2B technology, while only normative pressure had a significant influence on performance.

1. Introduction

The past decade was marked by steady advances in the ubiquity of Internet and e-commerce throughout the industrialized world. Despite the fact that the ability to access the Internet in developing countries is a prerequisite for the development of e-commerce, the number of Internet users does not necessarily indicate the volume of Internet-based Business to Business (B2B) activity expansion and their productivities [15, 16, 24, 41, 42]. In a survey of 12 developing countries conducted by the United Nations [40] which to our knowledge is the most recent comprehensive survey to date, e-mail was the only Internet activity in which more than 50 percent of the respondents engaged in the last six months. The other forms of B2B technology such as internet based Electronic Data Interchange (EDI), are rarely mentioned.

To serve the purpose of this study, B2B is classified into two levels: B2B transaction and B2B communication. The theoretical foundation of B2B transaction is based on automated computer-to-

computer communication systems (e.g. EDI), while B2B communication (e.g. e-mails and e-marketplaces) is more focused on the use of computer-mediated communication in interorganisational contexts. Due to the limited B2B transaction adoption in developing countries [15, 40], the scope of B2B technology herein refers to the use of internet-based B2B communication including e-marketplace and e-mail and excludes EDI.

This research aims to investigate factors effecting the utilisation of B2B technology in developing countries, in this case, Thailand. Thailand is a developing country, which is located in South East Asia. Internet facilities have been available since 1987. The number of Internet users reached approximately seven million in 2004, which is equal to approximately 12 users for every 100 population [25]. Although the number of Internet users has increased and the Thai government has established the national Information and Communication Technology (ICT) plan to encourage Internet based B2B technology adoption in the Thai business sectors, particularly in small and medium enterprise [25], Thailand faces a slow uptake of B2B technology among businesses. Research on e-commerce adoption in Thailand [18, 31] found that Thailand is still struggling to maximise the diffusion of B2B technology and that net benefits such as cost reduction and improved competitiveness have not been realized. However, very few studies have attempted to further explain the low level of B2B diffusion in Thailand. It is worthwhile to note here that B2B technologies such as email and e-marketplace have already been available to many firms in the Thai tourism industry, however empirical findings from our previous research [41, 42] have pointed to a very low level of utilisation and performance benefits.

This research posits that, in an interorganisational network, the nature of business relationships can influence the B2B technology utilisation and performance. This research therefore aims to investigate the *types of isomorphic pressures* –

mimetic, coercive and normative – that may influence B2B technology utilisation and performance in Thai firms. To our knowledge, the institutional theory has not been applied in the context of internet based B2B technology, particularly in developing countries. The next section presents a review of relevant literature on B2B technology diffusion.

2. Literature on B2B technology diffusion

There is a considerable amount of research attempting to analyze the adoption and diffusion of B2B technology [e.g. 30, 34, 37]. A review of relevant literature revealed that various theoretical frameworks, for example organisational learning theories, the risk benefit framework and theories of media richness, have been adopted to investigate this area. Yet, impact of the Internet on interorganisational relationships has received little attention in the academic literature [29].

One of the prime benefits claimed for B2B technology is that information will be freely shared among trading partners, a question arises as to what extent can information be shared [28]. This is a critical issue in the business world as information is the key factor to operate and to gain competitive advantage. Eventhough technology provides the ability to share information, firms may not want to share their information for several reasons. It will be difficult to convince trading partners to adopt an information system for inter-firm communication and collaboration, unless there is a clear benefit for all partners [28].

Furthermore, the complexity of interorganisational networks in the B2B e-marketplace has focused more attention on the interdependency among firms. The nature of the B2B e-marketplace model results in more complexity in interorganisational relationship than would be found in IOS such as EDI. While traditional IOS models predominately operationalise one-to-one relationships, e-marketplaces are mainly characterised by one-to-many and many-to-many relationships [19, 27, 39].

B2B technology adoption and diffusion research tend to be drawn from experiences in developed countries, and existing theories are also implicitly grounded in this context [13]. For instance, Rao et al. [29] assert that the internet does not appear to hinder interorganisational relationships in the Australian service industry. In fact, it improves business performance and satisfaction. Nevertheless, it is

argued that emerging economies or non-western economies present a significantly different business context to developed economies, with differences in physical infrastructure, financial support, technical know-how, business philosophy and culture. This may lead to different challenges facing firms in emerging economies, which may not benefit from western approaches' to technology adoption and diffusion [13].

Although the different theoretical perspectives drawn to explain firms' behaviour in adoption and diffusion of B2B technology, one of the issues pointed out by researchers is the connection between inter-firm relationships and firms' performance. For instance, Subramani [34] adopted theories of organisational learning and transaction cost to propose a model explaining suppliers' use of a supply chain management system (SCMS). The results indicated that the use of IT in the supply chain can foster a closer buyer-supplier relationship. In a study by Kaefer and Bendoly [19], it was found that firms seem to have gained better benefits from adopting EDI than non-EDI systems. Traditional EDI systems have been geared towards establishing long term partnerships, where volume economies are critical. Instead, the non EDI e-commerce technologies are often associated with a much larger community of potential short-term partnerships.

One important aspect of B2B technology adoption and diffusion is the consideration that firms give to investment decision making and perceived benefits [8]; nevertheless, other factors, such as technical infrastructure, perceived risk, and trust, are also important for the utilisation of the technology. For example, a study by Zahay and Handfield [43] found that organizations which possessed, not only the technical capabilities for automation but also the ability to learn and share information, would be the most likely to adopt B2B technology.

3. Research model, Hypothesis and Construct Development

This section presents the research model, hypothesis and construct development based on the institutional theory.

3.1 Institutional Theory

This study proposes to investigate the isomorphic pressures effecting the utilisation of B2B technology in Thailand via an institutional lens. The institutional

approach highlights the importance of institutional environments influencing organisational structures and actions. Burt (1987, cited in Teo et al. [36]) asserts that “organisations are thus subject to pressures to be isomorphic with their environment, which incorporate both interconnectedness and structural equivalence.” This isomorphism implies that, over time, organizations operating in a specific social context become increasingly similar through institutional forces [10].

The institutional approach has been applied by several Information Systems (IS) researchers. One of the major studies in this area is by Teo et al. [36]. They validated the pressures that exist in an institutionalised environment influencing organisational predisposition toward an information technology-based interorganisational linkage. Teo et al. [36] adopted three types of isomorphic pressures, which were conceptually proposed by DiMaggio and Powell [10], to investigate adoption of financial electronic data interchange (FEDI) in Singapore. These isomorphic factors are categorized as mimetic, coercive and normative pressures. 583 survey questionnaires were sent to top management to measure the isomorphic pressures they faced and their intention to adopt FEDI in Singapore. The results revealed that overall there was a strong empirical support for institutional-based variables as predictors of adoption intentions for FEDI. Normative pressures had the strongest influence on the adoption intention, followed by coercive and mimetic pressures.

Furthermore, the concept of isomorphism has also been applied in enterprise resource system (ERP) adoption research. Liang et al. [22] developed and tested a model in the Chinese context to investigate the assimilation of ERP in the post-implementation stage. They found that coercive pressures positively affect top management participation without the mediation of top management beliefs, while normative pressures directly effect ERP usage.

B2B technology highlights the importance of business relationships for inter-firm collaboration. We propose a research model which applies the notion of isomorphic pressures to investigating the utilisation and performance of B2B technology in Thailand. This research hopes to provide a better understanding of how external pressures influence organisational behaviour in a B2B technology context. Figure 1 depicts the research model, which is derived from Teo et al. [36].

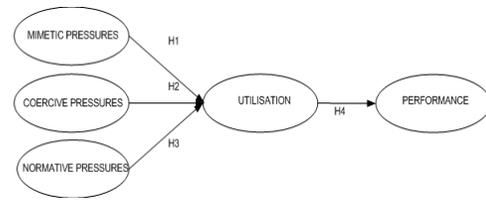


Figure 1. The research model

3.2 Construct Development

3.2.1 Mimetic pressures

Mimetic pressures results as organisation response to uncertainty by mimicking action of other organisation [10, 22]. According to Teo et al. [36], mimetic pressures refer to “the prevalence of a practice in the focal organisation’s industry and the perceived success of organisations within the focal organisation’s industry”. They point out that the decision for firms to engage in a particular behaviour can be influenced by their members in an interorganisational network. Organisations are likely to imitate the behaviours of those whom they perceived as successfully. One of the strategies firms may apply to stay competitive in the marketplace is to mimic behaviours of successful organisations. This seems to be relevant to our research context, as businesses in East-Asian countries may believe that the only way to become a ‘modern’ is through emulation of the west [33]. Consequently we hypothesize that:

H1: Greater perceived mimetic pressures will lead to higher utilisation of B2B technology in the Thai tourism industry.

3.2.2 Coercive pressures

Coercive pressures refer to “formal or informal pressures exerted on organisations by other organisations upon which they are dependent, and the cultural expectations in the society within which the organisations function” [10]. Using advanced computer systems to connect trading partners in an electronic supply chain may create resistance from trading partners in terms of the distribution of benefits. Integration may not provide the same benefits to all the parties [28], as can be seen in the case of EDI, where the initiator firm may take a proactive role in convincing a smaller firm to adopt EDI by using the veiled threat of loss of business, through their position of power in the interorganisational relationship [28, 35]. We therefore hypothesize:

H2: Greater perceived coercive pressures will lead to higher utilisation of B2B technology in the Thai tourism industry.

3.2.3 Normative pressures

Normative pressures highlight the assumption that a focal organisation within an interorganisational network may be influenced by the extent of technology diffusion among its suppliers and customers, and not necessarily depend on its perception of the technology characteristics [10, 36]. The sharing norms among members of a network can facilitate consensus which in turn increases the strength of these norm and result in a similar behaviour [36]. Hence, in the context of B2B technology adoption in Thailand, normative pressures faced by an organisation may be increased by a higher commonness of diffusion of B2B technology among its trading partners. Thus, we hypothesize:

H3: Greater perceived normative pressures will lead to higher utilisation of B2B technology in the Thai tourism industry.

3.2.4 Utilisation and Performance

One common theme underlying the various streams of research in B2B technology adoption and diffusion is the inclusion of perceptions of the firms' performance [e.g. 19, 29, 34]. In addition, another common theme of research attempts to investigate the motivation for utilisation of the technology [e.g. 17, 30, 43].

One of the main issues of B2B technology adoption and diffusion in developing countries, which was identified by previous research, is technology utilisation [16, 17, 24]. A review of literature found that B2B technology adoption in developing countries is still very limited and characterized by a slow uptake. The adoption of B2B e-marketplace and e-mail has been the focus of this research area. The primary use of B2B activities was limited to information exchange via e-mails.

This research also aims to understand that linkage between isomorphic pressures on utilisation as well as performance of B2B technology. Utilisation refers to the behaviour of employing the technology in completing tasks and it is measured by the frequency of usage [12]. In addition, a focus on performance impact allows us to understand and determine the perceived benefits that Thai businesses gain from B2B technology utilisation. To serve the purpose of

this research, performance impact refers to the perceived accomplishment of a portfolio of tasks by an organisation. It includes higher performance that leads to improved efficiency and effectiveness [12]. In addition, the prime benefits promised by B2B technology diffusion in developing countries, which include wider and cheaper access to new business opportunities globally and reduction in transaction costs, are also included for assessing performance in the Thai context [15, 16, 24]. Thus, we hypothesize:

H4: A higher utilisation of B2B technology will lead to a better performance of B2B technology.

3.2.5 Control variables

Previous organisational level research on IT adoption and diffusion in developing countries, has suggested a number of factors to include as candidate control variables:

1) **Type of Internet access:** Different types of Internet access, for example dial-up, which provides slower speed connections than broadband, may impact on the utilisation of B2B technology as well as the firms' performance [40]. Thus, the type of Internet access is controlled for in this research.

2) **Level of IT related skills and experience:** Experience with technology is an important factor in the adoption and diffusion of new technology and it has been found to be positively related to utilisation. Literature often indicates that firms that do not have staff with IT skills and experience are not likely to adopt and hence utilise the new technology [2].

4. Research Method

The following section details our construct operationalization and data collection method.

4.1 Construct Operationalization

We use the survey method to test the proposed research model. A survey instrument was developed by identifying appropriate measurements from the previous literature review. Some modification was made to suit the context of this study. Since the target population was tourism firms in Thailand, the questionnaire was translated into Thai using the backtranslation method [1]. All of the constructs in the model are operationalised as reflective constructs. Table 1 presents a summary of major constructs.

Table 1. A summary of major constructs

Construct	Description	Ref.
Mimetic Pressures	Refer to influences from competitors who adopt the B2B technology and are perceived favorably by their trading partners.	36
Coercive Pressures	Refer to the influences of powerful trading partners leading a firm to adopt and diffuse B2B technology	36
Normative Pressures	Refer to the degree of technology usage by a firm's trading partners creating new norms for a firm to follow	36
Utilisation	Refers to the behaviour of employing the technology in completing tasks and it is measured by the frequency of usage.	12
Performance	Refers to the perceived accomplishment of a portfolio of tasks by an organisation.	12, 16, 24

4.2 Data Collection

The unit of analysis of this study is the Thai tourism industry. The tourism industry is one of the most important industries that contribute to the Thai economy [32, 38, 40]. According to statistics provided by the Tourism Authority of Thailand (TAT) [38], the tourism industry contributed 367,380.36 million Baht (about 11 Billion \$US) to national income in 2005. The majority of firms in the Thai tourism industry are Small and Medium Enterprises (SMEs). These local SMEs play a major role in terms of economic contribution to Thai economic growth [18].

The Thai government has emphasized the importance of e-commerce development in the tourism industry. The vision of TAT which underpins their ICT strategies has two thrusts: 1) to use ICT as a marketing tool to build competitive advantages in terms of increasing the nation's income and improving the quality of services for tourists; and 2) to use ICT to enhance work efficiency and effectiveness thus driving down costs [26].

Based on its vision, TAT was a pioneer in setting up a B2B e-marketplace for the tourism industry in Thailand, available at www.tourismmarketplace.com for local and overseas companies. The authority hoped that access to this website would provide a new channel to enable local companies to meet new trading partners worldwide. It provided online services for the

participants such as search functions to find potential trading partners, member profiles, a message centre, advertisements for package tours, web board for online negotiation, e-mail, and online auctions. However, it had a very low utilisation rate. In August 2004, the TAT redeveloped and launched a new e-marketplace, www.thaitravelmart.com. The new e-marketplace is a similar concept to the previous one. The main difference was the name of the website. In both cases, TAT encouraged voluntary use of the technology and offered these services free of charge. The reasons of the failure of the previous have not yet been well studied [33, 26, 41].

The utilisation of the B2B technology seems to be a real issue effecting technology adoption and diffusion in Thailand. Despite the fact that the majority of firms in Thailand have adequate basic technical infrastructure including internet access, the B2B e-marketplaces have not been a success due to very low utilisation leading to poor performance [33, 26].

The target population for this study consists of the companies that have registered on the B2B e-marketplace, www.thaitravelmart.com. According to the information provided by TAT in March 2005, there were 331 Thai tourism companies registered on the B2B e-marketplace across the country. These companies have been selected as they are likely to have had some experience in using B2B technology. Information about these companies including the address and contact person for each company were kindly provided by TAT. In addition, all the survey questionnaires included a formal letter of support for this research from the Thai government.

The survey questionnaires were sent out to firms between October 2005 and February 2006. The number of responses totaled 68 companies, which was a response rate of 20 percent. The majority of the respondents (91 percent) were SMEs. The surveys were sent to employees who were responsible for using email and e-marketplace to communicate with trading partners. Table 2 presents the profiles of the responding firms and Table 3 presents the respondents' demographics.

The survey questionnaire was designed to collect attitude data towards B2B technology adoption and utilisation in the Thai tourism industry. It used the Likert scale. The Likert scale is widely used in instruments measuring opinion, belief and attitudes [9]. It asks the respondents to express their degree of agreement/disagreement with issues. This research

adopts a seven point scale (1=strongly disagree to 7=strongly agree). The data analysis method and results will be presented in the following section.

Table 2. Profile of responding organisation

Variables	Category	N	%	Mean
Annual revenue (Baht)		68		2,609,751,475
IT investment (Baht)		68		392,578
Sizes of companies (employees)	Small (1-50)	40	59	
	Medium (51-200)	22	32	
	Large (>200)	8	9	
Type of Internet access	Dialup	33	49	
	Broadband	30	44	
	Seattleite	3	4	
	Others	2	3	
Experience with IT (Number of years)	Experience with e-marketplace	68		2.2
	Experience with e-mail	68		4

Table 3. Respondent Demographics

Variables	Category	Mean
Years of experience with company		4.85
Level of IT related skills and experience	No. of years using PC	9
	No. of years using Internet	6
	*Knowledge/skills with e-mail.	3
	*Knowledge/skills with e-marketplace	2.3

* Measured by Likert scales of 1 (min) to 5 (max).

5. Data Analyze and Results

5.1 Analysis Strategy

Partial Least Square (PLS) was chosen for data analysis. The decision of whether to use PLS or the covariance-based approach was made based on the objectives of the research project. In this research, the PLS approach is preferable because of the suitability of the technique to the nature of this study. PLS provides better prediction capability and it can be used for analysis of a high complexity model with small sample sizes associated with a large number of independent variables. In addition, it has no requirement of a normal distribution assumption

which suits the nature of the data collected [3, 4, 5]. The PLS software used in the research is PLS-Graph (Version 3.00) developed by Wynne Chin, which is widely used in IS research.

Several techniques are implemented to serve this purpose. The broad categories of the PLS model evaluation can be expressed as: assessing the structural model and the measurement model. For the structural model, techniques such as R-square, path coefficient, bootstrapping, direct and indirect effect, and moderating effect are discussed; while assessing the measurement model aims to ensure the validity and reliability of the model. The assessment techniques include loadings and weights, composite reliability, average variance extracted and cross-loadings.

5.2 Evaluating the Measurement Model

To ensure the accuracy of the structural model analysis, the validity and reliability of the scale development needs to be tested [6]. The validity test of the scale was conducted to evaluate the degree to which it measures what it is supposed to measure. The results in Table 4 and 5 suggest that our measurement model demonstrates sufficient discriminant validity. Table 4 presents the results obtained via the bootstrapping procedure including PLS loading, weight and T-statistics. Chin [3] suggests that the loading should be greater than 0.707. As evident, all except two items, mimetic3 and mimetic4 were lower than 0.707. However, it was still in an acceptable range as a loading of 0.5 or 0.6 may still be acceptable in the early stage of scale development [3].

In addition, Fornell and Larcker [11] suggested that the discriminant validity can be evaluated by comparing the Average Variance Extracted (AVE) of the latent variables and the correlations among the Latent Variables (LVs). They recommend that the AVE of the latent variables should be greater than the square of the correlations among the LVs. Table 5 shows that the square roots of AVE are greater than the corresponding of diagonal elements. This indicates that each measure was not tapping into different concepts. Moreover, the results of cross-loadings analysis showed that the loading clearly separated each latent variable as theorized in the model. Thus, it is confirmed that the construct validity in this research has been met.

Table 4. Loadings for measurement model

Construct and Items	PLS loadings	T-statistics	Significance level
Performance			
Effectiveness	0.9419	43.0253	0.01
Important tool	0.9101	29.3866	0.01
Timeliness	0.9592	63.6851	0.01
Business opportunity	0.9302	37.1509	0.01
Reduce cost	0.8557	19.5193	0.01
Utilisation			
Time spend on ... email by firm (hr/day)	0.7691	4.4385	0.01
Email by respondent	0.7528	5.0517	0.01
Emarket by firm	0.8843	10.3352	0.01
Emarket by respondent	0.7025	4.2000	0.01
Mimetic			
Competitors receive favorable perception when using... email by supplier	0.9395	4.1860	0.01
Email by customer	0.9892	3.9642	0.01
Emarket by supplier	0.6838	2.5457	0.01
Emarket by customer	0.6590	2.4056	0.01
Coercive			
Forcefulness by ... supplier to adopt email	0.9084	8.6880	0.01
Customer to adopt email	0.9523	11.5401	0.01
Supplier to adopt market	0.7624	4.3072	0.01
Customer to adopt market	0.7176	5.0281	0.01
Normative			
Adoption level of ... emarket by supplier	0.8562	15.7044	0.01
Emarket by customer	0.8925	18.8792	0.01
Email by supplier	0.8633	19.0809	0.01
Email by customer	0.8810	20.1574	0.01

Table 5. Correlation among major constructs

Measures	Performance	Utilisation	Mimetic	Coercive	Normative
Performance	*0.920				
Utilisation	0.044	0.779			
Mimetic	0.307	-0.196	0.831		
Coercive	0.131	-0.368	0.367	0.840	
Normative	0.516	-0.246	0.421	0.091	0.873

* Diagonal elements are square root of AVEs.

Furthermore, the internal consistency of each dimension was assessed by computing Cornbach's

alpha, composite reliability and AVE. Table 6 presents the results along these dimensions. All Cornbach's alpha and composite reliability exceeded the Nunnally's criterion of 0.70 [7, 3, 4], while the AVE for these constructed were all above the recommended threshold of 0.5 [11].

Table 6. Assessment of internal consistency

Dimensions	Cornbach's Alpha	Composite Reliability	AVE
Performance	0.925	0.965	0.847
Utilisation	0.780	0.861	0.608
Mimetic	0.921	0.896	0.691
Coercive	0.867	0.905	0.707
Normative	0.895	0.928	0.763

5.3 Testing the Structural Model

Following confirmation of the validity and reliability in the measurement model, an overview result of the structural model is presented in Figure 2. In addition, the statistical outcome of examining the hypotheses in this study obtained from PLS analysis is presented in Table 7.

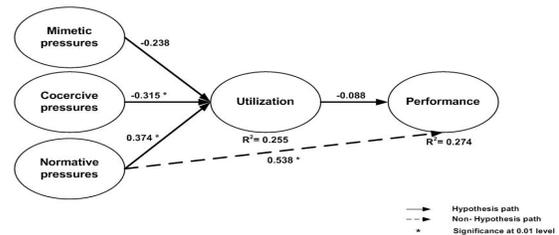


Figure 2. Structural model results

The predictiveness of the model can be assessed by the R² for dependent constructs. The R² value of 0.274 of the perceived performance indicates that utilisation and normative pressures accounted for 27.4 percent of the variance of the construct. In addition, the R² value of 0.255 of the utilisation indicates that mimetic, coercive and normative pressures accounted for 25.5 percent of the variance of the construct.

In the structural model, path coefficients represent the predictive link among constructs. All the path coefficients between the research constructs are expressed in a standardized form to permit comparison of their relative strengths. To assess the statistical significance of the path coefficients, a bootstrapping analysis was performed in order to estimate the precision of the PLS estimates. In all,

500 sub-samples were created for the bootstrapping procedure [3, 4].

Table 7. Summary of path coefficients test

	Actual Effect	Path Coefficient	Observed T-statistics	Significance level
Performance (R² = 0.274)				
Utilisation	-	0.088	0.6649	NS*
Normative	+	0.538	5.5763	0.01
Utilisation (R²=0.255)				
Mimetic	-	0.238	1.0624	NS
Coercive	-	0.315	2.4378	0.01
Normative	+	0.374	3.3657	0.01

*NS = Not significant

Based on the analysis of path coefficients in the structural model, the results of this study supported hypotheses 2, and 3 that coercive and normative pressures had influence on the utilisation with significant at 0.01 level, while the hypotheses 1 and 4 were rejected. This implied that mimetic pressures did not have a significant influence on utilisation as well as the path coefficient between utilisation and performance.

Furthermore, direct and indirect effect analysis was also employed for further investigation to find more meaningful results of relationships among the constructs in the structural model. Although the relationship between normative pressures and performance was not formally hypothesized, the analysis showed that normative pressures had a strong direct on the performance, but not coercive or mimetic pressures. The direct path coefficient between the normative pressures and performance was 0.538 at the 99 percent significant level. In facts, it showed the strongest path coefficient in the structural model. In addition, the results demonstrated the increase of the predictive power for the model (R²) from 0.018 to 0.274, but it did not alter any of the significance levels of the path coefficient in the structural model.

Control measures, which are type of Internet access and level of IT related skills and experience of staff were used to detect further patterns in the data. The structural model with control variables revealed that all the control variables had no effect on performance and utilisation.

6. Discussion

Our interest in investigating the role of external isomorphic pressures, namely mimetic, coercive and normative pressures in B2B technology utilization

and performance in the Thai tourism industry revealed some interesting findings. Unlike previous research findings [22, 36], this study found that mimetic pressures did not have any influence in the utilisation of B2B technology in Thailand. One possible assumption that could explain this non-significant relationship of mimetic influences is the fact that Thai firms operating in the tourism industry seem to perceive no successes emanating from the adoption and diffusion of B2B technology to their competitors, hence diminishing the significance of mimetic power. This could also imply that firms in Thailand are not considering the global competitive nature of the tourism industry, which could unveil the efficacy of collaborative B2B technologies abroad, potentially increasing mimetic influences by demonstrating firms' success in other countries. To that end, the Thai government may need to highlight success cases in Thailand and abroad.

On the other hand, coercive pressures had a strong effect on utilisation of B2B technology, but had no significant effect on performance. This could imply that even if firms may have limited choice but to use B2B technology, they are yet to perceive any operational or strategic performance improvements or competitive gains promoted by this technology. Interestingly, the results of the structural model showed a negative relationship between utilisation and coercive pressures. This implies that Thai businesses are not favorable of coercive power for B2B technology adoption and diffusion. This may be explained by the nature of the Thai people that do not like to be forced, symbolically denoted by the meaning of Thailand which literally translates to 'freedom land', and where maintaining harmony and saving 'face' are fundamental cultural values [21].

In contrast, normative pressures exhibit the strongest influence on utilisation and performance. This implies that the Thai firms would most likely utilise B2B technology if it's a common technology that their customers and suppliers are using and it is part of an emerging trend. It seems that such normative factors have more influence on utilisation and performance than mimetic or coercive pressures in this context. This is in-line with previous research findings asserting that Thai people tend to predominantly make decisions by following a norm and a majority of members in a social network [21]. Consequently, the Thai government may consider applying an educational approach that highlights B2B benefits to firms, and allows B2B technology utilisation to organically improve and become the 'norm', at least in the short to medium term. Over

time, more firms (or supply chains) may start realizing competitive advantages emanating from B2B technology. This could increase mimetic influences and coercive influences over the long run.

In addition, the importance of normative pressures in the Thai business community can be accelerated by the strong interdependency between members within the Thai social network. Thailand is known as an interdependence orientation society [21] or a collectivist society [14]. The Thai community values the spirit of community collaboration. Komin [21] refers to this as interdependence orientated Thai society. Collaborative behaviour is a dominant behavioural pattern, particularly in the rural community, where the brotherhood spirit often manifests itself in helping one another and in being interdependent and mutually supportive. Hence, the findings on the importance of normative pressures are in accord with previous research [22, 36] indicating that norms espoused by the businesses environment play a major role in influencing organisations to adopt and utilise new technology. Interestingly, both of the previous studies were conducted in the Asian cultural context, namely Singapore [36] and China [22], where collectivism seems to be a strong cultural value.

Overall, findings show that external institutional factors, normative and coercive pressures, have an impact on the B2B utilization, while only normative pressures had a significant influence on perceived performance of B2B technology. Similar to [36], normative pressures seem to be the most significant factor influencing both utilisation and performance. Both of the control factors, namely type of Internet access and level of IT related skills and experience of staff, did not have a significant influence in the model. This can also confirm the belief that the basic technical infrastructures such as telecommunications, hardware and software are no longer a major problem in the adoption and diffusion of the internet-based B2B technology in Thailand [20].

7. Limitation and Future research

Since this study was conducted in Thailand, it may limit the generalizability of our results beyond the Thai cultural context. Eventhough there are similarities among several Thai cultural values and other Asian countries, one cannot confidently assume that the results will be applicable to all Asian countries. Moreover, our findings may also have limited applicability beyond the tourism industry.

Another limitation is that subjects of this study were representatives of the sub-population of firms

that already had some (often limited) experience in adopting and utilising e-mail and e-marketplace technologies. These firms tend to have higher technological readiness than non-adopters. However, within our scope of study, it can be argued that the researchers may have difficulty in obtaining useful information from the non-adopters as they have no experience in using B2B technology.

Future research in this domain can be extended in a number of ways. A duplication of this study can be done using a larger sample size, a variety of industrial contexts and a variety of countries, particularly in western contexts characterized by individualism rather than collectivism. This will help strengthen the validity of this research. A better understanding of such isomorphic pressures may well lead to an improvement in B2B technology adoption, utilisation, and performance.

8. References

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