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E-Business Investment in the Travel Industry: A Preliminary Study

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Abstract

E-business has been rapidly growing in the retailing and service industries. As an innovative mode for selling and delivering products/services, e-business model involves both technological and strategic changes. It has been observed that firms in the same industry may adopt e-business model at different paces. Questions remain why some firms tend to actively implement e-business while others take cautious attitudes toward it. Scholars from different research fields have approached to the innovation adoption issue from various theoretical perspectives. Drawing upon the innovation adoption literature as well as institutional theory, market orientation theory, and strategic choice perspective, this study proposes a multi-level explanatory model about e-business adoption in the travel industry. We identified some important environmental, organizational, and managerial variables that may affect e-business investment. Using survey data from a sample of travel agencies in Taiwan, we found that external competitive pressure, the firm's innovation orientation, its IT human resource base, the CEO's perception of e-business advantage, and CEO openness to experience were associated to e-business investment.

1. Introduction

In this study we define e-business broadly as an innovative business mode involving delivery of products / services, exchange of data / information, and financial payments through the Internet between the focal firm and its customers, suppliers, and other business partners. Using a sample of travel agencies, we intended to investigate the effects of some important environmental, organizational, and managerial factors on a service firm's involvement in e-business. Why some organizations adopt innovations while others do not has been an often-researched issue [7]. Previous researchers have approached to this issue from different theoretical perspectives, e.g., the innovation adoption / diffusion theory [8][9] and institutional theory [3][10][11]. A

significant suggestion of these research streams is that the variances among firms' adoption decisions could be fully captured only if the influential factors at multiple levels are taken into consideration [12]. There have been a large number of empirical studies on the adoption of such advanced IT systems as EDI [13][14][15], BITNET [16], integrated services digital network (ISDN) [17], and customer-based inter-organizational systems (CIOS) [18]. However, literature discussing the implementation of e-business model has been limited except for some case studies (e.g., [19]). This paper identified some critical factors that may influence a service firm's decision to implement e-business. We were especially interested in the so-called "traditional" firms' responses to the trend of e-commerce. Instead of trying to conceptualize a complete explanatory model, we identified specific antecedents of e-business implementation based on both theoretical literature and field interviews. Our purpose was to address the specific contextual factors with respect to the travel industry. Our pilot field work revealed that travel agency managers had different understandings of the prospect of e-commerce. It is interesting to explore three questions in this context: (1) Is the adoption of e-business model a symbolic / institutional action or an efficiency-driven decision? (2) Which type of market orientation is more closely related to e-business? and (3) How does the CEO's personal characteristics affect the firm's tendency toward e-business?

To answer the above questions, we developed hypotheses based on multiple theoretical perspectives and conducted a mail questionnaire survey in a sample of Taiwan-based travel agencies. We chose the travel industry as the research setting because this industry has seen probably the most striking impact of e-commerce. Travel agents have a long history of utilizing IS technologies and were among the first online retail businesses [1]. According to a Forrester Research survey, travel products sale accounted for 38 percent of the total online sales in 1999, which made the travel industry the largest online seller [20]. In Taiwan, an increasing number of Internet users and a thriving travel industry have pushed e-commerce to the central stage.

These trends make the travel industry of Taiwan an ideal setting to study e-commerce adoption.

2. Hypotheses

This study addresses the issue of e-business investment among travel agencies. A multi-level explanatory model is illustrated in Figure 1. Previous research has shown that organizational tendency for innovation adoption is influenced by a variety of factors [9][21]. One stream of research focuses on the characteristics of particular individuals within an organization (“champions” of innovation) and their influence on the development and adoption of innovative ideas. The other studies emphasize the effect of organizational factors such as organizational structure and business strategy [18][22] and environmental/institutional factors [3]. It is argued that the adoption of e-business model is a complex issue for the firms to handle because e-business involves significant investment in computer and networking technologies as well as human resources. As mentioned above, we did semi-structured interviews with a small sample of travel agency CEOs before the mail survey. Several themes repeatedly emerge from our interviewees’ descriptions about their own understanding of the determinants of e-business adoption. We organized these themes into three categories: environmental, organizational, and managerial factors. The research framework illustrated in Figure 1 reflects the pilot findings.

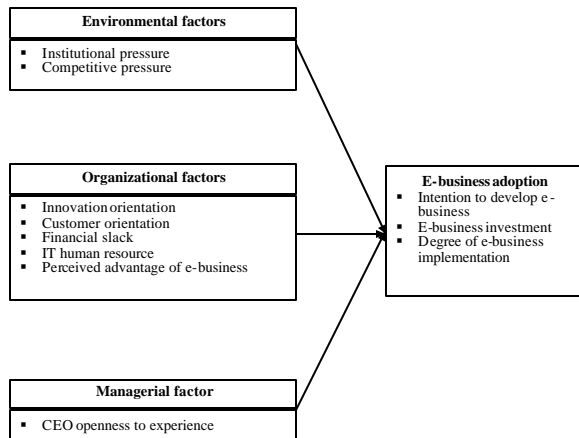


Figure 1. A multi-level model for e-business adoption

Hypothesis 1: The CEO’s perceived institutional pressure is positively related to the firm’s adoption of e-business.

Hypothesis 2: The CEO’s perceived competitive pressure is positively related to the firm’s adoption of e-business.

Hypothesis 3: Firms with a high level of innovation orientation are more likely to adopt e-business.

Hypothesis 4: Perceived advantage of e-business is positively related to the firm’s adoption of e-business.

Hypothesis 5: The more financial slack resource a firm

owns, the more likely that it will adopt e-business.

Hypothesis 6: IT human resources have positive effect on the firm’s adoption of e-business.

Hypothesis 7: A firm managed by a CEO with strong openness to experience is more likely to adopt e-business.

3. Research Method

Research Setting

We chose Taiwan-based travel agencies as the research subjects. The travel industry has been regarded as having the biggest potential to do e-commerce. It is appropriate to test our theoretical model in the context of a single industry because single-industry studies would provide better control over inter-industrial differences and more precise identification of intra-industrial variances [61]. A single industry approach also avoids problems in variable definition and consequent comparability question of peer firms [62]. This is especially important for testing new ideas and identifying specific organizational and institutional factors.

Pilot Study

We collected data through a large-scale questionnaire survey. Before the mass mailing of questionnaires, we conducted pilot interviews with travel agency CEOs for the purpose of obtaining in-depth understanding of the business environment and management practices of the travel agencies upon which we might improve the theoretical relevance of our study. The most important issue was to probe to what extent e-commerce had been introduced into the travel industry. Moreover, we asked the interviewees to describe the key factors related to the implementation of e-commerce.

We developed the initial questionnaire based on the pilot findings and a literature review. The factors mentioned by the interviewees were categorized and linked to similar theoretical concepts appearing in the theoretical literature.

Data Collection

Our sampling frame was the member list of the Taipei Association of Travel Agents of 2000. Since it is a legal requirement that all registered travel agencies must join the above-mentioned trade association, the member list provides an ideal sampling framework. We randomly selected 500 travel agencies from the 961 member firms of the Association. The 10 firms we had interviewed in the pilot study were not included in the sample for questionnaire survey. Then we mailed questionnaires to the selected travel agencies. In order to increase response rate, the first author delivered some of questionnaires personally to the CEOs during a field trip to Taiwan.

We received completed questionnaires from 137 travel agencies. The response rate was 27.4%, which could be seen as acceptable for the large-sample, organization-level surveys [31][65]. We compared the responding firms and the non-responding firms on firm size (operationalized as

total capital) and did not find significant difference. So we felt it safe to say that no non-response bias was observed in our final sample of 137 travel agencies.

Measurement

The final survey instrument was a multi-item, Likert-type (5-point) questionnaire. We used subjective measures because our theoretical focus was on the manager’s perception of environmental and organizational contexts. Previous researchers have suggested that managerial subjective judgment about organizational contexts would accurately reflect the true situation in the organization. Moreover, top managers are well qualified to assess environmental and organizational factors related to innovation adoptions [12].

To measure the travel agent’s investment in e-business in terms of both human resource and financial resource commitments. The CEO was asked to answer two questions: (1) percentage of the employees whose jobs are related to e-business, and (2) investment in e-business as a percentage of the firm’s total assets. Considering that it may be difficult for the CEO to give exact numbers, we used a five-point scale to measure these two variables. A higher score represents a higher percentage. The average of the two items was used as the dependent variable -- *e-business investment*.

4. Results

The average history of the sample firms was 14.81 years (standard deviation = 10.04). The average employment size of the sample firms was 82 employees, with the largest firm hiring 600 people while the smallest firm hiring only 4 people. There were 94 Type A agencies and 43 general agencies.

Hierarchical regression analyses were performed to test the hypotheses. The results are showed in Table 1. We had tested two models; Model 1 includes only control variables and Model 2 includes both control and independent variables.

The results of hypotheses testing are displayed in the full model (Model 2). We did not find multicollinearity problem among IVs after examining the variance inflation factor (VIF) value corresponding to each independent variable (IV). All the VIF values were much lower than the threshold value of 10 [67]. Firm age does not have significant effect on the dependent variable (DV). Additionally, the general travel agencies appear to have moved further than the type A agencies in implementing online booking and payment systems.

As for the results of hypothesis testing, it is first noted that there is no significant relationship between institutional pressure and e-business investment. Thus H1 was not supported. It seems that innovation orientation has little to do with the firm’s “real” involvement in e-business measured as investment.

A positive relationship is found between perceived advantage of e-business and investment, providing strong support for H4. However, H5 is not support. The last organizational factor – IT human resource shows positive effect on the DV. These results support H6. Finally, H7 obtains partial support for CEO openness to experience is positively related e-business investment. Overall, the variance of each DV explained by the full model is significantly higher than explained by the control variables.

Table 1. Results of regression analysis

	E-business investment	
	<i>Model 1</i>	<i>Model 2</i>
Firm age	-.01	-.01
Firm size	.22	-.10
Firm type	-.12	-.10
Institutional pressure		-.06
Competitive pressure		.03
Innovation orientation		-.01
Customer orientation		.05
Perceived advantage of e-business		.29**
Financial slack		.07
IT human resource		.52***
CEO openness to experience		.22*
<i>R</i> ²	.01	.34
<i>Adjusted R</i> ²	-.01	.28
<i>R</i> ² change		.33***

* *p* < .05 ** *p* < .05 *** *p* < .05

5. Discussion

In this study we proposed a multi-level model about the factors influencing a service firm’s adoption of e-business. We measured e-business adoption as the level of investment in e-business a firm has committed. Our research framework is rooted in innovation adoption literature. Institutional theory, market orientation theory, and managerial strategic choice perspective were applied to explain how e-business adoption is influenced by different contextual factors. The hypotheses were tested in a sample of 137 travel agencies in Taiwan. The empirical findings are mixed. Two variables that consistently predict e-business adoption are the firm’s strength of IT human resources and the CEO’s perception of advantage of e-business. Finally, there is a positive linkage between the CEO’s personality trait (openness to experience) and the firm’s investment in e-business measured as both human resource and financial commitments.

References

(References are upon request)