INVESTIGATING BUSINESS SCHOOLS’ INTENTIONS TO OFFER E-COMMERCE DEGREE-PROGRAMS

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ABSTRACT

The objective of this paper was to examine the determinants of business schools’ intentions to offer Electronic Commerce Degree Programs (ECDP) using an Extended Theory of Reasoned Action (ETRA). The ETRA introduces “behavioral readiness” as a mediating predictor of “behavioral intention.” Data were collected from 105 faculty members across the USA using a web-based survey method. The results indicated an incremental contribution of the proposed ETRA over the initial Theory of Reasoned Action in predicting sampled schools’ intentions to offer ECDP.

Introduction

E-Commerce is a new way of doing business that continues to expand rapidly worldwide. From its inception in 1995 to 2005, it has grown in the United States alone from “a standing start to a $172 billion retail business and a $1.5 trillion business-to-business juggernaut” (Laudon and Traver, 2007). Beyond the USA, E-Commerce is also growing quickly, particularly in Japan, China, Brazil, India, and Europe (as reported in several collaborative works under the leadership of the Center for Research on Information Technology and Organizations). As a consequence of these evolutions, it may not be completely unrealistic to suggest that E-Commerce is the commercial way of future. Indeed, Laudon and Traver (2007) predict that E-Commerce will eventually influence nearly all commerce, or that most commerce will take the form of Electronic Commerce by year 2050.
We use “electronic commerce” in this study to refer to a digitally enabled commercial transaction between and among businesses (B2B), businesses and consumers (B2C), governments and businesses (G2B), governments and citizens (G2C) or citizens and governments (C2G). The question raised by the study was related to the implications of E-Commerce for higher learning academic institutions. We tried to contribute to addressing the question by focusing specifically on business schools’ intentions to offer Electronic Commerce Degree Programs (ECDP), using the Extended Theory of Reasoned Actions (ETRA). The paper is organized as follows. First, we specify the proposed Extended Theory of Reasoned Action followed by the relevant hypotheses. Next, we expose the study’s methodology. Finally, we report the study’s results followed by discussions and conclusions.

THEORY AND HYPOTHESES

The Extended Theory of Reasoned Action

The Theory of Reasoned Action (TRA), developed by Fishbein and Ajzen (1975) and Ajzen and Fishbein (1980), is one of the earliest theoretical frameworks proposed to investigate behavioral intentions related to adoption of innovations. However, the TRA suffers a generalization deficiency. Indeed, the TRA was constructed essentially for individual level of analysis, as shown by its use of terms like “person” or “individual.” Wolfe (1994, p.8) has explained that “original diffusion research dealt with the adoption behavior of individuals”, like farmers in Ryan and Gross (1943) and doctors in Menzel and Katz (1955). Nevertheless, after innovations diffusion research has grown and expanded from individual level of analysis to organizational level of the analysis, necessary adjustments have not been made. Therefore, it becomes somehow difficult to apply the TRA to organizational level research questions without some adjustments. In the current study, we tried to provide such adjustments by proposing an Extended Theory of Reasoned Action (ETRA). Instead of “person” or “individual”, the ETRA uses “actor”, which is a more general and inclusive term borrowed from economics. The ETRA postulates that an actor’s behavioral intention to perform or not to perform a given behavior is determined by the actor’s attitude toward the behavior and some subjective norms about the behavior. Behavioral intention constitutes a cognitive dimension of behavior, reflecting a state of mind that drives an actor to perform or not to perform a given behavior.

In addition to the adjustments related to the level of analysis, we also introduced a new construct, “behavioral readiness”, as a mediating variable between “behavioral intention” and its predictors: “attitude toward behavior” and “subjective norms about behavior.” We define “behavioral readiness” as a pre-behavior state of perceived internal factors that can strengthen or weaken behavioral intention to perform or not to perform a given behavior. Attitude toward behavior refers to the degree to which an actor has a “favorable or unfavorable evaluation or appraisal of the behavior in question” (Ajzen, 1991). The ETRA contends that an actor’s attitude toward a behavior is determined by a set of salient beliefs about certain outcomes (positive or negative) related to the behavior. Subjective norms about behavior refer to “the perceived social pressure to perform or not to perform the behavior” (Ajzen, 1991). The ETRA posits that subjective norms about behavior are the results of certain normative beliefs (favorable or unfavorable). After specifying the ETRA, the main research question was whether it would make some incremental contributions over the initial TRA in predicting behavioral intention. More specifically, we tried not only to look at whether “attitude toward behavior” and “subjective
norms about behavior” would be significant predictors of behavioral intention, but also to test whether “behavioral readiness” would be a significant mediating variable. Figure 1 presents the postulated model.

![Postulated Model](image)

**Figure 1: Postulated Model**

### Hypotheses

Consistent with the postulated model, we tested the ETRA (using three predictors: behavioral readiness, attitude and subjective norms) as compared with the TRA (which uses only attitude and subjective norms). We made the following arguments. First, we argued that the more favorable an actor’s attitude is toward a given behavior, the stronger should be the actor’s behavioral intention to perform or engage in the behavior. More specifically, we believed that the more favorable a school’s attitude is toward ECDP, the stronger should be the school’s behavioral intention to offer such program. Conversely, the more unfavorable a school’s attitude is toward ECDP, the weaker should be the school’s behavioral intention to offer the program. Thus, based on the review of the literature, we formulated the study’s first hypothesis as follows:

**Hypothesis 1:** A school’s attitude toward electronic commerce degree program offering will be related to the school’s behavioral intention to offer ECDP.

Secondly and similarly, we argued that the more favorable are subjective norms about a given behavior, the stronger should be the behavioral intention to perform or engage in the behavior. This suggests that for a given business school, the more favorable are subjective norms about “offering ECDP”, the stronger should be the school’s behavioral intention to offer such program. In contrast, the more unfavorable are subjective norms about ECDP, the weaker should be the school’s behavioral intention to offer the program. Therefore, we formulated the study’s second hypothesis as below:

**Hypothesis 2:** Subjective norms about electronic commerce degree program offering will be related to a school’s behavioral intention to offer ECDP.

Thirdly, we contended that the greater is an actor’s behavioral readiness for a given behavior, the stronger should be the actor’s behavioral intention to perform that behavior. For this study in
particular, this would suggest that the greater is a school’s behavioral readiness for a new degree program such as ECDP, the stronger should be the school’s intention to offer that program. Hence, the study’s third hypothesis is postulated as follows:

Hypothesis 3a: A school’s behavioral readiness will be related to the school’s behavioral intention to offer an electronic commerce degree program.

In addition,

Hypothesis 3b: A school’s behavioral readiness will mediate the relationship between behavioral intention and its predictors, attitude and subjective norms.

These first three hypotheses have focused on only “behavioral intentions” as dependent variable. However, in the postulated model (Figure 1), “behavioral readiness” can also play the role of a dependent variable. Thereby, we formulated two additional hypotheses related to the relationships between “behavioral readiness” and “attitude” (H4) and “subjective norms” (H5). On one hand, we argued that the more favorable and positive is actor’s attitude toward a behavior, the greater should be the actor’s behavioral readiness to perform that behavior. On the other hand, we contended that the more favorable and positive are subjective norms about a given behavior, the greater should be an actor’s behavioral readiness to perform the behavior. This argument leads to the following two hypotheses:

Hypothesis 4: Attitude toward electronic commerce degree program offering will be related to a school’s behavioral readiness to offer ECDP.

Hypothesis 5: Subjective norms about electronic commerce degree program offering will be related to a school’s behavioral readiness to offer ECDP.

METHODOLOGY

We collected data from a random sample of American business schools’ faculty members. A web-based survey was designed and posted on our university secure server. On the first page of the web-based survey, respondents could read detailed information about the survey and the study. This page includes a LINK to the actual questionnaire and a second LINK to a copy of the approval of the Institutional Review Board (IRB). After reading all the information provided on the first page of the web-based survey, potential respondents could decide to proceed to complete the questionnaire or to exit. During the first three weeks of September, 2006, we sent 1156 email solicitations to potential respondents, of which 110 were returned undelivered. Out of the 1046 successfully delivered solicitations, 258 potential respondents actually visited the survey web pages (or 22.32% of the 1156 emails sent). One hundred and five visitors (105) or 40.70% of those who visited the survey web page but only 9.1% of the targeted population of 1146 potential respondents.
ANALYSIS AND RESULTS

Measurement Model

As shown on Figure 1, four constructs were measured in this study: behavioral intention, behavioral readiness, attitude toward behavior and subjective norms about behavior. The reliabilities of the study’s constructs are above the 0.70 threshold (Nunnally, 1978), except for only one of the four components of “behavioral readiness.” These construct reliabilities indicate that there is a high level of internal consistency among the items that comprise the study’s constructs. Discriminant validity was assessed using a more recent guideline provided by Ahire and Devaraj (2001) and an alternative test proposed by Fornell and Larcker (1981). According Ahire and Devaraj (2001), discriminant validity can be tested by using the Cronbach’s Alpha and the average inter-score correlation for each construct. Discriminant validity is then assumed when the Cronbach’s Alpha is greater than the average inter-score correlation. In this study, all the Cronbach’s Alpha coefficients were greater than the average inter-correlation coefficients, suggesting good discriminant validity for the constructs. Alternatively, all the average variances extracted (AVE) were greater than the variance shared between each construct and other construct in the model (Fornell and Larcker, 1981): the lowest AVE was greater than the 0.695, the average variance between each construct and other constructs in the model. The means, standard deviations and correlation matrix of the study’s variables are reported in Table 1.

<table>
<thead>
<tr>
<th></th>
<th>Means</th>
<th>Standard Deviation</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Behavioral Intention</td>
<td>4.71</td>
<td>1.87</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Behavioral Readiness</td>
<td>23.12</td>
<td>8.89</td>
<td>0.538**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Attitude</td>
<td>4.88</td>
<td>1.46</td>
<td>0.539**</td>
<td>0.531**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4. Subjective Norms</td>
<td>3.98</td>
<td>1.65</td>
<td>0.792**</td>
<td>0.508**</td>
<td>0.589**</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: ** significant at 0.000 level

Table 1: Construct Means, Standard Deviations, and Inter-correlations

In addition to discriminant validity, we tested convergent validity and scales uni-dimensionality using established criteria in the literature. To test convergent validity, we used a guideline suggested by Cannon and Perreault (1999). According to that guideline, convergent validity is assumed when the average variance extracted for each reflective construct is above 0.50 and the measurement paths are significant. For this study, the lowest average variance extracted is 0.61 well above the 0.50 threshold and all the measurement paths, except one, are significant. Thus, convergent validity was assumed. We assessed scales’ uni-dimensionality using the strength of item loading (Carmines and Zeller, 1979). Carmines and Zeller (1979) suggested that the items’ loadings should exceed 0.30. In this study, the lowest item loading is 0.664. Construct validity was assumed given discriminant validity, uni-dimensionality and eigen-values well above one. Based on the measurement results, we conclude that the measurement model was acceptable and could be reasonably relied upon to test the structural model and ultimately the hypotheses.
Structural Model Results

Behavioral readiness alone has explained 35% (adjusted R square) of variance in behavioral intention. Moreover, together with “attitude toward behavior” and “subjective norms about behavior”, the variance explained goes up to 64.3%. It should be pointed out that using “attitude” and “subjective norms”, the variance explained is 62.8%. Table 4 presents comparative results for the TRA and the ETRA. Together these results indicate a slight incremental contribution of the ETRA.

\[
\begin{align*}
\beta_{attd} & = 0.05 \\
\gamma_{atd} & = 0.35^* \\
\beta_{bra} & = 0.17^* \\
\gamma_{sn} & = 0.30^* \\
\beta_{sn} & = 0.68^{**}
\end{align*}
\]

Note: * significant at 0.03 level
** Significant at 0.00 level.

Figure 2: Path Diagram Showing Estimates and Amount of Variances Explained

DISCUSSIONS

Reasonable fit was found for the postulated ETRA. The fit statistics were above the 0.90 threshold (Normed Fit Index = 0.973; Comparative Fit Index = 0.987; Incremental Fit Index = 0.9874, Relative Fit Index = 0.9465, and Goodness of Fit Index = 0.9393). Though the Root Mean Square Error of Approximation (RMSEA) was little high, it was within the 0.05 – 0.10 range, suggesting a “reasonable model fit” (Browne and Cudeck, 1992). Given the reasonable model fit, we reasonably relied on the model to discuss the results for hypotheses. All hypotheses, except one, were supported (Figure 2). The first hypothesis postulated a significant path between school’s attitude toward ECDP and school’s behavioral intention to offer ECDP. Although contrary to the theory, this result might be suggesting that “attitude toward behavior” might not carry very significant weight in the context of academic institutions’ behavioral intentions to offer or not to offer innovative academic programs, such as ECDP. The second hypothesis, which stated that “Subjective norms about ECDP would be related to a school’s behavioral intention to offer ECDP, was largely supported. A possible explanation for this result might be that for academic institutions, “subjective norms” are important for academic institutions’ behavioral intentions. In addition to the second hypothesis, the third was supported as well, although to a lesser extent. The third hypothesis postulated: “A school’s behavioral readiness for an electronic commerce degree program offering would be related to the school’s behavioral intention to offer ECDP.” The support for this hypothesis might be suggesting that “behavioral readiness” constitutes an important factor to consider when trying to understand and
explain the formation of academic organizations’ “behavioral intentions” to offer or not to offer new programs. Moreover and interestingly, “behavioral readiness” was significantly determined by both “attitude toward behavior” and “subjective norms about behavior” (Figure 2), suggesting that the new variable mediates the relationship between “attitude” and “behavioral intention.”

CONCLUSIONS

The Theory of Reasoned Action is one of the earliest innovation diffusion theories. However, it suffers several insufficiencies among which the issue of level of analysis. This observation has led us to propose an alternative model: the Extended Theory of Reasoned Action. The empirical test, conducted on a limited sample of business schools’ faculty members, revealed that the proposed model has some incremental contribution over the initial TRA. Future studies should therefore investigate the prospects of the proposed model, by focusing particularly on the mediating construct “behavioral readiness.” Behavioral readiness is a pre-behavior state of mind reflecting an actor’s readiness to perform or not to perform a given behavior. It has the potential to help us better understand behavioral intentions as well as actual behaviors.

REFERENCES


