

Factors that Influence Strategic Value in E-Commerce, Among Small Business

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ABSTRACT

Small businesses consider the need for customers to return home as the greatest challenge of all after Hurricane Katrina. It is because small businesses rely so much on the local economy. E-commerce is a phenomenon that is emerging rapidly in the business world. Despite the many potential advantages and benefits of e-commerce, small businesses do not see the strategic value of e-commerce. The adoption of e-commerce by small business has been limited. This study examined the factors that influence strategic value of e-commerce in small businesses in New Orleans. The results showed that organization compatibility, entrepreneurial mindset, and industry competitiveness factors influence perception of perceived strategic value of e-commerce.

INTRODUCTION

Post-Hurricane Katrina has left some serious implications for small businesses in New Orleans. Small businesses in New Orleans have been one of the biggest casualties of Hurricane Katrina. The effects of the devastation are obvious: the instant complete loss of markets, but the greatest challenge by far, however, is the need for displaced residents to return. Because small businesses rely so much on the local economy, they have not been able to recover at the same rate as larger businesses and corporations. Hurricane Katrina has made businesses modify the way that they sell, market and produce goods; technology has also called for businesses to transition the way they do business (Bring New Orleans Back, 2008).

Small businesses in New Orleans face a number of barriers in the post-Katrina era. Most cite that the reduced rate of tourism to the city and inability to reach consumers outside the bayou as the major disadvantage to small business. This is where e-commerce can be an effective tool in rebuilding the small businesses of New Orleans. E-commerce is a technology that can be implemented and its benefits can aid these small businesses in New Orleans. E-commerce is a phenomenon that is emerging rapidly between businesses all over the world. E-commerce describes the process of buying, selling, or exchanging products, services, or information via computer networks, including the Internet (Chaffey, 2004 & Turban et. al, 2006). The benefits of e-commerce to an organization include access to new customers and market globally; the creation of new selling channels and reduced costs of doing business (Chaffey 2004, Saloner & Spence 2002, Chaudhury & Kuilboer 2002, Turban et. al 2006).

Despite the benefits of e-commerce, the adoption of e-commerce by small businesses has remained limited (Gallup, 2008). Although there have only been a few have dealt with the adoption of e-commerce in small businesses (e.g., Grandon & Pearson, 2003; Mirchandani & Motwani, 2001), small business in New Orleans represent a unique case in e-commerce adoption among small business. The purpose of this research is to identify the factors that influence perceived strategic value in e-commerce among small businesses in New Orleans.

LITERATURE REVIEW

Technology Acceptance Model (TAM) has been widely used to explain adoption of e-commerce. TAM is defined by Davis (1989) as “an information systems theory that models how users come to accept and use a technology”. The TAM proposes that perceived ease of use (PEOU) and perceived usefulness (PU) influencing factors for technology acceptance. TAM has provided a base for explaining adoption behavior in various contexts (Venkatesh, et.al., 2003).

Another popular theory that has been used to explain technology adoption is diffusion of innovation. According to Rogers (2003), the study of the diffusion of innovation is the study of how, why, and at what rate new ideas and technology spread through cultures. Diffusion of Innovation theory proposes that decision makers (i.e. management & owners) within a business or organization will evaluate an innovation’s characteristics such as relative advantage, compatibility, trial ability and observability and their perceptions of these characteristics will determine whether an organization or business will adopt this innovation.

Perception of Strategic Value in E-commerce

Strategic value can be determined by a summation of perceived benefits minus a summation of perceived costs over a period of time. The benefits of e-commerce implementation include, but are not limited to the increased number of new customers, better service to loyal customers, and increase profit and market share. Hardware, software, and development are all associated with the cost of e-commerce implementation. Amit & Zott (2001) study focused on the strategic value of e-commerce, in which they developed a value-driver’s model which included four factors that were found to be sources of value creation of e-commerce: transaction efficiency, complementarities, lock-in, and novelty. The paper agrees that strategic value of an e-commerce is a major precedent of the adoption.

Organizational Compatibility

Compatibility of e-commerce with the work of the company has been frequently mentioned as a factor that influences technology adoption (Grandon & Pearson, 2004; Mirchandani & Motwani, 2001; Zhu, Kramer & Xu, 2002). For example, the study by Grandon & Pearson (2004) found that compatibility with the company's work environment were significant factors that differentiated between adopters and non-adopters of e-commerce

Entrepreneurial Mindset

Entrepreneurial mindset is described by a conglomerate of meta-physical dispositions, also known as entrepreneurial spirit, meant to cause the innovative and energetic practice to identify or create an opportunity and take action aimed at realizing it. Owners/managers have a strong influence when it comes to an organization adopting e-commerce (Seyal & Rahman, 2003).

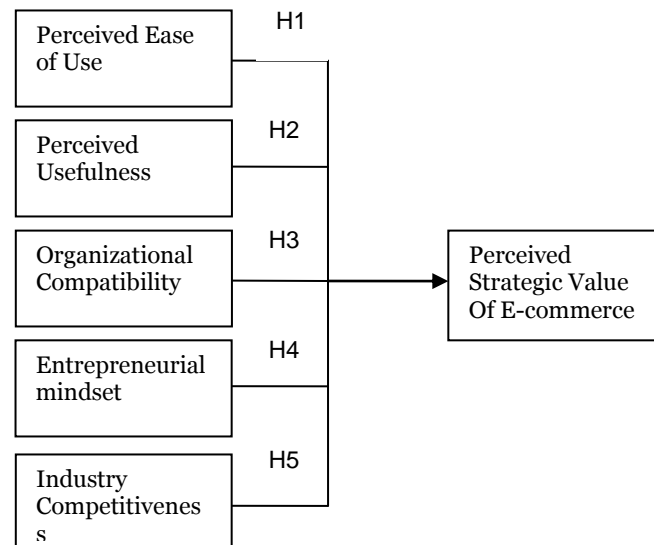


Figure 1: Model for e-Commerce Adoption for Small Businesses in New Orleans

Industry Competitiveness

One of the factors that are frequently considered in technology adoption literature is external factors. External factors such as degree of competitiveness within the industry have been recognized as a force for e-commerce adoption (Corbitt & Tanasankit, 2002; Lertwongsatien & Wongpinunwatana, 2003). Businesses adopt e-commerce not only to achieve best practices, gain operational efficiencies, to obtain strategic value, but also cope with competitive forces within the industry.

Base on the review of literature, we propose the a model of e-commerce adoption (Figure 1) that suggests that the decision to adopt e-commerce is primarily determined by the

owners/managers perception of how much strategic value this innovation can bring to the organization. In this model, perceived strategic value is influenced by five factors: entrepreneurial mindset, organizational compatibility, industry competitiveness, owners/managers perception of customer's ease of use, and owner's/manager's perceived usefulness for the customer.

Hypotheses

- H1: Perceived ease of use has a positive effect on perceived strategic value of e-commerce adoption among small businesses in New Orleans.
- H2: Perceived usefulness has a positive effect on perceived strategic value of e-commerce adoption among small businesses in New Orleans.
- H3: Organizational Compatibility has a positive effect on perceived strategic value of e-commerce.
- H4: Entrepreneurial mindset has a positive effect on perceived strategic value of e-commerce.
- H5: Industry competitiveness factors has a positive effect on perceived strategic value of e-commerce adoption in small businesses in New Orleans

RESEARCH METHOD AND DATA COLLECTION

Instrument

The instrument contained two filter questions to assure that the businesses were from New Orleans and that it was a small business. Four of the demographic questions were about the participants, which include gender, age, education, familiarity with e-commerce. There were also four general questions about the organization. The questions to measure the constructs included were adapted or modified from the previous research.

Subjects

For this study, owners/managers of small businesses were targeted throughout New Orleans. According to Seyal & Rahman (2003) study, small businesses characteristics include small management teams and a strong owner influence. Different agencies and businesses use different criteria to determine whether a business is small such as the number of employees, annual income earned and dominance in their industry. There is also many discrepancies as to employee size (size standard), depending on the sources this number can fall anywhere between 50 to 500 employees. For the purpose of this study, the number of employees was the only determining factor. Firms which employed 100 or less individuals were considered small.

Data Collection

Data was gathered by utilizing an Internet based survey that was created at www.freeonlinesurveys.com. The data collection process was handled in one phase, which

consists of 882 e-mail addresses of businesses in New Orleans being selected from a local telephone directory and The Yellow Pages. An e-mail was sent to the addresses containing the link to the survey; but a large number of the e-mail addresses were returned due to delivery failure. Four hundred and eighty-six of the 882 e-mail addresses were delivered successfully. Two additional e-mail reminders were sent to the selected businesses asking them to complete the survey for the research.

DATA ANALYSIS

Characteristics of the Samples

There were 198 respondents in this study; 66 indicated that they were e-commerce adopters and 132 indicated that they were not adopters (see Table 1). Of the 198 respondents, 60.6 percent are male, 51 percent are in the age range of 30-39, and 55.6 percent hold a bachelor's degree. There are similarities between adopters and non-adopters: 40.9 percent of the adopters and 34.8% of the non-adopters are in the retail business. Sixty seven percent of the total respondents indicate that their PCs are used for clerical work. All of the adopters have a website, and 59.1 percent of those websites are developed and maintained in-house. Forty-one percent of the non-adopters also have a website; however, 31.1 percent of those websites are outsourced. Most of the respondents (86.4 percent) overall indicate they are very familiar or somewhat familiar with e-commerce.

Demographic Questions	Adopters N=66		Non-Adopters N=132		All N=198	
	No.	%	No.	%	No.	%
Gender						
Male	45	68.2	75	56.8	120	60.6
Female	21	31.8	57	43.2	78	39.4
Age						
20-29	12	18.2	28	21.2	40	20.2
30-39	42	63.6	59	44.7	101	51.0
40-49	12	18.2	33	25	45	22.7
50-59			12	9.1	12	6.1
Education						
High School			19	14.4	19	9.6
Technical College	3	4.5	56	42.4	59	29.8
4-Year College	56	84.8	54	40.9	110	55.6
Masters Degree	7	10.6	3	2.3	10	5.1
Type of Business						
Manufacturing	5	7.6	2	1.5	7	3.5
Wholesale	8	12.1	1	.8	9	4.5
Retail	27	40.9	27	20.5	54	27.3
Construction	5	7.6	46	34.8	51	25.8
Service	19	28.8	52	39.4	71	35.9
Other	2	3.0	4	3	6	3

PC use						
Clerical Support	32	48.5	101	76.5	133	67.2
Process/production support	18	27.3	26	19.7	44	22.2
Decision making support	13	19.7	5	3.8	18	9.1
Strategic support	3	4.5			3	1.5
Website						
Have	66	100.	55	41.7	121	61.1
No		0	77	58.3	77	38.9
Website Done						
In-house	39	59.1	14	10.6	33	27.3
Out source	27	40.9	41	31.1	88	72.7
Familiar with e-commerce						
Very familiar					34	17.2
Somewhat familiar					137	69.2
Not familiar					27	13.6

Table 1: Characteristics of the Sample

RESULTS

As shown in table 2 below, the coefficient value for both EM and OC is above 2 and their significance value is smaller than 0.05 making the coefficients significant. IC has a coefficient value of 1.43, but its significance value is below 0.05 making it significant.

Regression results indicate three significant predictors (Organizational Compatibility, Entrepreneurial Mindset, and Industry Competitiveness) with R² of .23. Table 3 shows the results of the factors supported by small businesses in New Orleans. This study proposed a research model that identified factors that affect perceived strategic value of e-commerce among small businesses in New Orleans. According to the findings, Organization Compatibility, Entrepreneurial Mindset, and Industry Competitiveness were significant predictors of perceived strategic value of e-commerce among small businesses in New Orleans, as expected. Surprisingly, perceived ease of use and perceived usefulness were not predictors of perceived strategic value of e-commerce among small businesses in New Orleans.

Constructs	Coefficient	t value	Significance Level
Perceived ease of use (PEOU)	-.034	-.523	.601
Perceived usefulness (PU)	-.030	-.436	.663
Organizational Compatibility (OC)	.273	3.719	.000
Entrepreneurial Mindset (EM)	.222	3.337	.001
Industry Competitiveness (IC)	.143	1.996	.047

Table 2: Significance

Hypotheses	
H1: Perceived ease of use has a positive effect on perceived strategic value of e-commerce.	Unsupported
H2: Perceived usefulness has a positive effect on perceived strategic value of e-commerce.	Unsupported
H3: Organizational Compatibility has a positive effect on perceived strategic value of e-commerce.	Supported
H4: Entrepreneurial Mindset has a positive effect on perceived strategic value of e-commerce.	Supported
H5: Industry Competitiveness have a positive effect on perceived strategic value of e-commerce.	Supported

Table 3 Hypotheses Testing

Organizational Compatibility was found to be the most significant predictor of perceived strategic value of e-commerce among small businesses in New Orleans. To implement e-commerce a business has to be compatible in many areas, which include: internet infrastructure (computers and software), financial support (money), personnel support (training) and logistics (physical fulfillment) in order to support e-commerce activities.

Entrepreneurial Mindset was the second most significant predictor of perceived strategic value of e-commerce among small businesses in New Orleans. Owners/managers believed that their organization was entrepreneurial, that their organization was well developed and that their organization was willing to take or accept risk. That is, owners/managers believed that they have an entrepreneurial mindset and that it has a positive effect on perceived strategic value of e-commerce.

Industry competitiveness was the least significant of the three factors that influenced perceived strategic value of e-commerce among small businesses in New Orleans. This suggests that owners/managers believe that a competitive environment, in their respected industry will make them perceive the value of e-commerce. That is, small businesses in competitive environments will perceive strategic value of e-commerce.

It was surprising that Perceived Ease of Use and Perceived Usefulness were not significant. It is contradicting that many research showed significant effects of these two factors in technology adoption in various situations.

DISCUSSION AND CONCLUSION

This study investigated factors that influence e-commerce adoption among small businesses in New Orleans. A hundred percent of the adopters were either very familiar or somewhat familiar with e-commerce. Furthermore, over ninety-five percent of the adopters indicated their level of education to be at least four years of college or higher. Of the sixty-six adopters, over forty percent were in the retail industry. Overall, it has been shown that organization compatibility, entrepreneurial Mindset, and industry competitiveness influence the owners/managers perception of perceived strategic value of e-commerce. In order to promote e-commerce, in the city of New Orleans, agencies need to emphasize these factors. Only one-third of the owners/managers that responded to the survey were adopters.

This study has limitations, like all studies. With survey instruments, there is the possibility of ambiguity. Items in the survey may be misread or misunderstood and provide limited information. The sample size could be a limitation. A larger sample may provide more diverse or convincing results. Also this studied is limited to testing only five independent variables. While this study focuses on five variables, there are other variables that can be tested to see if it has a positive effect on perceived strategic value of e-commerce.

Future Research

Future research could expand on this study. A replication could be done in another city that has had similar problems. And a comparison could be done. Future research could examine and focus on other variables such as; technology implications, logistical implications, the level of is education of the owners/managers, the influence of consultants on the decision to implement electronic commerce, and the role the government plays in e-commerce implementation. Finally, it would be also interesting to examine the impact of the variables on the extent of adoption of electronic commerce.

REFERENCES

- Amit, R., and Zott, C. (2001) Value Creation in E-business. *Strategic Management Journal*, 22, 493-520.
- Bring New Orleans Back Commission. www.bringneworleansback.org, 2008
- Chaffey, D. (2004). *E-Business and E-Commerce Management* (2nd Ed.). England: Pearson Education Limited.
- Chadhury, A. and Kuilboer, J. *E-business and Infrastructure*, McGraw-Hill, Boston, MA 2002
- Corbitt, B., and Thanasankit, T. (2002) Acceptance and Leadership-Hegemonies of E-Commerce Policy Perspectives. *Prometheus*, 20(1), 39-57.
- Davis, F. (1989) Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology, *MIS Quarterly*, September, 319-340
- Gallup Government Group, <http://www.gallup.com>. Retrieved January 2008.
- Grandon, E., and Pearson, J. (2003) Strategic Value and Adoption of Electronic Commerce: An Empirical Study of Chilean Small and Medium Businesses. *Journal of Global Information Technology Management*, 6(3), 22-43.
- Grandon, E., and Pearson, J. (2004) Electronic Commerce Adoption: An Empirical Study of Small and Medium US Businesses. *Information and Management*, 42, 197-216.
- Lertwongsatien, C., and Wongpinunwatana, N. (2003) E-Commerce Adoption in Thailand: An Empirical Study of Small and Medium Enterprises (SMEs). *Journal of Global Information Technology Management*, 6(3) 67-83.
- Mirchandani, D., and Motwani, J. (2001) Understanding Small Business Electronic Commerce Adoption: An Empirical Analysis. *Journal of Computer Information Systems*, Spring 2001, 70-73
- Rogers, E. M. (2003). *Diffusion of Innovations, Fifth Edition*. New York, NY: Free Press
- Seyal, A., and Noah Abd Rahman, M. (2003) A Preliminary Investigation of E-Commerce Adoption in Small & Medium Enterprises in Brunei. *Journal of Global Information Technology Management*, 6(2), 6-26.
- Small Business Research Board (2008) *Nearly 30% of Small Businesses Expect Internet Sales to Increase Next 12 – 24 Months According to Latest SBRB Study*. (<http://www.ipasbrb.com/index.php/US-Small-Business-Issues/-Nearly-30-of-Small-Businesses-Expect-Internet-Sales-to-Increase.html>)

- Saloner, G. and Spence, A. *Creating and Capturing Value, Perspectives and Cases on Electronic Commerce*. New York, NY Wiley 2002.
- Turban, E., Leidner, D., McLean, E., & Wetherbe, J. (2006). *Information Technology for Management: Transforming Organizations in the Digital Economy*. (5th ed.). United States of America: John Wiley & Sons, Inc.
- Venkatesh, V., Morris, M., Davis, G., and Davis, F. (2003) User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27(3), 425-478.
- Zhu, K., Kraemer, K., and Xu, S. (2002) A Cross-country Study of Electronic Business Adoption using the Technology-organization-environment Framework. *Proceedings of the Twenty-third International Conference on Information System*, December 15-18, Barcelona, Spain.