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Role of Perceived Usefulness, Organisational Readiness, Customer Pressure, Competitive Pressure in Adaption of E-Commerce in Indian SMEs

Author

Prof (Dr.) Indrajit Sinha

Faculty of Bharatiya Vidya Bhavan Institute of Management Science

Email: indrajitinha25@gmail.com

ABSTRACT

With advancement of hardware, software and internet/intranet and chunk of population adopting to technology based E-business and is rapidly growing in India particularly in service sector. It has become necessary for small and medium enterprises to adopt e-business to have competitive advantages. However it is observed that companies in the same industry implement e-business at different pace. This paper likely to focus on why some of the SME do and other group do not want adopt e-commerce. Depiction on several previous research (environmental & organisational factors, Porter's strategies, technology acceptance) has led to determine the impact of different predictors namely Organizational Readiness, Competitive Pressure, Perceived Usefulness, Perceived Customer Acceptance on adaptation e-commerce by SMEs in Indian business environment. A model is designed using these predictors and was empirically tested using survey and interview data from SMEs in India. The study yield evidence that Organizational Readiness, Competitive Pressure, Perceived Usefulness, Perceived Customer Pressure were found to be affecting E-business adoption by Indian SMEs. Implication for SMEs and for further research are discussed.

Keywords: *Organizational Readiness, Competitive Pressure, Perceived Usefulness, Perceived Customer Pressure, SME, Organisation Attitude.*

1. Introduction

The decreasing cost of technology has encouraged organization to seek new ways to cooperate with its customer and other supply chain members. Seeking new method has led to E-business which is basically business done over internet/ intranet using computer based application to manage supply chain processes, such as order booking, delivery shipment payment and customer relationships. E-Business channels allow businesses to get to the customer faster, with more velocity, and more value (Budhwani, 2001). As stated Eurostat, Luxembourg, 2004, E-commerce as transactions conducted over Internet Protocol-based (IP) networks or over other computer mediated net-works e.g. EDI if not carried

out via IP. Though e-business is making an clear inroads in Indian business but it is mainly being adopted by big business organization. Small and Medium enterprise (SME) plays a very important role in Indian economy with forty percent output of the country. Presently there are over 11 million SME units in India that produces more than 8000 products. Besides there are nearly few thousands service sector in SMEs. Most of the country's economics depend mostly on the role of SMEs in supporting the national economy in different countries. However growth of business of SME would depend on what approaches management on adaptation of e-business. Despite the fast changing scene of on-line competition, many essential issues regarding the adoption of e-business remain

uncertain. According to Beach (2004), the above research raises the question of whether the businesses that successfully adopted EC applications did so because of the influence of their strategic goals or from other factors.

There are lot of advantages and benefits by implementing E-business and these benefits are not only for large firms; small and medium sized enterprises (SMEs) can also benefit from e-business [1]. To become global player markets, EC has become vital (Maguire et al., 2001, p.1) and encompasses activities such as electronic data interchange, having a Web site that is linked with key business processes, and capabilities to buy online (European Commission, 1998; Watson et al., 2000; Reedy et al., 2000; Turban et al., 2000; and Fillis et al., 2004).

The objective of this paper is to understand why some Indian SMEs firms in the specially services industry have been slow to embrace EC activities.

2. Literature Review

To know why Indian SME should adopt E-Commerce we need go through several work on adoption of technology. One of the pioneer work that has been carried out in this area is Technology Acceptance model or TAM (Davis et al. 1989). TAM model states that in order adopt a technology, user assess its usefulness and ease with which it can be used. Amit, R *et al.* observes that in e-business new value can be created by the ways in which transactions are enabled.

Similarly there are many research paper have examined the use of new innovative technologies in SMEs (Berthon, P 1999 et al, Costello, G et al., 1998; Cragg and King, 1993; Flanagan, A.J., 2000, Dos Santos and Peffers, 1998; Fillis, 2004; Ramsey et al., 2003, 2004). John Child stated that operating effectiveness does depends on scale of operation, technology. Iacovou et al. studied factors influencing the adoption of electronic data interchange (EDI) by seven SMEs in different

industries; they included perceived benefits, organizational readiness, and external pressure. G. Premkumar, *et al.* has stated Adoption of new information technologies in rural small business shall be determine by relative advantage, top management support, organizational size, external pressure and competitive pressure.

In view of Chong (2001) there is increasing number of literature dedicated to the analysis of the technical and operational aspects of E Com, there is little empirical research on topics relating to the factors that lead to the successful adoption of this emerging technological innovation and business practice. Organizational-level factors are the most often studied antecedents of innovation adoption (Damanpour, F, 1991). With decreasing cost and advancement of internet technology IS integration is possible without developing strong non IS linkage (Wonyoung Lee et al.)

2.1 Perceived usefulness

Perceived usefulness explains the user's perception to the extent that the system will improve the user's place of work performance. The significance of perceived usefulness has been widely recognized in the field of e-governance and e-banking (Lemuria Carter & France Bélanger 2005, Guriting and Ndubisi, 2006; Jaruwachirathanakul and Fink, 2005; Polatoglu and Ekin, 2001; Liao and Cheung, 2002). According to them usefulness is the subjective probability that using the technology would improve the way a user could complete their job.

Pikkarainen et al. (2004) applied TAM in Finland and they observed that perceived usefulness as a determinant of actual behavior which encouraged the user of the banking service to use more modern and userfriendly e-banking and it gives them greater autonomy in performing banking transactions, in cataloguing on financial advices, and in purchasing other financial products

A rational adoption decision in an organization would involve evaluating the advantages of the new technology. These communication technologies provide many benefits to the adopters in terms of reduced turnaround time, better customer service, reduced costs and timely information availability for decision making.

Research question 1: Does perceived usefulness have positive effect on E-commerce adaptation?

Hypothesis 1: Perceived usefulness has positive effect on E-commerce.

2.2 Customers Pressure

Customer requirement would make an organization move towards adoption of E-commerce. Ateş et al. (2011), for instance, propose that customers pressure lead companies towards reactive and proactive investments necessary to reduce the negative externalities produced along the supply chain. However some authors fail in identifying significant relationships between customers pressure and companies' development of environmental leadership programs and supply chain oriented practices (Buysse and Verbeke, 2003; Zhu et al., 2007). This research provides further insights on the role that customer pressure has in driving implementation E-commerce in an organization.

Research question 2: Does customers pressure have positive effect on E-commerce adaptation?

Hypothesis 2: Customers Pressure has positive effect on E-commerce adaptation.

2.3 Competitive Pressure

Competitive pressure, defined as the pressure that arises from the threat of losing competitive advantage, forces firms to search for alternatives to their current strategies Abrahamson, E., and Bartner, L. R. In addition, based on the strategic literature and MIS research, Croteau and Li (2003),

Steinfeld et al. (2002), Foster et al. (2000) believed that competitive pressure from a given industry affected the rate of EC adoption.

Research question 3: Does Competitive pressure have positive effect on E-commerce adaptation?

Hypothesis 3: Competitive pressure has positive effect on E-commerce adaptation.

2.4 Organizational readiness

Organizational readiness was assessed by including two items about the financial and technological resources that the company may have available as well as factors dealing with the compatibility and consistency of e-commerce with firm's culture, values, and preferred work practices (existing technology infrastructure; and top management's enthusiasm to adopt e-commerce). Such items were found relevant in other research [R.C. Beatty et al., W.W. Chin, A. Gopal, G. Premkumar, M. Potter,, J.Y.L. Thong,].

Research question 4: Does Organizational readiness have positive effect on E-commerce adaptation?

Hypothesis 4: Organizational readiness has positive effect on E-commerce.

2.5 Organisational attitude

Mental states of the management, developed through experience, which are always ready to exert an active influence on an management's response to any conditions or circumstances to which the they have been directed. Many empirical studies related to diffusion of technological innovations have expanded the use of the TAM model to include attitudes as defined by the Theory of Reasoned Action (Davis et al., 1989; Jayawardhena and Foley,2000).TAM model explains ease of use and perceived usefulness as the major factors influencing attitudes toward use, which, in turn, affected intentions to use. In the electronic

commerce context, management's attitude is assorted in terms of perceptions regarding perceived usefulness, its technical readiness, customer pressure and competitive pressure,. Understanding the determinants of organisational's attitude, it is argued that this attitude has a strong, direct, and positive effect on organisational's intentions to actually use the new technology or system. With this idea the researchers expect that customer organisational's affects the acceptance of electronic commerce

Research question 5: Does organisational's attitude have positive effect on adaptation of e-commerce

Hypothesis 5: organisational's attitude has positive effect on organisational's adaptation of e-commerce

3. Research methodology

Measurement

The variables identified in the research model were measured using multi-item indicators that aimed to capture the underlying theoretical domain of the construct. Most of the items were measured using a five point Likert-type scale ranging from strongly disagree to strongly agree. A single item was used to determine if the respondents adopted each one of the four communications technologies Ð online data access, e-mail, Internet access and EDI.

Data have been collected from 150 set of questionnaires distributed, 76 customers responded to the survey resulted in 72% response rate. However, after data screening and data cleaning process, only 89 responses can be used for further analysis. Among the respondents 72.39% respondents were male and 27.61% were female and the average age of the respondents was 36 years.

Table 1 Summary of theoretical models

Model	Hypothetical Model
Model 1	Paths from Competitive pressure , Organizational Readiness,, Perceived Customer Acceptance, perceived usefulness to Ecom adoption.
Model 2	Paths from Competitive pressure , Organizational Readiness,, Perceived Customer Acceptance, perceived usefulness to organisation attitude, and organisation attitude to Ecom adoption

4. Data Analysis

Table 2 Constructs and their reliabilities, mean and s.d.

Construct	No. Of Items	Alpha	M	SD	N
Perceived Usefulness	5	0.72	4.15	0.96	124
Competitive Pressure	4	0.78	4.4	1.06	124
Organizational Readiness	3	0.76	4.3	1.01	124
Perceived Customer Acceptance	4	0.75	4.6	0.97	124
Organisation attitude	3	0.79	4.3	0.90	124
Ecom adoption	3	0.72	4.6	1.14	124

Table 3. Correlation matrix for perceived usefulness, Competitive Pressure Customer Pressure, Organizational Readiness Ecom adoption

Construct	PUSF	COMPR	OREADI	PCUSAC	ORGATT	ECADOP
PUSF	----	0.21 *	0.33**	0.15*	0.33**	0.25*
COMPR		----	0.26*	0.37**	0.18*	0.26**
OREADI			----	0.22**	0.32**	0.13**
PCUSAC				----	0.27**	0.29*
ORGATT					----	0.41**
ECADOP						----

Note: *p < .05, **p < .01

Confirmatory factor analyses

For judging the model fit of the two suggested model the Comparative Fit Index (CFI), Goodness of Fit Index (GFI; Hair et al., 2003), Normed Fit Index (NFI), and Root Mean Square Error of Approximation (RMSEA; Steiger, 1990) were used.

Joreskog and Sorbom, 1993; Kline, 1998) model fit was assessed by several indices. The accepted thresholds for these indices χ^2/df ratio should be less than 3; the values of GFI, RFI, NFI, and CFI should be greater than 0.90; and RMSEA is recommended to be up to 0.05, and acceptable up to 0.08 (Gefen et al., 2000).

Table 4. Summary of Model fitment Assessment

	χ^2	df	χ^2/df	CFI	NFI	GFI	RMSEA
RECOMMENDED FIT CRITERIA	P>.05		Between 3 & 1	Over 0.90	Over 0.90	Over 0.90	<0.10
MODEL 1	177.4 P>.000	4	59	0.545	0.564	0.91	0.510
MODEL 2	3 P>.02	2	1.5	0.93	0.96	0.99	0.041

Table 4 represents the results of measurement models to test the hypothesis with regard to model paths. The initial model with values of χ^2/df , CFI, NFI, RMSE are more than recommended value, therefore it did not support the fitness of the model. This model was then compared with final model where values of the above parameters are within recommended values and the data fits the model well. The other results also supported the fitness.

Considering the pattern of significance for the parameter estimates within the Model 1, all the paths were found to be significant in hypothesized directions. In case of model 2, perceived usefulness, perceived ease of use, and security and privacy were found to be significantly and positively related to customer adaptation. No significant relationships were found between perceived ease of use and customer adaptation. All the other variables were significantly related to customer adaptation as hypothesized direction

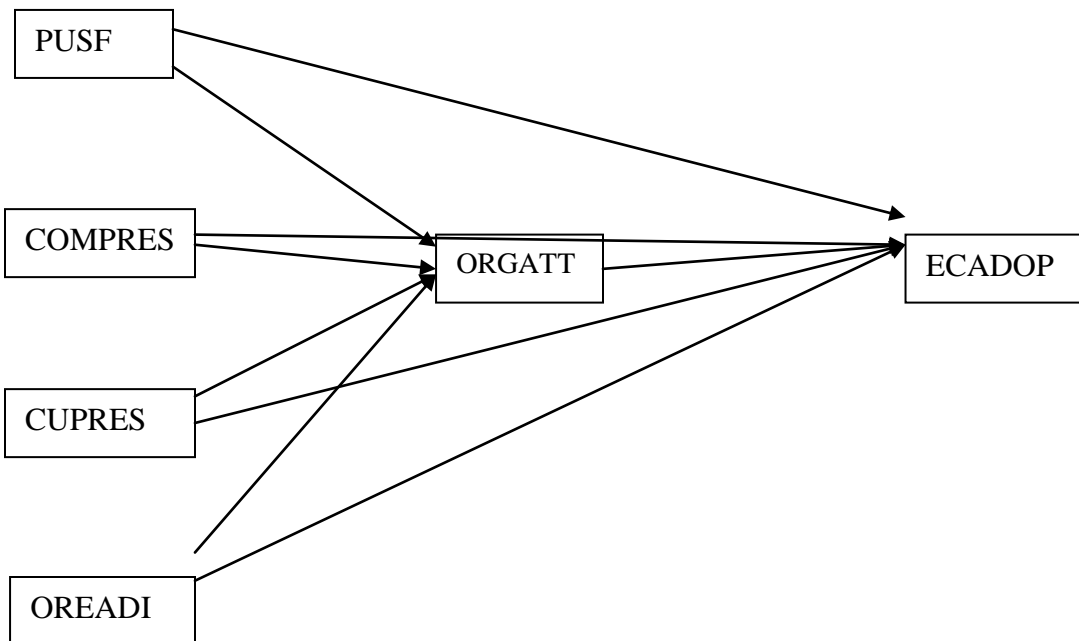
Table 5 Standardized Path Coefficient (β) of the model

Path	Estimated β	P	Support
PUSF \longrightarrow ORGATT	0.651	0.001	YES
COMPRES \longrightarrow ORGATT	0.264	0.002	YES
OREADI \longrightarrow ORGATT	0.544	0.005	YES
CUPRES \longrightarrow ORGATT	0.422	0.000	YES
PUSF \longrightarrow ECADOP	0.451	0.001	YES
COMPRES \longrightarrow ECADOP	0.564	0.004	YES
OREADI \longrightarrow ECADOP	0.454	0.02	YES
CUPRES \longrightarrow ECADOP	0.432	0.011	YES
ORGATT \longrightarrow ECADOP	0.522	0.025	YES

Path Analysis

Since significance for all predictor estimates within the Model $P < 0.05$, all the paths were found to be significant in hypothesized directions. In the

hypothesized model Perceived usefulness, Competitive Pressure, Organizational Readiness, and Customer Pressure were found to be significantly and positively related to Ecom adoption



Discussion

The present study presents a conceptual framework that considers Competitive pressure, Organizational Readiness, Perceived Customer Pressure, perceived usefulness to Ecom adoption in by small and medium enterprise in India. In general, the results supported most of the considered hypothesized relationships. The findings of this study have implications for developing usable e-

commerce by the SMES in India. Considering the facts benefits that SMEs can receive it is of paramount importance to ensure that Indian SMEs will actually use them. In order to achieve this goal, attention must be given in designing Organizational Readiness, Perceived Customer Pressure, perceived usefulness Competitive pressure. Knowledge of the factors that influence adoption will enable Indian SMEs to develop online E-

commerce services that meet the business needs. The study also highlights the importance of conducting research with a broad diversity of respondents. The findings of this study suggest that in order to attract more Indian SMEs towards E-commerce, it is not going to be sufficient to merely introduce an ecommerce system. But they need to develop the belief of usefulness of the system as well. Moreover, it is of prime importance for Indian SMEs to make organisation ready so that they readily adopt E-commerce. They also must adopt e-commerce in accordance to customer pressure and as well as existing competitive pressure in the market environment.

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