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PERCEPTION AND ADOPTION OF E-COMMERCE IN INDIAN SMEs: A STUDY IN THE STATE OF ORISSA

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ABSTRACT:

Information and communication technology (ICT) has brought about a complete change into every walk of life today with business not being an exception to it. Organisations are increasingly embracing new generation business tools like the e-Commerce and e-Business for attaining their goals. E-Commerce is emerging as a new way of helping business enterprises to compete in the marketplace and thereby contributing to their economic success. In an increasingly competitive and globalised world, SMEs need to compete more effectively to boost domestic economic activities and contribute toward increasing export earnings. SMEs also continue to play an important role in increasing employment and thus contributing to poverty reduction on a sustainable basis. With spread of technology and infrastructure, rural businesses will be the biggest beneficiaries of e-Commerce. The Internet can help small enterprises to present themselves to the world. With this backdrop this paper tries to present the e-Commerce scenario in the SMEs of Orissa, the prospect of future growth and the empirical analysis of the factors influencing the adoption of e-Commerce. Through a survey of sample organisations it was found that, although the rate of adoption is not satisfactory, but the entrepreneurs/ managers are quite optimistic regarding the e-Business applications. This paper also tries to state an analytical view of the e-Commerce adoption scenario by revealing the relationship between the factors like Organisational support, Managerial Productivity, Decision Aids and Organisational Readiness, External Pressure, Compatibility, Perceived Ease of Use & perceived Usefulness with the perception of these SMEs owners/managers. Statistical Data Analysis like Multivariate data analysis through Canonical Correlation Analysis (CCA) is done to test empirically the Average scores of variables under perceived strategic value and adoption across present position (in years), Average scores of variables under perceived strategic value and adoption across type of industry to test the significance of these factors. Finally a model is proposed for the adoption of ICT & e-Business technologies, by considering the overall business scenario of the state which includes both the internal as well as the external business environments of the sample organisations.

Keywords: ICT, e-Commerce, SMEs, CCA, Multivariate Analysis, Business Environments.

[I] INTRODUCTION

Use of Internet by SMEs is of particular importance, which stands to gain or lose competitive position as a result of their own action [1]. Several conceptual models have been proposed concerning the adoption of ICT and Internet technology and a growing number of empirical studies shed light on SME practices.

The scope of this paper is to provide a better understanding of the views of the owners / managers regarding the adoption of e-Commerce in the sample organisations. The study also tried to make a comparison of different parameters suggested in Technology Adoption Model (TAM) across the industries. Innovative behaviour, such as adopting Internet technology, should not be seen as a single and discrete event. Rather the adoption decision marks a first step in a continuing commitment to develop new ways of conducting business.

A developing country can become industrialised and modernised if it can extensively apply IT to enhance productivity and international competitiveness, develop e-Commerce and e-Governance applications. An information-based society or knowledge based society is composed of IT products, IT applications in society and economy as a whole. Many countries in Asia are taking advantage of e-Commerce through opening of economies, which is essential for promoting competition and diffusion of Internet technologies. The Internet is boosting efficiency and enhancing market integration in developing countries.

It is against this backdrop the Government of India has long recognised the need for development of IT industry and information infrastructure as these are twin engines for growth of the economy. Deeper penetration of IT applications in the economy, and in the society as a whole can help boost the economy. E-Commerce applications can make it easier for the country to better integrate with the global markets, the e-Marketplace. This has led the government, over the last few years to formulate liberal policies for the development and growth of the IT industry.

There is a huge unexplored market in India and the existing security offerings are scarce and fragmented. SMEs in India are under a great deal of pressure form the bigger customers to create a secure e-biz infrastructure. SMEs are increasingly seeing the benefits arising from e-Commerce as expanded geographical coverage giving them a larger potential market into which they can sell their products and services. Some of the key industries that have high potential for early adoption of e-Commerce are the financial services (stock exchanges and banks), automobiles, retail, travel, IT and manufacturing sectors etc. However for the SME sector, some of the concerns with e-Commerce revolve around fear or eroding their existing customer base and technical issues arising out of lack of computer expertise and the cost of necessary hardware and software. These are some of the preview highlights of a survey conducted by NASSCOM to determine the status of Internet and electronic commerce proliferation in India.

The proliferation of business-to consumer e-Commerce activities has created a need to understand how and why people participate in e-Commerce activities. Through an empirical study of 73 firms (some of them SMEs), Subramanian and Nosek identified three factors that were found to create strategic value in IS: (i) operational support, (ii) managerial productivity, and (iii) strategic decision aid [2]. In each of these factors they utilised different items that were found to have high convergent validity and reliability. Their factors seem to be applicable to e-Commerce.

Lacovou *et al* studied factors influencing the adoption of Electronic Data Interchange (EDI) by seven SMEs in different industries [3]. They included perceived benefits (measured through awareness of both direct and indirect benefits), organisational readiness (financial and technological resources), and external pressure (competitive pressure and its imposition by partners) in their study. The results suggested that a major reason that small firms become EDI-capable is due to external pressure (trading partners). In a similar study, Chwelos *et al* considered the same factors influencing the adoption of EDI in 286 SMEs [4]. They considered the trading partner as influencing external pressure and readiness while external pressure was considered to be influenced by the dependency on trading partner and enacted trading partner power. Kuan and Chau determined the factors influencing the adoption of EDI in small businesses using a technology, organisation, and environment framework [5].

Based on the literature, Premkumar and Roberts identified the use of various communication technologies and the factors that influence their adoption in small businesses located in rural US communities [6]. The results suggested that relative advantage, top management support, and competitive pressure were factors influencing the three communication technologies. Compatibility, complexity, external pressure, and organisational size were found to be significant discriminators between adopters and non-adopters of online data access technology.

Mirchandani and Motwani, investigated the factors that differentiate adopters from non-adopters of e-Commerce in small businesses [7]. The relevant factors included enthusiasm of top management, compatibility of e-Commerce with the work of the company, relative advantage perceived from e-Commerce, and knowledge of the company's employees about computers. The degree of dependence of the company on information, managerial time required to plan and implement the e-Commerce application, the nature of the company's competition, as well as the financial cost of implementing and operating the e-Commerce application were not influencing factors.

The above studies indicate that adoption of e-Commerce in SMEs is influence by the strategic value of certain information technologies to top managers besides other factors. Basing on these studies, this study adopted the revised model suggested by Grandon and Pearson, with compatibility (CC) as the additional variable (Figure 1) [8].

[II] OBJECTIVES AND METHODOLOGIES

2.1 Research Objectives

The present study tries to examine the relationship between IT adoption and the value creation for the firms. The broad objective of the study is to understand the status and factors of adoption of IT in SMEs in Orissa. The specific objectives are –

1.To identify the factors which affect the adoption of IT in SMEs

2.To examine the factors influencing the perceptions of owners and managers in SMEs

3.To suggest a model for improvement of IT adoption by SMEs in Orissa

[III] RESEARCH DESIGN AND METHODOLOGY

3.1 Data Source

The present study is mainly based on field survey and is exploratory in nature. The subjects for the study are the top executives of the firm who are either the top managers or the owners. The units for the study are mainly of small and medium sized enterprises (SMEs) from a variety of industries operating in Orissa and are registered with the District Industries Centres (DICs) of the state. The sources of data are mainly primary in nature, which have been collected from the owners / top managers through a structured questionnaires designed for the purpose.

3.2 Sample Profile

The present study has been conducted on the small and medium enterprises (SMEs) in the state of Orissa. The sample for the study comprises of 141 owners / managers of the SMEs. While choosing a respondent, purposive sampling method was followed to give proper representation to different types of industries across different product category.

3.3 Instrument Development and Data Collection

As stated above, the data for the study were collected through a structured questionnaire from the respondents. After reviewing the literature, relevant dimensions were identified to draft the preliminary questionnaire. Then a pilot survey was conducted to solicit the opinion regarding development of the questionnaire. For designing the questionnaire, the scale suggested by Grandon and Pearson was suitably modified for the purpose [8]. Respondents were asked to complete the survey that have the following major sections for drafting the questionnaire:

- Demographic questions (respondent's gender, age, education, years of work in present position, and years of work in present firm).

- General questions about the firm (number of employees and industry).
- Questions about the technology in the organization (number of PCs, presence of Internet Service Provider (ISP), presence of web site, and utilisation of e-Commerce).
- Questions asking the extent to which IT is perceived as contributing / hindering factor to the SMEs (benefits and barriers).
- Questions to measure the factors involved in e-Commerce adoption.

A seven-point Likert scale, from strongly disagree to strongly agree has been used to measure the questions about perceived strategic value and adoption of IT [10].

The results of the pilot study were validated by conducting the reliability test (Chronbach's α).The final questionnaire has six sections. The first two sections deal with demographic profile of the respondent and the unit. The third section deals with the perception of strategic value of e-Commerce and the fourth section with adoption of e-Commerce. The last two sections enumerate the perceived benefits and barriers by using e-Commerce. Further, a follow up interview was conducted with the respondents to check the reliability and correctness of the data.

3.4 Tools and Techniques Used for Data Analysis

The data collected through the questionnaires are tabulated in a data sheet and are processed through the statistical package SPSS. Cross tabulations and frequency distributions are made to understand the underlying relationships among the demographic variables and factors of adoption under study keeping the broad objectives in mind. The perception of respondents regarding the benefits and barriers were also tabulated by calculating the weighted average and then compared across different demographic parameters by using analysis of variance (ANOVA) and t-test. Chi-square statistics were calculated to test the goodness of fit of the distribution. Correlation and multivariate analysis such as factor analysis; canonical analysis and structured equation model too have been used in the study [11].

Figure 1: The Research model

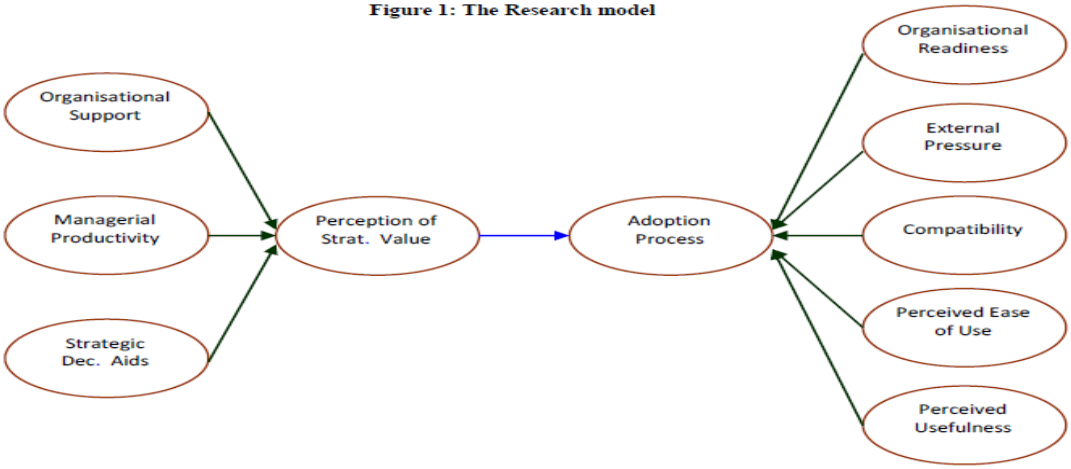

Figure 1: The Research model

[IV] THE RESEARCH MODEL

The research model taken in the study has two basic ingredients, i.e., (1) perception of strategic value of e-Commerce and (2) the adoption of e-Commerce.

4.1 Perception of Strategic Value of e-Commerce

In Perception the three major variables are the sources of perception of the strategic value of e-Commerce. They are described as

Organisational support: It measures how e-Commerce can reduce costs, improve customer services and distribution channels, provide effective support role to operations, support linkages with suppliers, and increase ability to compete.

Managerial productivity: It suggests how e-Commerce can enhance access to information, provides a means to use generic methods in decision-making, improves communication in

the organisation, and improves productivity of managers.

Strategic decision aids: It defines how e-Commerce can support strategic decisions of managers, support cooperative partnerships in the industry, and provide information for strategic decisions.

4.2 Adoption of e-Commerce

In the process of adoption of e-Commerce the five different variables used as identified in prior research are grouped under this head. They are-

Organisational readiness: This is assessed by 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).

Compatibility: It suggests that how the perception of e-Commerce is consistent with the existing culture, values, preferred work practices and technology infrastructure.

External pressure: This is assessed by incorporating five items such as competition, social factors, and dependency on other firms already using e-Commerce, the industry, and the government.

Perceived ease of use: It suggests that how easily e-Commerce can be adopted and practiced in the company as perceived by the managers / entrepreneurs who are the ultimate decision makers in that company.

Perceived usefulness: It suggests that to which extent the managers / entrepreneurs who are the ultimate decision makers of a company perceive the usefulness of e-Commerce to their company.

[V] STATISTICAL ANALYSIS

A seven point likert scale is utilised to measure the questions about perceived strategic value and adoption of e-Commerce. The extent to which the strategic value of e-Commerce was perceived as a contributing factor to adoption of e-Commerce was measured through fifteen parameters. Similarly, twenty-three parameters were chosen to measure the factors influencing adoption of e-Commerce. Responses from the entrepreneurs / managers of 141 sample units were analysed to understand the perceived strategic value and adoption of e-Commerce in these units.

In order to test the model, confirmatory factor analysis is conducted to measure whether the number of factors involved in the two main constructs, i.e., perceived strategic value and adoption of e-Commerce, confirm to the proposed model. The construct reliability or internal consistency is assessed through Cronbach's α. Table 1 provides the support to the construct reliability, where the values for alpha in respect of all factors are greater than 0.5.

Construct	**Cronbach's α**
Perceived strategic value	
Organisational Support (OS)	0.741
Managerial Productivity (MP)	0.817
Decision Aids (DA)	0.695
Overall - Perceived strategic value	0.892
Adoption of e-Commerce	
Organisational Readiness (OR)	0.806
Compatibility (CC)	0.901
External Pressure (EP)	0.525
Ease of Use (EU)	0.956
Perceived Usefulness (PU)	0.947
Overall- Adoption of e-Commerce	0.942

[Table 1: Reliability analysis]

Source: Authors own calculations

[VI] DEMOGRAPHIC PARAMETERS, PERCEIVED STRATEGIC VALUE AND ADOPTION OF E-COMMERCE

Different demographic parameters such as age, gender, qualification, and number of years present in the present position and present company / firm determines the perception and adoption of e-Commerce in a particular company / firm. It is argued that managers and entrepreneurs of younger age group have more exposure to computer and e-media. Therefore, they can perceive the advantages of use of e-Commerce in their company and accordingly more likely to adopt e-Commerce. Similar is the case for managers /entrepreneurs with high qualification and with presence in that particular position and particular company / firm for a longer period of time. Similarly, perception and adoption of e-Commerce also vary according to type of industries. In order to test whether the perceived strategic value and adoption constructs and the variables under these two

constructs differ across demographic variables, the average scores for all the variables have been calculated and tested through 'F' test (Table 2 and Table 3).

The average scores for the variables under perceived strategic value and adoption construct across years of present position of the managers/ entrepreneurs along with their F ratio is given in Table 2. The table indicates that the managers/ entrepreneurs with 5 to 10 years of presence in the present position assign higher average scores to the variables 'managerial productivity', 'decision aids', 'organisational readiness', 'compatibility', and 'perceived usefulness'. The F ratio indicates that there exists difference in the average scores assigned by managers/ entrepreneurs with different years of presence in the present position except for the variable 'external pressure' and 'perceived usefulness' at 5% level of significance.

Table 3 presents the average score for all the variables under perceived strategic value and adoption constructs across the type of industry. Average scores for all the variables under perceived under the two constructs are statistically significant at 5% level of significance indicating that the average scores for all the variables across type of industry are not same and there exists a difference among them.

[VII] CANONICAL CORRELATION ANALYSIS

Canonical correlation analysis (CCA) that studies the interrelationships among sets of multiple criterion (dependent) variables and multiple predictor (independent) variables is conducted to explore how the perceptions of strategic value influence the decision to adopt e-Commerce. In order to test the significance of the canonical functions the guidelines given by Hair *et al* are followed [9]. They suggest three different measures to interpret the canonical functions:

Construct	Variable	Present Position (In Years)			F Value	Significance
		Up to 05	05 - 10	Above 10		
Perceived Strategic Value	Organisational Support	5.54	5.34	4.98	5.444	0.005
	Managerial Productivity	5.90	6.09	5.38	5.305	0.006
	Decision Aids	5.50	5.86	5.13	4.846	0.009
Adoption	Organisational Readiness	4.68	5.27	3.80	6.599	0.002
	Compatibility	5.39	5.46	4.70	4.351	0.015
	External Pressure	3.74	3.96	4.10	2.034	0.135
	Ease of Use	5.15	4.52	4.39	3.776	0.025
	Perceived Usefulness	5.45	5.91	5.29	4.519	0.222

[Table 2: Average scores of variables under perceived strategic value and adoption across present position (in years)]

Source: Authors own calculations

Construct	Variable	Type of Industry								F Value	Significance
		Manufacturer	Educational	Transportation	Wholesale	Construction	Health care	Retail	Information Technology		
Perceived Strategic Value	**Organisational Support**	5.36	5.33	5.00	4.74	4.91	5.73	5.52	5.68	2.61	0.02
	Managerial Productivity	5.53	6.00	6.50	5.37	5.00	5.94	6.19	6.42	6.34	0.00
	Decision Aids	5.37	6.50	6.00	4.90	4.25	5.78	6.07	5.57	5.44	0.00
Adoption	**Organisational Readiness**	4.22	5.67	5.50	5.20	4.00	4.28	4.25	5.40	2.99	0.01
	Compatibility	4.99	6.73	5.20	5.36	3.60	5.16	4.86	6.08	8.34	0.00
	External Pressure	3.85	2.00	4.20	3.48	4.80	4.29	4.29	3.77	8.09	0.00
	Ease of Use	4.63	6.80	2.80	4.36	4.20	4.33	4.10	6.14	10.74	0.00
	Perceived Usefulness	5.09	7.00	7.00	4.40	5.00	5.17	5.91	6.20	5.46	0.00

[Table 3: Average scores of variables under perceived strategic value and adoption across type of industry]Source: Authors own calculations]

(a) the significance of the F-value given by Wilk's lambda, Pillai's criterion, Hotteling's trace, and Roy's gcr;

(b) the measures of overall model fit given by the size of the canonical correlations; and
(c) the redundancy measure of shared variance.

Test Name	Value	Approx. F	Hypoth. DF	Sig. of F
Wilks' lambda	0.201	19.321	15	0.0000
Pillai's trace	1.574	16.878	15	0.0000
Lawley-Hotelling trace	2.390	20.984	15	0.0000
Roy's largest root	0.610			

[Table 4: Multivariate test of significance]
Source: Authors own calculations

Table 4 shows the corresponding multivariate test of significance with 15 degrees of freedom. These test statistics are for the full model, which means they evaluate the shared variance between the predictor and criterion variables across all of the canonical functions. Nevertheless, by far the most common method used is the Wilk's Lambda (λ), as it tends to have most general applicability. However, all these test statistics in this case are statistically significant at 0.01 levels. Particularly, the Wilk's lambda takes a value 0.201 which is statistically significant at 1% level of significance. Accordingly, the null hypothesis that there is no relationship between the variables sets is rejected and it is concluded that there is probably a relationship.

The effect size of the full model can be judged through Wilk's lambda. Wilk's lambda represents something of an inverse effect size or the amount of variance not shared between the variable sets. Therefore, by taking $1 - \lambda$, the over all effect of the full model can be judged. In this case, $1 - \lambda$ is 0.799 which indicates that nearly 80% variance is shared between the variable sets. Therefore, the full model is both statistically significant and has a large effect size.

Table 5 shows the measures of overall model fit in the three canonical functions. The strength of the relationship between the canonical covariates is given by the canonical correlation. The squared canonical correlation is the simple square of the canonical correlation and represents the proportion of variance (i.e., variance accounted for effect size) shared by the two synthetic variables. The measures of overall model fit indicate that all the three canonical functions are statistically significant at 0.01 levels. However, the canonical R^2 for the first canonical function is 0.61 which indicates that the first canonical function is able to explain 61% variance shared by the two synthetic variables. The last two functions only explained 39.3% and 15.0% respectively, of the remaining variance in the variables sets after the extraction of the prior function. Therefore, the first canonical function is taken for further analysis and interpretation. As is observed from Table 10 the canonical correlation coefficient in respect of first canonical function is 0.781. This is statistically significant at 1% level of significance concluded that perceived strategic value and adoption of e-Commerce are highly correlated.

Canonical Function	Canonical Correlation	Canonical R^2	F - Statistics	Probability
1	0.781	0.610	217.45	0.000
2	0.627	0.393	89.83	0.000
3	0.388	0.150	22.08	0.000

[Table 5: Measures of overall model fit]
Source: Authors own calculations

Even though the first canonical function was deemed to be significant, it has been recommended that redundancy analysis be utilized to determine which functions to use in the interpretation. Redundancy is the ability of a set of independent variables, to explain the variation in the dependent variables taken one at a time.

Table 6 summarises the redundancy analysis for the dependent and independent variables for the three canonical functions. The results indicate that the first canonical function accounts for the highest proportion of total redundancy (68.25% including both dependent and independent variables), the second one accounts for 29.59%, and the third one accounts only for 2.16%. In addition, the redundancy indices are higher for the first canonical function than for the second

and third. Therefore, only the first canonical function is considered for interpretation.

Canonical Function	Variable	Shared Variance	Canonical R^2	Redundancy Index	Proportion of Total Redundancy (%)
1	Dependent	0.324	0.610	0.197	14.18
	Independent	0.123		0.751	54.07
2	Dependent	0.292	0.393	0.115	8.28
	Independent	0.753		0.296	21.31
3	Dependent	0.072	0.150	0.011	0.79
	Independent	0.124		0.019	1.37

[Table 6: Canonical redundancy analysis]
Source: Authors own calculations

Identification of the contributing variables can be critical to informing theory. That is, what variables are contributing to this relationship between the variables sets? Interpretation of both standardised weights and structure coefficients are necessary for understanding variable importance in a CCA. Standardised canonical coefficients (known as also standardised weights) reflect the relative contribution of one predictor to the criterion given the contribution of other predictors while the structure coefficients reflect the direct contribution of one predictor to the predictor criterion variable regardless of other predictors. Indeed, structure coefficients increase in importance when the observed variables in the model increase in their correlation with each other. Because multivariate researchers can purposefully use variables that are related, structure coefficients are critical for deciding what variables are useful for the model. Therefore, the interpretation of both standardized weights and structure coefficients are necessary for understanding variable importance in a CCA. For emphasis, structure coefficients above 0.45 are underlined following a convention in many factor analyses. Table 7 presents the standardised canonical function coefficients and structure coefficients for first canonical function. Looking at the coefficients, it is observed that relevant criterion variables are primarily *External Pressure* (EP) followed by *Organisational Readiness* (OR), *Ease of Use* (EU) and *Perceived Usefulness* (PU) with *Compatibility* (CC) making secondary contributions to the synthetic criterion variable. Regarding the predictor variable, only *organisational support* (OS) is the primarily contributors to the predictor synthetic variable with a secondary contribution by *Managerial Productivity* (MP). *Decisions Aids* (DA) does not appear to contribute strongly to the perceived strategic value. Looking at the structure coefficients for the entire function, it is observed that all the variables under perceived strategic value except decision aids are positively related to criterion variables.

Construct	Variable	Standardised Canonical Coefficients	Structure Canonical Coefficients
Perceived Strategic Value	Organisational Support	-0.548	-0.380
	Managerial Productivity	-1.366	-0.464
	Decision Aids	1.593	0.099
Adoption	Organisational Readiness	-0.677	-0.630
	Compatibility	0.103	-0.462
	External Pressure	-0.731	-0.640
	Ease of Use	-0.456	-0.566
	Perceived Usefulness	0.199	-0.527

[Table 7: Standardised canonical coefficients and structure canonical coefficients for perceived strategic value and adoption**]** Source: Authors own calculations

Different type of industries behaves differently as regard to perception and adoption of e-Commerce in their companies / firms. Due to small sample size it becomes impossible to compute canonical correlation coefficient for all the type of industries under study except manufacturing. The details of canonical correlation coefficient for manufacturing industry are given in Table 19. The table shows that the first canonical coefficient which has a value of 0.883, explains about 78% variance. The value of the structural coefficients indicates that none of the variables contributes primarily to the perceived strategic value construct, whereas only external pressure, perceived usefulness and organizational readiness contributes primarily to adoption construct. All

the variables are positively correlated except decision aids under perceived strategic value construct.

Construct	Variable	Manufacturing Industry	
		Standardised Canonical Coefficients	Structure Canonical Coefficients
Perceived Strategic Value	Organisational Support	0.347	0.167
	Managerial Productivity	2.139	0.281
	Decision Aids	-2.354	-0.145
Adoption	Organisational Readiness	0.738	0.528
	Compatibility	-0.599	0.217
	External Pressure	0.673	0.908
	Ease of Use	0.202	0.426
	Perceived Usefulness	0.066	0.645
Canonical Correlation	First Function	0.883	
	Second Function	0.714	
	Third Function	0.474	
Canonical R^2	First Function	0.780	
	Second Function	0.509	
	Third Function	0.225	

[Table 8: Standardised canonical coefficients and structure canonical coefficients for perceived strategic value and adoption for manufacturing industry. Source: Authors own calculations

Using theoretical foundations from established information systems (IS) implementation research, innovation diffusion theories, e-Commerce and small business literature, the present research seeks to explain e-Commerce implementation success by examining factors that may be associated with the adoption of e-Commerce within organisations and between its business partners. It can be best implemented through developing a model for adoption of e-Commerce by SMEs. The relationships of these factors with the adoption of e-Commerce are shown in the figure 2.

The model proposes five types of factors relevant for the adoption and diffusion of e-Commerce in SME sector. These factors are communication, organisation, innovation, industry and the national characteristics as illustrated in the above figure. Some of these factors may be more important at the time the organisation is deciding whether to adopt e-Commerce technology than in influencing the extent to which e-Commerce is implemented in the organisation. On the other hand, some other factors may be important both in the adoption decision and in the subsequent implementation. Many of the factors identified here are suggested by the literature, which attempts to distinguish adopters from non-adopters. Further, it is seen that some of these factors may also impact the adoption decision and the extent to which e-Commerce is implemented in an organisation.

Figure 2: Proposed e-Commerce adoption model for SMEs

[VIII] FINDINGS AND CONCLUSION

The research model taken in the study has two basic ingredients, i.e., perception of strategic value of e-Commerce and adoption of e-Commerce. Three major variables, i.e., organizational support, managerial productivity, and decision aids constitutes the perception of strategic value construct, where as organizational readiness, compatibility, external pressure, ease of use and perceived usefulness constitute the adoption construct.

The difference in average scores for the eight variables under the two constructs across different demographic variables has been tested through analysis of variance. The results of ANOVA are as follows;

- The difference in average scores for all the variables in respect of male and female entrepreneurs / managers are statistically significant except for the variable 'external pressure'.
- There exists difference in the average scores assigned by managers / entrepreneurs with different years of presence in the present position except for the variable 'external pressure' and 'perceived usefulness'
- Average scores for all the variables under the two constructs across type of industry are not same and there exists a difference among them.

Canonical correlation analysis has been undertaken to find out nature of relationship between the two constructs and among the variables. The major findings of canonical correlation analysis are as follows;

- There exists a high relationship between the two constructs, i.e., perception of strategic value and adoption of e-Commerce (canonical correlation coefficient is greater than 0.75).
- External pressure (EP), organizational readiness (OR), ease of use (EU) and perceived usefulness (PU) are the primary criterion variables with compatibility (CC) making secondary contributions to the synthetic criterion variable. Regarding the predictor variable, only organizational support (OS) is the primarily contributors to the predictor synthetic variable.
- All the variables under perceived strategic value and adoption are contributing heavily to these constructs in case of the companies / firms where the managers / entrepreneurs are there for more than 10 years.

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