

Factors Affecting the Intention to Adopt E-Procurement with Special Reference to Manufacturing Companies in Coimbatore

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Abstract

Factors Affecting the Intentions to Adopt E- Procurement in Manufacturing Industry of India is conducted by considering the case of manufacturing industry in Coimbatore, Tamil Nadu, India. The study is conducted with the purpose of allowing the readers to understand the specific factors have an impact on intentions to adopt E- Procurement in manufacturing industry. Therefore, the variables tested in this research are perceived usefulness and perceived ease of use, which was adopted from Technology Acceptance Model . Apart from that, the other variables used in this study are : perceived risk, organization culture and technology support and infrastructure. This will eventually show if all these variables have a significant relationship with intentions to adopt E -Procurement in the Manufacturing industry.

I.INTRODUCTION

It's crucial to first comprehend what procurement actually entails. There are possibly countless ways to define procurement, but they all might have some characteristics generally. The terms “Purchasing” & “Procurement” are sometimes used interchangeably, but procurement generally has a broader meaning. It refers to all activities involved with obtaining items from a supplier; this includes purchasing, but also inbound logistics such as transportation, goods-in and warehousing before the item is used. (E-procurement: from strategy to implementation, The purchase order request occurs when the need for goods, services, or works is determined and electronically documented. This sums up the primary e-procurement processes within a company. Once the requisition has been examined and approved, the supplier identification and selection process starts. Potential suppliers are investigated, and the products of each are contrasted according to criteria including cost, value, and on-time delivery. After negotiations are finished, electronic contracts are then performed to establish favourable terms and circumstances. Once contracts are in place, electronic purchase orders are created and sent to vendors. Once the goods or services are delivered, electronic quality checks and inspections are conducted. The products are electronically scanned after the supplier delivers them. Following delivery from the supplier, the products are electronically checked and verified to verify if they adhere to the specifications. Once approved, the products are electronically recorded and retained in the company's storage facility or inventory management system. The supplier then sends a follow-up electronic invoice, which is verified for accuracy before being processed for payment. The process of evaluating suppliers' performance is done electronically to encourage continuous improvement and effective supplier relationship management.

Problem Statements

E-procurement, of course, enables and helps corporate organisations, including NGOs and governmental organisations, find suppliers and manage the purchasing processes in a very streamlined manner from the comfort of their offices sitting at their workstations. Although the adoption of e-Procurement in the manufacturing industry has increased in recent years, many organizations have yet to do so. The slow adoption of E-Procurement in the manufacturing industry presents a significant challenge for organisations seeking to stay ahead in the global marketplace. Adoption of e-procurement can result in a number of positive outcomes, including the streamlining of

procurement processes, lowering transaction costs, improvement of supply chain management, and increase of procurement transparency. However, E-Procurement requires a significant financial investment and is influenced by a number of factors, including organisational culture, management support, employee resistance, system compatibility, security, and reliability.

Even though there are some studies on the adoption of E-Procurement in different industries, limited research has been conducted on the factors that influence the intention to adopt E- Procurement in the manufacturing industry. Additionally, few research have examined how these characteristics affect the adoption of e-procurement in specific manufacturing companies. So, there is a need for research that focuses specifically on the manufacturing industry and that too in Coimbatore region of Tamil Nadu state and explores the impact of the identified factors on the adoption of E-Procurement in specific manufacturing companies.

Research Objectives

1. To investigate the significant relationship between perceived ease of use and E- Procurement adoption in the Manufacturing industry
2. To investigate the significant relationship between perceived usefulness and E- Procurement adoption in the Manufacturing industry
3. To investigate the significant relationship between perceived risk and E-Procurement adoption in the Manufacturing industry

Scope of the Study

The scope of this study is limited to the factors that influence the intention to adopt E- Procurement in the manufacturing industry, as well as their impact on E-Procurement adoption in a specific manufacturing company. The study mainly focus on the procurement department people from manufacturing industry, so that they will be knowing about E- Procurement in detail and also tell what the challenges and benefits they are having while adopting it, or if they are not adopted it, the challenges behind that too. And the major location focussing for this research is the Coimbatore district of Tamil Nadu state, India. The study's findings will provide insights into the challenges and benefits of implementing E-Procurement in the manufacturing industry, as well as practical recommendations for organisations and policymakers.

Literature Review

The adoption of e-procurement in the manufacturing sector is the focus of a study by Singh, Dwivedi, and Rana (2020), which was published in the Journal of Business Research. The authors of the study talk about the main factors that impact and hinder the adoption of e- procurement and suggest a new agenda for the future.

According to Singh and Yadav (2019), increased control and standardisation in procurement processes are positively related to perceived usefulness of e-procurement. This helps to reduce errors and fraud while also ensuring regulatory compliance. The study by Maheshwari & Singh (2020) found that perceived usefulness is a critical factor influencing e-procurement adoption. The perceived usefulness of e-procurement systems was positively related to procurement cost reduction, improved supplier relationships, and increased procurement process efficiency.

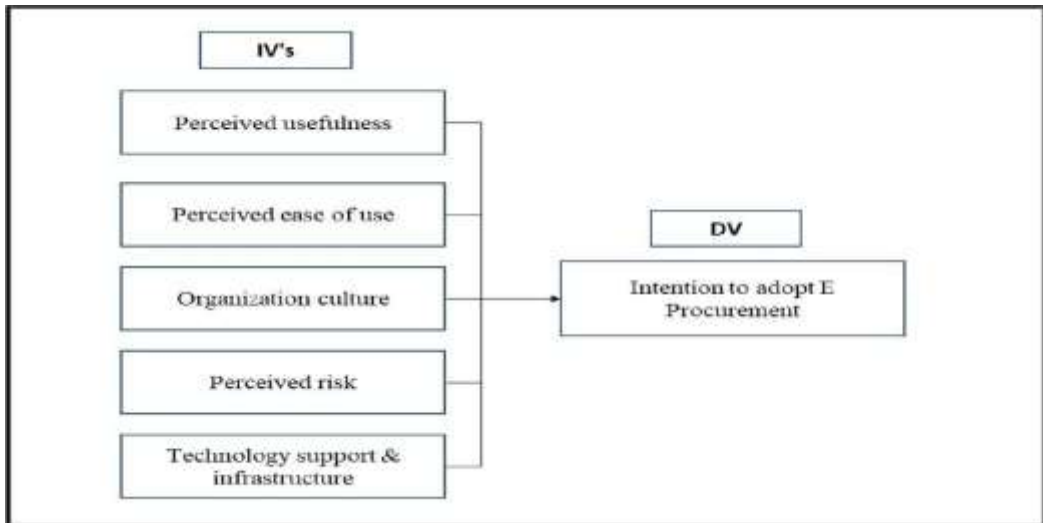
According to Pandey and Dhote's (2019) research, perceived ease of use is a major factor driving e-procurement adoption in Indian manufacturing enterprises. According to the study, the easier users consider an e-procurement system to be, the more likely it is to be adopted. The study also discovered that system compatibility, training and assistance, and perceived usefulness of the technology all influenced perceived ease of use positively.

Shreya Ghosh and Rupayan Pal's (2021) study on the role of organisational culture and top management support in e-procurement adoption in the Indian manufacturing industry based on SMEs investigates the role of organisational culture and top management support in e- procurement adoption in Indian manufacturing SMEs.

Methodology

Research Framework

Figure 1 Research Framework



Hypotheses Development

1. **H0:** There is no significant relationship between perceived usefulness & E- procurement adoption
2. **H1:** There is a significant relationship between perceived usefulness & E- procurement adoption
3. **H0:** There is no significant relationship between perceived ease of use & E- procurement adoption
4. **H1:** There is a significant relationship between perceived ease of use & E- procurement adoption

Data Collection Methods

There are several methods to collect data , which may be primary or secondary. Primary data can be collected through conducting surveys among the key stakeholders, such as manufacturers, procurement managers, and suppliers. To learn more about the variables that affect the adoption of e-procurement, such as various benefits, obstacles, and incentives, surveys can be created. Depending on who the survey is intended for, surveys may be conducted online or in person.

Sources of Data

Primary Data

Primary data refers to newly gathered and initial datasets, which are deemed authentic and original. They are utilized in both quantitative and qualitative research methods, enhancing the credibility of the data and enabling the discovery of concealed information. Sources of primary data encompass interviews, surveys, and observations.

Secondary Data

Secondary data refers to information that has already undergone statistical analysis or has been obtained by someone else, processed statistically, and subsequently passed on to another individual. This type of data can be managed quickly, striking a balance between time and financial resources, as experts have already examined the readily accessible information. Government publications, websites, books, journal articles, and internal notes are examples of sources for secondary data.

Sampling Method

A sampling method is a methodology employed to choose a subset of individuals or observations from a larger population with the purpose of estimating or drawing conclusions about the characteristics of the entire population (Sharon, 2009). There exist two primary categories of sampling methods: probability sampling and non-probability sampling.

Sampling Size

William Gemmell Cochran defined sample size as "the number of observations which would be required in order to estimate the unknown population parameter with a desired level of precision and confidence" (1977). In statistical analysis, choosing the right sample size is crucial to ensuring that the sample accurately represents the population and that the findings are trustworthy.

Results and Discussions

Variables	No of Items	Cronbach's Alpha Coefficient
Intention to adopt procurement E	4	0.753
Perceived ease of use.	4	0.725
Perceived usefulness	4	0.823
Perceived risk	4	0.706
Organisation culture	4	0.829
Technology support and Infrastructure	4	0.793

Table 1 Reliability Test Analysis

According table 4.1, all the dependent and independent variables have a Cronbach's alpha value of greater than 0.7, which indicates that all the dependent and independent variables adopted in this study are reliable. As a result, it can be concluded that the questionnaire is reliable and can use to gather data from respondents

Normality Test

Table 2 Normality test Analysis

Variables	Statistic		Std. error	
	Skewness	Kurtosis	Skewness	Kurtosis
Intention to adopt procurement E	0.719	2.578	.198	.394
Perceived ease of use.	0.828	-0.651	.198	.394
Perceived usefulness	-0.945	0.565	.198	.394
Perceived risk	0.815	2.659	.198	.394
Organisation culture	0.489	0.98	.198	.394
Technology support and Infrastructure	0.581	1.485	.198	.394

As per Tabachnick & Fidell (2013), data is deemed to follow a normal distribution when the skewness value falls between -2 and +2, and the kurtosis value falls between -7 and +7. Since the skewness and kurtosis values for both the independent and dependent variables meet these criteria, it can be inferred that these variables exhibit a normal distribution.

Profile of the respondents

The research focussed on Manufacturing industry of Coimbatore, Tamil Nadu , India. The data is collected from the employees as well as the top management to know their intention to adopt E-Procurement. For that , the data is collected from the respondents which include their demographical details of highest qualification, income, job position, work experience,

Frequency of respondents

Table 3 Frequency of respondents

	What is your highest level of education?	What is your monthly income?	What is your job position in the company?	How long have you been working in the manufacturing industry?	How familiar are you with E-Procurement?	Have you ever used E-Procurement systems before?
Frequency	151 0	151 0	151 0	151 0	151 0	151 0

For the analysis, there are 151 valid data and no missing data

Frequency of respondents based on Education

Table 4 Education

Demographic variable		Frequency	Percent	Valid Percent	Cumulative Percent
Education	High school diploma or equivalent	6	4	4	4
	Bachelors degree	24	15.9	15.9	19.9
	Masters degree	121	80.1	80.1	100
	Total	151	100	100	

Table 4.4 shows that, among the respondents, only 4% have an high school or diploma level of education, 16% are completed their bachelors and 80% of the respondents are having a Master's degree .

Frequency of respondents based on Income

Table 5 Income

Demographic variable		Frequency	Percent	Valid Percent	Cumulative Percent
Income	Less than Rs 25,000	45	29.8	29.8	29.8
	Rs 25,000 - Rs 49,999	28	18.5	18.5	48.3
	Rs 50,000 - Rs 74,999	18	11.9	11.9	60.3
	Rs 1,00,000 -Rs 1,49,999	26	17.2	17.2	77.5
	Rs 1,50,000 or more	34	22.5	22.5	100
	Total	151	100	100	

Among the respondents, 30% are earning less than 25000 Rs a month and 22.5% are earning more than 1.5 lakh per month.

Findings and Conclusions

A summary of the major findings

Based on the analysis of data that has done in the previous chapter, a summary of major findings are provided below.

Table 6 Summary of the results

Hypothesis	Statement of Hypothesis	T	Sig.	Supported/ Not Supported
H1	There is a significant relationship between perceived ease of use & E- procurement adoption	-7.934	0.000	Supported
H2	There is a significant relationship between perceived usefulness & E- procurement adoption	-1.833	0.049	Supported
H3	There is a significant relationship between organization culture & E- procurement adoption	21.539	0.000	Supported
H4	There is a significant relationship between perceived risk & E- procurement adoption	4.787	0.000	Supported

The findings of the hypothesis testing showed that all of the hypotheses were supported, demonstrating a strong correlation between a number of independent variables and the adoption of e-procurement in the Indian manufacturing sector. Particularly, perceived usefulness, perceived ease of use, organisational culture, perceived risk, and infrastructure and support for technology were discovered to be important determinants. These results imply that higher levels of e-procurement adoption are influenced by favourable perceptions of usefulness and ease of use, a positive organisational culture, lower perceived risk, and enough infrastructure and support for technology.

Limitation of the Study

Even though the study highlighted the significant relationship between the dependent variable with each independent variable, it has certain limitations as well. First off, the research was confined to the manufacturing sector in the Tamil Nadu region of Coimbatore, which restricts the applicability of the findings to other sectors or geographical areas. To increase the results' external validity, future studies might look into a larger range of sectors and places. Second, as the study used self-reported data, it could have been biased by social desirability and conventional methodology. So, future studies can think about using different data collection techniques or objective metrics to increase the validity and reliability of the data in order to overcome this restriction. Another thing is that, the relationship between variables are significant at this particular point of time, but as changes happen over time, e-procurement adoption may also changes. Third, this study focus only on five independent variables. It did not look at additional possibly important variables, which is a limitation.

II. CONCLUSIONS

The study investigates the factors affecting the intention to adopt E Procurement in Indian manufacturing industry. The adoption of e-procurement in the industrial sector has been significantly influenced by a number of important factors , with an emphasis on the Coimbatore region of Tamil Nadu. The research has brought attention to the significance of internal factors, including perceived usefulness, perceived ease of use, organizational culture, perceived risk, and technology infrastructure and support. However, the analysis did not take into account how external factors such as the state of the economy, legislative changes, and technology improvements can have an impact. Future study should take these external contextual factors into consideration as they have a substantial impact on the adoption of e-procurement systems. The dynamics and difficulties underlying the adoption of e-procurement can be better understood by researchers by examining the relationship between internal drivers and external influences. Future study should seek to close this knowledge gap by examining the interaction between internal drivers and external contextual factors, thereby advancing our understanding of the adoption of e-procurement in the industrial sector.

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