



Organizational and technological factors influencing E-procurement adoption in Indian tea processing factories

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Abstract

The present study analyzes the organizational and technological factors influencing the implementation of e-procurement systems in Indian tea processing plants, focusing on staff preparedness, IT infrastructure, and leadership support. Overall, an optimistic view about the adoption of e-procurement is found to exist, as revealed by data gathered from 100 respondents in important tea-producing districts of India. Based on the result, 80% of those who participated claimed that technological integration can only go through with firm leadership support and 65% agreed that their IT infrastructure support is adequate in adopting e-procurement, while 73% of all participants responded they feel positive concerning the use of e-procurement systems to underscore how greatly digital procurement procedures are becoming increasingly acceptable in this industry. However, the presence of neutral and negative responses shows that there are still barriers to fully embracing e-procurement, particularly in terms of overcoming change resistance and improving employee development. In conclusion, the study highlights the importance of leadership engagement, organizational readiness, and technology readiness in making it possible for the widespread adoption of e-procurement in the tea industry.

Keywords: Technological Factors, E-Procurement Systems, Tea Processing Factories, Leadership Support, IT Infrastructure, Employee Readiness, Tea Industry

Introduction

E-procurement system adoption becomes imperative to build operational efficiency and competitiveness across industries globally. Through e-procurement, the Indian tea processing plants will enjoy better transparency on transactions, reductions in cost and streamlined procurement practices. One of the key areas driving the growth of the economy in India has been the Tea Industry. Notably, a supply chain often characterizes these companies as this industry deals with an assortment of suppliers, in addition to requiring significant amounts for raw materials in its processes. Using electronic procurement systems became increasingly significant due to its management of procurement operations more efficiently and economically because, in today's competitive environment of the global tea market, plant processing facilities experience increased pressure toward updating their businesses and meeting world market demands. However, certain organizational and technical factors either encourage or hinder decisions to adopt the use of these e-procurement systems.

Organizational preparedness is the leading factor in adopting e-procurement systems; hence, a number of key elements are critical to the effective implementation of this technology, which include internal procedures, staff training, and top management support. The adoption of new technological solutions can be severely hindered by the opposition to change that tea processing plants encounter, especially from staff members who are accustomed to old procurement procedures. Another important technological variable that influences the adoption of e-procurement in these industries is the availability and integration of technological infrastructure, such as dependable internet access, sophisticated software systems, and digital security measures. The potential advantages of e-procurement, such better data management and automated procurement

operations, might not be completely realized without the required IT infrastructure. Therefore, for the assessment of the effective implementation of e-procurement systems in Indian tea processing plants, there is an awareness of organizational preparedness for change and available technology capabilities. To throw more light on the potential and challenges associated with digital transformation of procurement procedures in the tea sector, this study seeks to examine the variables in greater detail.

Literature review

Mutavi (2021) ^[8] aimed at the procurement management techniques employed in the manufacturing activities of the Kenya Tea Development Agency (KTDA) factories. The study revealed that operational performance of the tea factories was highly influenced by proper procurement techniques such as supplier relationship management, strategic sourcing, and transparent procurement procedures. Optimal procurement procedures boosted cost effectiveness, quality production of teas, and productivity in the KTDA factories, as established through key findings. Furthermore, firms with existing procurement systems were more capable of handling market volatility and maintaining competitive advantage, thus underlining the importance of aligning procurement strategies with organizational goals. In the case of the tea industry, this research provided a clearer understanding of the link between procurement management and organizational performance by suggesting that performance outcomes can be significantly improved by streamlining procurement processes.

Thiro (2024) ^[15] highlighted the increasing role of sustainability in the tea industry, exploring the relationship between green supply chain practices and the sustainability of tea factories in Nyeri County, Kenya. The study reflects that implementation of green supply chain strategies such as

eco-friendly packaging, sustainable sourcing, waste reduction, and energy efficiency enhanced operational and environmental sustainability by the manufacturers of tea. It was found out that by strengthening linkages with stakeholders, including the local community, customers, and so forth, such techniques not only drive improvements in resource efficiency but also enhance the social and economic elements of sustainability. Thiro concluded that to become competitive or respond to the greater demand for ecologically friendly products, supply chain management needs to incorporate sustainability. The findings reflect good progress of Nyeri County tea manufacturers toward employing green supply chain methods that support regional and international sustainability objectives.

Kumar and Ganguly (2020) ^[4] looked at how the interdependence of non-financial e-procurement performance metrics impacts manufacturing costs. In their research, they conclude that supplier cooperation, process transparency, and delivery dependability are critical to maximize production costs, although financial metrics are usually what dominates the discussions about procurement efficiency. The authors discussed how these non-financial aspects reduce costs and increase operational efficiency and how they affect long-term supplier relationships and buying decisions. A comprehensive framework offered by Kumar and Ganguly can be used to understand the broader impact of e-procurement as it moves beyond the short-term financial output from an analysis of intricate interrelationships between diverse performance measurements. This research has important implications for companies that want to enhance procurement tactics and align them with broader production cost-cutting goals.

Schröder *et al.* (2019) ^[13] discussed the potential benefits and impacts on forests and livelihoods of Sustainable Development Goal (SDG) 12, which focuses on responsible production and consumption. The authors highlighted sustainable consumption patterns as an enabler of releasing pressure from forest resources while conscientious production systems are required to ensure preservation of the forest and socio-economic improvement. They looked into the benefits of improved resource management and sustainable production models in terms of reducing deforestation, regenerating forests, and creating employment opportunities for communities around the forests that depend on forest resources. The study underlined how responsible production and consumption are related to environmental sustainability, poverty reduction, and equitable economic development through several case studies and policy frameworks. This study shed light on possible ways of achieving sustainable outcomes in forest-dependent areas and contributed to the broader discussion of how SDG 12 should balance social justice, environmental protection, and economic growth.

Research methodology

1. Research Design

This study, following a descriptive style of research, methodically observes how organizational readiness and technology infrastructure contribute to e-procurement systems in the Indian tea processing facilities. As both qualitative and quantitative data is used, it allows for deep

investigation into prevailing practices and what factors influence their adoption. To this end, the study is going to make an effort at a comprehensive grasp of the whole process of adoption by evaluating influential factors such as staff preparedness, leadership support, and the technology infrastructure.

2. Data Collection

Primary data will be collected with the help of both semi-structured interviews and structured questionnaires. The survey will include items, which are both closed-ended and Likert scale to collect quantifiable information on the support for leadership, readiness of the workforce, IT infrastructure, and attitudes towards the implementation of e-procurement. Semi-structured interviews will further support this by giving more in-depth perspectives on obstacles and facilitators towards the adoption of e-procurement by key persons like procurement managers and IT chiefs. Secondary data from available literature, industrial reports, and organizational records shall be gathered for contextualization and to further corroborate the general findings.

3. Sample Size

The study will comprise a sample size of 100 respondents, selected from various tea processing facilities spread across India. In order to ensure that the sample is composed of people with pertinent expertise and experience in the implementation of e-procurement, purposeful sampling will be used to target important decision-makers in senior management, IT, and procurement roles. This strategy will provide a representative view of the factors influencing adoption in the Indian tea industry across different sizes and types of organizations.

4. Research Area

The study will be conducted in Assam, West Bengal, Kerala, and the Nilgiri, some of India's most important tea-producing regions. These areas were selected because of their significant contributions to the Indian tea industry, besides the variety of their organizational preparedness and technological infrastructure, which will provide an all-rounded and fair assessment of the implementation of e-procurement systems in different contexts within the business.

Data analysis and interpretation

This table shows frequency distribution of opinions on leadership support, with great emphasis on a respondent's response in terms of agreement or non-agreement by rating from "Strongly Disagree" through to "Strongly Agree, with frequency as well as percent of responders rated in each response.

Table 1: Distribution of Frequencies for Leadership Assistance

Leadership Support Rating	Frequency	Percentage (%)
1 (Strongly Disagree)	5	5%
2 (Disagree)	3	3%
3 (Neutral)	12	12%
4 (Agree)	40	40%
5 (Strongly Agree)	40	40%
Total	100	100%

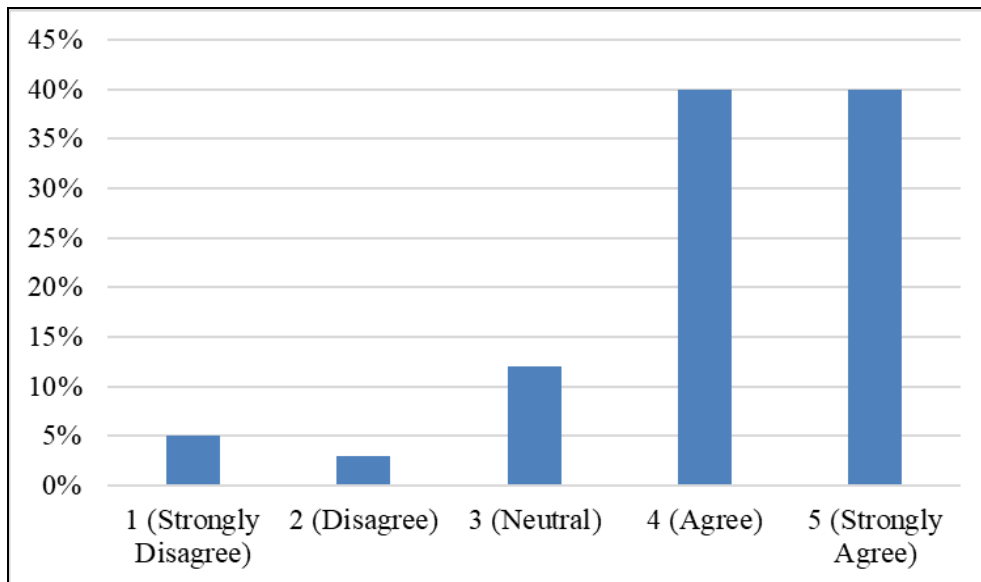


Fig 1: Graphical representation of Distribution of Frequencies for Leadership Assistance

From Table 1, it is understood that there is high leadership support among the majority of the respondents. For instance, while 80% of the respondents provided positive feedback, 40% of them strongly agreed and another 40% agreed on the statement about good support on leadership. The fact that only 5% of the respondents strongly disagreed with the statement seems to suggest that there aren't many not-so-positive opinions on leadership support. A few participants seem to be moderately ambivalent to leadership support, while a remaining 12% of the respondents returned a neutral response.

The following table presents the frequency distribution of respondents' assessments on IT Support and Maintenance for digital banking services. In terms of their experience with digital banking, the scores are classified according to

the level of agreement or disagreement with the effectiveness and quality of IT support services. The distribution reveals the opinions of customers regarding the quality of IT help provided by their respective banks.

Table 2: Distribution of Frequencies for IT Maintenance and Support

IT Support and Maintenance Rating	Frequency	Percentage (%)
(Strongly Disagree)	7	7%
(Disagree)	10	10%
(Neutral)	18	18%
(Agree)	38	38%
(Strongly Agree)	27	27%
Total	100	100%

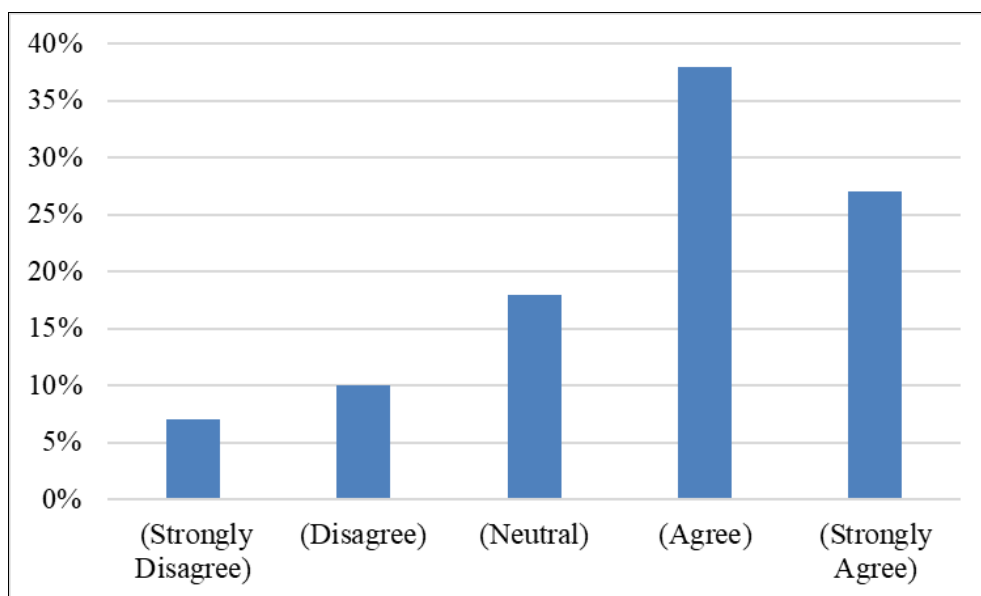


Fig 2: Graphical representation of Distribution of Frequencies for IT Maintenance and Support

Distribution of Frequencies for IT Maintenance and Support Table 2 shows that the highest percentage, 38%, responded positively in terms of agreement with regard to the quality of IT maintenance and support, meaning they are satisfied with the services provided. 27% of the respondents showed

a very high degree of satisfaction with the help that they received. However, taken together, 17% of the respondents agreed or strongly disagreed; thus, the statement is true that some clients are not satisfied with IT support services. The remaining 18% chose a neutral posture in stating that the

participant is ambiguous or not interested in the quality of the services.

Table 3 shows the frequency distribution of respondents' evaluations on the implementation of e-procurement systems. It categorizes answers according to the degree of agreement, from "Strongly Disagree" to "Strongly Agree." The table provides insights into the general sentiment about e-procurement technology by listing the number and percentage of respondents who voiced each opinion.

Table 3: Adoption of E-Procurement Frequency Distribution

E-Procurement Adoption Rating	Frequency	Percentage (%)
(Strongly Disagree)	4	4%
(Disagree)	8	8%
(Neutral)	15	15%
(Agree)	45	45%
(Strongly Agree)	28	28%
Total	100	100%

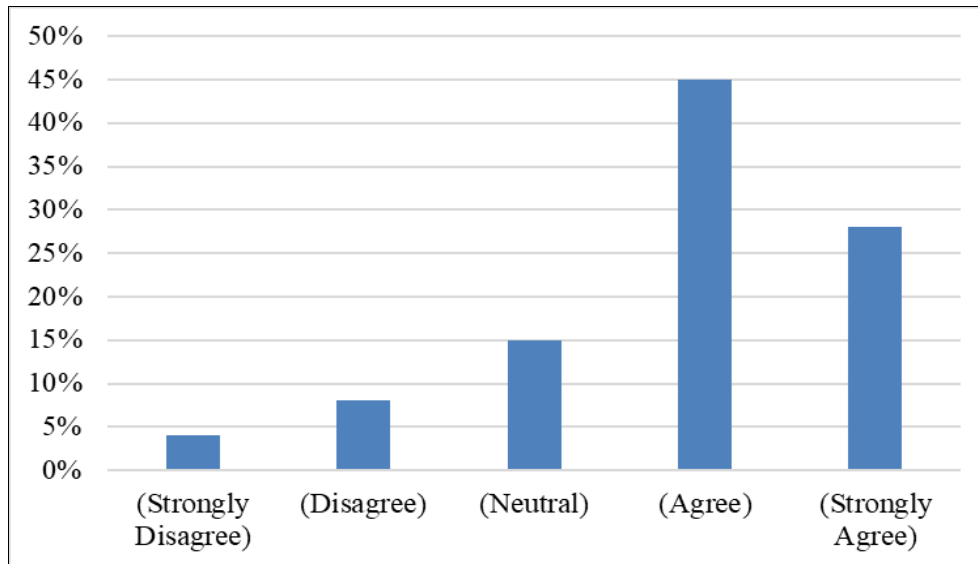


Fig 3: Graphical representation of Adoption of E-Procurement Frequency Distribution

According to the table, 45% agree and 28% strongly agree that e-procurement adoption is a good idea. This implies that e-procurement is viewed positively as a useful tool. Respondents however had no opinion to this suggestion amounting to 15%, thereby implying some degree of doubt or hesitation towards its uses or advantages. 12% of the respondents overall, with 4% strongly disagreeing and 8% disagreeing, indicating a smaller but still significant proportion of people who are either reluctant or uncomfortable about using e-procurement processes.

Conclusion

The results of the data analysis reflect a predominantly positive outlook toward the implementation of e-procurement systems in the Indian tea processing factories. A majority percentage had positive opinions regarding the IT infrastructure and the level of leadership support. A salient strong leadership support is recognized as being indispensable to encouraging the adoption of new technologies by an impressive 80% of the respondents. In addition, 65% of respondents believe or strongly agree that IT support is adequate, showing that the technology infrastructure is moderately facilitative for the use of e-procurement. Additionally, 73% of the respondents agreed or strongly agreed that e-procurement should be implemented, thus supporting the rising trend of using the system. However, the presence of neutral and negative responses calls for focused efforts to alleviate fears and ensure a wider and more effective adoption in the industry as a whole. In general, the research reveals that while many tea processing factories are technologically and organizationally ready, there is still a need for additional efforts in terms of staff training, leadership involvement,

and IT support to overcome resistance and enhance the widespread use of e-procurement.

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