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Study On Optimizing Procurement Process for Cost Efficiency and Financial Control in IITM Pravartak Technologies Foundation

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ABSTRACT

This study delves into the optimization of procurement processes with a dual focus on cost efficiency and financial control. The overarching objective is to identify strategies and practices that enable organizations to streamline their procurement operations while ensuring prudent financial management. Key areas of investigation include the identification of cost-saving opportunities within the procurement process, the enhancement of financial oversight mechanisms, and the streamlining of procurement procedures to minimize inefficiencies and wastage. Additionally, the study explores methods for improving supplier relationships to secure better terms and reliability, as well as strategies for mitigating supply chain risks to safeguard financial interests. Compliance with relevant regulations and policies is also emphasized to avoid legal repercussions and reputational damage. Finally, the study advocates for the implementation of continuous improvement practices within the procurement framework, promoting a culture of ongoing refinement to optimize efficiency and effectiveness. Through comprehensive analysis and practical recommendations, this study aims to provide valuable insights for organizations seeking to optimize their procurement processes for enhanced cost efficiency and financial control.

INTRODUCTION

The study on optimizing procurement processes for cost efficiency and financial

control is a critical endeavor within the realm of business management and supply chain operations. It involves the systematic examination and improvement of the various stages involved in procuring goods and services, with the primary goals of reducing costs, enhancing efficiency, and ensuring financial accountability.

This research area is of paramount importance to organizations across industries for several reasons:

1. Cost Reduction: Effective procurement optimization can lead to significant cost savings for organizations by streamlining processes, negotiating better deals with suppliers, and identifying areas of wastage or inefficiency.

2. Improved Efficiency: By optimizing procurement processes, organizations can improve operational efficiency, shorten lead times, and enhance overall productivity. This can result in faster delivery of goods and services to customers and improved competitiveness in the market.

3. Financial Control: Procurement optimization helps in establishing robust financial controls by implementing measures such as budgetary constraints, approval workflows, and expenditure monitoring. This ensures that spending remains within budgetary limits and aligns with organizational objectives.

4. Risk Mitigation: A well-optimized procurement process helps in identifying and mitigating risks associated with supply chain disruptions, supplier failures, or price fluctuations. This enhances the resilience of the organization and minimizes the impact of unforeseen events on operations.

5. Strategic Alignment: Procurement optimization facilitates better alignment between procurement activities and organizational strategies. By focusing on

strategic sourcing, supplier relationship management, and value creation, organizations can better support their long-term objectives and goals.

OBJECTIVES;

To Analyses the existing purchase requirement To examine cost effective procurement process

To understand existing supplier relationship and analysis options to negotiate better deals
To study the budget control in procurement

RESEARCH METHODOLOGY

Research methodology is mainly needed for the purpose of framing the research process and the designs and tools that are to be used for the project purpose. Research methodology helps to find Employee engagement in the company. This time research methodology is framed for the purpose of finding the level of Employees in the Current System. To know the attitude of the Employees data is collected through a structured questionnaire.

Research Design: The scope includes engaging with relevant internal stakeholders such as procurement teams, department heads, finance personnel, and end-users to understand requirements and gather insights.

Source of Data: Relies on Primary data from the internal & external stakeholders

Primary Data:

It is a source of collecting data by first-hand information through observation, direct communication or personal interviews of respondent's employees. In
this, questionnaire is used for conducting personal interviews and for collecting the data.

Secondary Data:

It is collected from standard books, internal sources, magazines and newspapers and case study's also collecting data from only external sources.

REVIEW OF LITERATURE

Corina Pop Sitar,2021: In this article focuses on essential components and processes of procurement finance, highlighting the three main flows: physical, financial, and information/digital. It outlines how procurement encompasses the

entire cycle from acquisition requests to vendor payments and emphasizes the importance of each flow within the procurement processes. Additionally, it underscores the increasing role of information and communication technologies in managing these flows, particularly in facilitating digital information exchange.

Olanrewaju Stephen Olayeni ,2021: This article explores the optimization of procurement processes through automation, focusing on a case company's procurement activities. By examining the current procurement process and identifying challenges, the study proposes implementing an e-procurement strategy to enhance efficiency and address these challenges through automation. The research method includes qualitative case study analysis, incorporating primary data from direct observation, personal experiences, and interviews. The findings suggest that e-procurement implementation can significantly improve efficiency and overcome procurement challenges by automating certain activities.

K Mugilan ,2021: In this article focuses on proposes a Modified Particle Swarm Optimization (MPSO) algorithm-based claim management system for Engineering Procurement Construction (EPC) projects. It addresses the impact of various risk factors on construction schedule and project cost, emphasizing the importance of effective claim management. The MPSO algorithm optimizes project time and cost, considering them as objective functions, while meeting engineer requirements. Project managers use this system to make decisions based on project time and delays.

Yun Tan Fan et al,2022: In this article focuses on optimization method for controlling voltage deviation in distribution networks using life cycle cost (LCC) theory. It details a process and analyses LCC decomposition models for network reconstruction, developing cost models for conductor cross-section changes, reactive power compensation, and transformer tap adjustment using existing statistical data.

Aman Khan Routledge, 2022 In this article focuses on crucial roles of cost management and operations optimization in both public and private sectors. While profit motives drive private enterprises, public organizations aim to enhance societal well-being. However, efficient resource utilization remains paramount for both. Divided into three parts, the book covers cost fundamentals, optimization techniques in government operations, and special topics like productivity measurement and quality control.

Rainer Kleber ,2022: In this article focuses on delves into inventory management in dual sourcing commodity procurement, particularly focusing on operational hedging using multiperiod option contracts and spot markets. It introduces a mean-reverting price model to replace the typical assumption of independent and identically distributed prices, considering inter-temporal price- price and demand-price correlations.

Sunil Luthra, 2022 In this article focuses on discusses the optimization of procurement and purchase order processes in the footwear industry through the implementation of Visual Basic for Applications (VBA) in MS Excel. By automating manual reporting tasks, including procurement reports and purchase orders, the study significantly reduces processing time and minimizes the risk of errors. Time studies indicate a 75% reduction in procurement report completion time and a drastic decrease in the time required to generate purchase orders.

Rohit Maury ,2022: In this article focuses on E-procurement is a digital

platform that automates the procurement process by integrating technology, communication, and supply chain management. It streamlines requisitioning, sourcing, bidding, contract management, and supplier relationship management, eliminating manual paperwork and enhancing efficiency. This centralized platform allows users to create and manage procurement

requests, collaborate with suppliers, and track the entire procurement lifecycle electronically.

Kushwaha Rubel 2022: In this article focuses on significance of efficient inventory management in supply chain operations. The paper advocates for the integration of ERP systems to streamline processes like demand management, material requirement planning, and procurement, ultimately optimizing inventory levels. Additionally, it proposes a Genetic Algorithm (GA) approach to enhance inventory control and decrease transaction costs.

Olanrewaju Stephen Olaseni's 2022 In this article focuses on investigates the optimization of procurement processes through automation, focusing on a case company's procurement activities. The study utilizes a qualitative case study approach, incorporating primary data from direct observation and interviews with procurement representatives. By analysing the current procurement process, the thesis concludes that implementing an e-procurement strategy can significantly enhance efficiency and overcome challenges by automating key procurement activities. Additionally, Bernardo Nicoletti's work defines the procurement cycle and its processes, emphasizing the physical, financial, and information flows involved.

Virginia Simón-Moya ,2023: This article explores how artificial intelligence (AI) can transform the purchasing function within companies, offering opportunities for strategic decision-making and collaboration. Through a qualitative analysis based on multiple case studies of AI technologies such as automated purchasing systems, decision support tools, and supplier relations management platforms, the study highlights the potential for AI to optimize processes, redefine the role of purchasers, and enhance supplier relationship management.

K Mugilan ,2023: This study focuses on optimizing procurement processes in metropolitan counties in Kenya, aiming to improve transparency, competition,and accountability in line with the Public Procurement and Disposal Act (2015). By

examining the influence of order fulfilment and cost reduction on county performance, the research highlights the importance of efficient procurement practices.

PERCENTAGE ANALYSIS

Research questions are always answered with a descriptive statistic: generally, either percentage or mean. Percentage is appropriate when it is important to know how many of the participants gave a particular answer. Generally, percentage is reported when the responses have discrete categories. ANALYTICAL

TOOLS(SPSS)

Tools for testing the hypothesis (SPSS)

CHI- SQUARE TEST T-TEST
CHI- SQUARE TEST

The Chi-Square Test could categorize payment timelines and vendor relationship quality into two groups:

a) Before Automation.

b) After Automation.

The count of occurrences in each group using chi-square test will determine if there is a significant difference in the distribution of payment timelines and vendor relationship quality before and after automation.

Metrics/ performance indicators utilized to assess the cost-effectiveness of supplier relationships is. * Ongoing initiatives/practices aimed at continuously improving budget control processes within the procurement function.
Crosstabulation

			Ongoing initiatives/practices aimed at continuously improving budget control processes within the procurement function						
				Disagree	Highly Satisfied	Neutral	Satisfied	Strongly disagree	Total
Metrics/ performance indicators utilized to assess the cost-effectiveness of supplier relationships is.	1	Count	3	0	0	0	0	0	3
		Expected Count	.1	.0	1.0	.3	1.5	.0	3.0
	Highly Satisfied	Count	0	1	18	5	17	1	42
		Expected Count	1.0	.3	14.3	4.8	20.8	.7	42.0
	Neutral	Count	0	0	9	4	7	1	21
		Expected Count	.5	.2	7.2	2.4	10.4	.3	21.0
	Satisfied	Count	0	0	12	5	35	0	52
		Expected Count	1.3	.4	17.8	5.9	25.8	.8	52.0
	Strongly disagree	Count	0	0	3	0	2	0	5
		Expected Count	.1	.0	1.7	.6	2.5	.1	5.0
Total		Count	3	1	42	14	61	2	123
		Expected Count	3.0	1.0	42.0	14.0	61.0	2.0	123.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	138.432[a]	20	<.001
Likelihood Ratio	44.522	20	.001
N of Valid Cases	123		

a. 23 cells (76.7%) have expected count less than 5. The minimum expected count is .02.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	1.061	<.001
	Cramer's V	.530	<.001
N of Valid Cases		123	

Chi Square test result:

The result, P- value of the above hypothesis statement is 0.001. This represents that the vendor relationship is improved with the significant changes in the timeline of payments as a result of implementing the automation in the payment process.

Interpretation:

Since the p-value (0.001) is less than the chosen significance level (commonly 0.05), we are rejecting the null hypothesis. This represents that the automation process bought in place to improve the payment processing timeline is helpful in the improving the vendor relationship by making payment on the stipulated timeline.

The evidence obtained through the survey represents that there is a strong association between the implementation of automation and the changes observed in both the timeline of payments and the quality of vendor relationships.

T-TEST:

Objective here is to perform a paired-sample t-test to compare the means of the two groups as below to identify whether the cost reduction is achieved by implementing the financial control measures.

a) Before Implementation of Financial control measures.

b) After Implementation of Financial control measures

The count of occurrences in each group using T – Test will determine if there is a significant difference in the costs before and after implementing financial control measures.

T-Test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Budget control process could be further improved or refined.	123	4.14	1.096	.099

One-Sample Test

Test Value = 3

	t	df	Significance One-Sided p	Significance Two-Sided p	Mean Difference	95% Confidence Interval of the Difference Lower	95% Confidence Interval of the Difference Upper
Budget control process could be further improved or refined.	11.514	122	<.001	<.001	1.138	.94	1.33

One-Sample Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval Lower	95% Confidence Interval Upper
Budget control process could be further improved or refined.	Cohen's d	1.096	1.038	.817	1.256
	Hedges' correction	1.103	1.032	.812	1.248

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation.
Hedges' correction uses the sample standard deviation, plus a correction factor.

T-Test Result:

The result of the T-Test i.e. the p-value is 0.001. This indicates that there is a statistically significant difference in costs before and after the implementation of financial control measures for cost reduction.

Interpretation:
Since the p-value (0.001) is less than the chosen significance level (commonly 0.05), the null hypothesis is rejected.

This is a clear indication that the implementation of financial control measures has led to a significant reduction in costs, which in turn indirectly a cost saving for the organization.

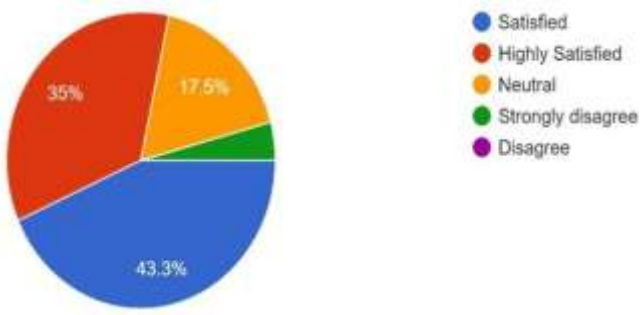
The evidence suggests that there is a strong association between the implementation of financial control measures and the cost reduction in observed.

DATA ANALYSIS AND INTERPRETATION

4.1.7 Table Indicating the Metrics/ performance indicators utilized to assess the cost-effectiveness of supplier relationships is.

S.NO	Particular	No of respondents	Percentage
1	Satisfied	52	43.3%
2	Highly satisfied	42	35%

3	Neutral	21	17.5%
4	Strongly disagree	5	4.2%
5	Disagree	0	0%



Interpretation

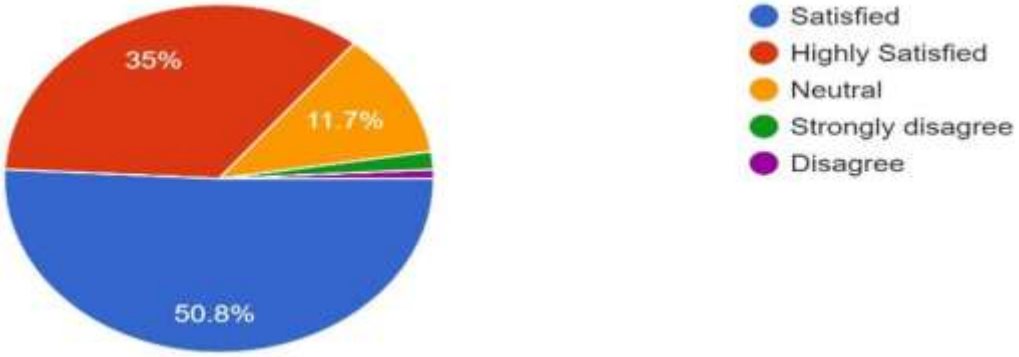
From the above table it is interpreted that the number of respondents were 35% is highly satisfied, 43.3% is satisfied, 17.5% neutral and 4.2% is strongly disagree, 0% is disagree.

Inference

Majority 43.3% of the respondents belong to satisfied. The Metrics/ performance indicators utilized to assess the cost-effectiveness of supplier relationships is.

4.1.16 Table Indicating the Ongoing initiatives/practices aimed at continuously improving budget control processes within the procurement function.

S.NO	Particular	No of respondents	Percentage
1	Satisfied	61	50.8%
2	Highly satisfied	42	35%
3	Neutral	14	11.7%
4	Strongly disagree	2	1.7%
5	disagree	1	0.8%



Interpretation

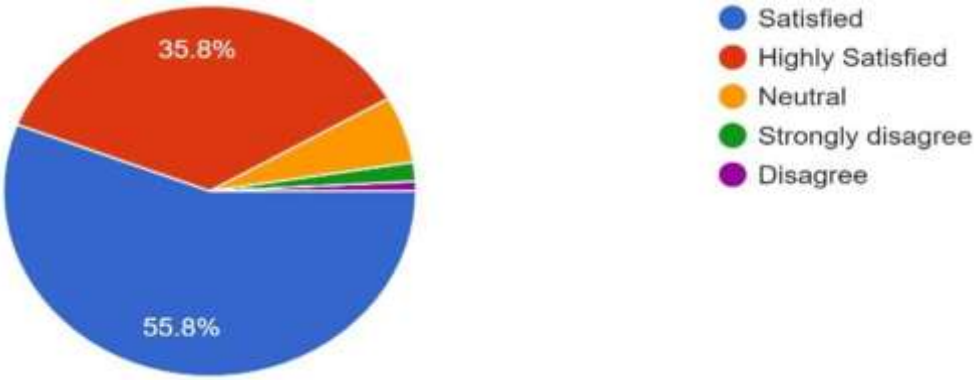
From the above table it is interpreted that the number of respondents were 35% is highly satisfied, 50.8% is satisfied, 11.7% neutral and 1.7% is strongly disagree,
0.8% is disagree.

Inference

Majority 50.8% of the respondents belong to satisfied. The Ongoing initiatives/practices aimed at continuously improving budget control processes within the procurement function.

4.1.17 Table Indicating the Budget control process could be further improved or refined.

S.NO	Particular	No of respondents	Percentage
1	Satisfied	67	55.8%
2	Highly satisfied	43	35.8%
3	Neutral	7	5.8%
4	Strongly disagree	2	1.7%
5	disagree	1	0.8%



Interpretation

From the above table it is interpreted that the number of respondents were 35.8% is highly satisfied, 55.8% is satisfied, 5.8% neutral and 1.7% is strongly disagree, 0.8% is disagree.

Inference

Majority 55.8% of the respondents belong to satisfied. The Budget control process could be further improved or refined.

FINDINGS

Majority 25.8% of the respondents belong to the IT Department.

Majority 70% of the respondents had 1 to 2 years work experience

Majority 48.3% of the respondents belong to satisfied the approval process structured for purchase requirements is helpful.

. Majority 49.2% of the respondents belong to Highly satisfied. The Collaboration maintained with other departments or stakeholders to ensure alignment between procurement activities and overall organizational budget goals for centralized procurement.

Majority 44.2% of the respondents belong to Highly satisfied. The User Requirement /criteria are taken into account when selecting suppliers/vendors to ensure cost efficiency

Majority 45.8% of the respondents belong to satisfied. The Specific negotiation tactics or approaches used to secure favourable terms and pricing with suppliers is helpful.

Majority 43.3% of the respondents belong to satisfied. THE Metrics/ performance indicators utilized to assess the cost-effectiveness of supplier relationships is.

Majority 43.3% of the respondents belong to satisfied. The Metrics/ performance indicators utilized to assess the cost-effectiveness of supplier relationships is

Majority 43.3% of the respondents belong to satisfied. The Steps that organization takes to manage and cultivate relationships with key suppliers.

Majority 40% of the respondents belong to Highly satisfied The Alternative negotiation models or options, such as collaborative partnerships or strategic alliances, explored by your organization

Majority 41.7% of the respondents belong to satisfied The Mechanisms in place to monitor and track procurement expenditures against the allocated budget is.

Majority 44.2% of the respondents belong to satisfied The Strategies / corrective actions implemented when there are budget variances in the procurement process is

Majority 45.8% of the respondents belong to Highly satisfied The Adopting innovative approaches or technologies to enhance budget control in procurement

Majority 45.8% of the respondents belong to Highly satisfied The Adopting innovative approaches or technologies to enhance budget control in procurement

Majority 48.3% of the respondents belong to satisfied The Organization gathering feedback from stakeholders and suppliers to enhance the negotiation strategy is

Majority 50.8% of the respondents belong to satisfied. The Ongoing initiatives/practices aimed at continuously improving budget control processes within the procurement function.

Majority 55.8% of the respondents belong to satisfied. The Budget control process could be further improved or refined

SUGGESTIONS

Centralize the procurement management system to consolidate and to oversee all procurement activities across government and non-government projects to ensure consistency, transparency and negotiating better terms with suppliers.

Negotiate favourable terms, establish long-term contracts where appropriate, and conduct regular performance evaluations to ensure quality and reliability

Maintain cost allocation and budget management across government and non-government projects.

Conduct regular audits and compliance reviews to ensure the procedures is followed and cost is saved.

Automate the procurement process as same as payment process brought in place to save time and cost to organization, increase department efficiency and for maintenance of digital records.

CONCLUSION

This project is submitted with the aim to analyse the procurement policy and financial control of the organization and to provide suggestion wherever possible in order to improve the cost efficiency and financial control while balancing the unique requirements of government and non – government projects in this organization.

By following the recommendations given in this study, the organization can enhance transparency, mitigate risk and achieve a sustainable value creation across the procurement and financial aspects.

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