

# A Study On Factors Influencing B2b Purchase Decisions In Industrial Engineering Services On Fives India Engineering And Project Private Limited

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**Abstract-** *Business-to-Business (B2B) purchase decisions play a significant role in industrial engineering services, where organizations select suppliers and service providers to improve operational efficiency and achieve organizational goals. The purchasing process involves evaluating several factors such as service quality, technical capability, supplier reliability, pricing, delivery performance, and customer support. This study aims to identify the major factors influencing B2B purchase decisions in industrial engineering services and examine their impact on customer satisfaction. The research is descriptive in nature and is based on primary and secondary data. Primary data were collected through a structured questionnaire from 140 respondents. Statistical tools such as Percentage Analysis, Chi-Square Test, and Correlation Analysis were used for data analysis. The findings reveal that service quality, technical expertise, timely delivery, and supplier reliability are the most influential factors affecting purchase decisions. The study concludes that effective supplier selection contributes significantly to customer satisfaction and organizational performance.*

**Keywords:** B2B Purchase Decision, Industrial Engineering Services, Supplier Selection, Customer Satisfaction, Technical Capability.

## I. INTRODUCTION

Business-to-Business purchase decisions refer to the process through which organizations procure products and services from other organizations to support their business operations. In industrial engineering services, purchasing decisions are often complex because they involve multiple stakeholders and require careful evaluation of supplier capabilities. Organizations focus on factors such as quality, cost, reliability, technical expertise, and service support before selecting suppliers. Industrial engineering service providers play a critical role in improving productivity, operational efficiency, and project performance. Therefore, understanding the factors that influence B2B purchasing decisions is essential for maintaining strong business relationships and ensuring customer satisfaction. This study focuses on

identifying the major determinants of B2B purchase decisions and their impact on customer satisfaction.

## INDUSTRY PROFILE

The industrial engineering services sector contributes significantly to manufacturing, automotive, energy, steel, and infrastructure industries. The sector provides specialized services including engineering design, project management, process optimization, automation, and technical consultancy. Organizations operating in this industry function mainly in a B2B environment where services are provided to industrial clients.

The industry is highly competitive and technology-driven. Companies continuously focus on innovation, quality improvement, sustainability, and customer-oriented solutions to remain competitive. Service quality, technical expertise, cost-effectiveness, and timely project execution are considered critical success factors within the sector.

## COMPANY PROFILE

The study was conducted in a leading industrial engineering organization located in Chennai, Tamil Nadu. The company provides engineering consultancy, project management, automation solutions, and industrial process services to various manufacturing sectors. The organization focuses on improving industrial productivity and operational efficiency through advanced engineering solutions. The company serves industries such as manufacturing, steel, cement, aluminium, and energy. Its strong emphasis on technical excellence, innovation, customer satisfaction, and quality standards has enabled it to establish a significant position in the industrial engineering sector.

## OBJECTIVES OF THE STUDY

### Primary Objective

To study the factors influencing B2B purchase decisions in industrial engineering services.

## Secondary Objectives

- To identify the key factors affecting supplier selection.
- To analyze the importance of service quality and technical capability.
- To examine the influence of pricing and financial considerations.
- To evaluate the impact of delivery performance on purchase decisions.
- To study the relationship between purchase decision factors and customer satisfaction.
- To provide suggestions for improving supplier selection effectiveness.

## II. REVIEW OF LITERATURE

- Bilgili and Dinç (2022) reported that price, quality, technical capability, and supplier reliability significantly influence industrial buying decisions.
- Moriarty and Spekman (1984) emphasized that supplier reputation and technical information play a major role in organizational purchasing behavior.
- Grünbaum et al. (2013) found that trust and long-term business relationships are important determinants in B2B service purchasing decisions.
- Raychaudhuri and Garg (2016) concluded that brand image and supplier reputation reduce perceived risk and improve purchasing confidence.
- Verma and Joshi (2022) highlighted that delivery performance, technical expertise, and after-sales support are essential criteria in supplier evaluation.

## III. RESEARCH METHODOLOGY

The study adopted a descriptive research design to understand the factors influencing B2B purchase decisions.

### DATA COLLECTION

**Primary Data:** Structured questionnaire.

**Secondary Data:** Journals, books, websites, and company records.

### SAMPLE SIZE

A total of 140 respondents participated in the study.

### SAMPLING TECHNIQUE

Simple Random Sampling method was used.

### Statistical Tools

Percentage Analysis

Chi-Square Test

Correlation Analysis

## IV. DATA COLLECTION AND INTREPRETATION

- Majority of the respondents are male employees.
- Most respondents belong to the age group of 25–30 years.
- Project Managers form the highest number of respondents.
- Manufacturing sector contributes the highest number of responses.
- Service quality is considered an important factor in supplier selection.
- Technical capability highly influences B2B purchase decisions.
- Reliability of services and products is important for supplier selection.
- Consistency in service delivery helps build customer confidence.
- Compliance with industry standards is valued by most respondents.
- Competitive pricing influences purchasing decisions.
- Cost-effectiveness is preferred over low pricing alone.
- ROI is considered important in decision making.
- Budget control plays a significant role in procurement activities.
- Flexible payment terms support effective financial management.
- Timely delivery is a major factor influencing supplier selection.
- Meeting deadlines is essential for project success.
- Supplier reputation positively affects purchase decisions.
- Trust between buyer and supplier supports long-term relationships.
- Technical expertise of suppliers is highly valued.
- Most respondents are satisfied with supplier service quality and the overall supplier selection process.
- Chi-Square analysis shows a significant association between B2B purchase decision factors and customer satisfaction.

- Correlation analysis indicates a positive relationship between B2B purchase decision factors and customer satisfaction.

## CHI-SQUARE ANALYSIS

### Null Hypothesis ( $H_0$ )

There is no significant association between factors influencing B2B purchase decisions and customer satisfaction.

### Alternative Hypothesis ( $H_1$ )

There is a significant association between factors influencing B2B purchase decisions and customer satisfaction.

The Chi-Square analysis produced a significance value of 0.021, which is less than the standard significance level of 0.05. Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted. This indicates a significant association between B2B purchase decision factors and customer satisfaction.

## CORRELATION ANALYSIS

The correlation coefficient value was found to be  $r = 0.742$ , indicating a strong positive relationship between B2B purchase decision factors and customer satisfaction.

The analysis shows that improvements in service quality, technical support, supplier reliability, and delivery performance lead to higher customer satisfaction levels. Hence, the alternative hypothesis is accepted.

## V. FINDINGS

- Service quality is considered a critical factor in supplier selection.
- Technical capability significantly influences purchasing decisions.
- Supplier reliability is highly valued by respondents.
- Timely delivery and meeting deadlines are major decision criteria.
- Trust and long-term relationships positively affect supplier selection.
- Supplier reputation plays an important role in reducing purchase risk.
- Cost-effectiveness is preferred over low pricing alone.
- Innovative engineering solutions improve supplier attractiveness.

- After-sales support contributes to customer satisfaction.

## VI. SUGGESTIONS

- Organizations should focus on maintaining high service quality standards.
- Suppliers should continuously enhance their technical capabilities.
- Timely project delivery should be prioritized to improve customer satisfaction.
- Companies should strengthen customer communication and relationship management.
- Regular customer feedback should be collected and analyzed.
- Greater emphasis should be placed on innovation and technological advancement.

## VII. CONCLUSION

B2B purchase decisions in industrial engineering services are influenced by several interrelated factors including service quality, technical expertise, supplier reliability, delivery performance, pricing, and customer support. The findings of the study indicate that organizations prioritize quality, reliability, and technical competence over cost considerations. Statistical analysis confirms a significant relationship between purchase decision factors and customer satisfaction. Therefore, organizations seeking long-term business success should focus on delivering high-quality services, maintaining strong customer relationships, and continuously improving operational performance. Effective supplier selection practices ultimately contribute to enhanced customer satisfaction, competitive advantage, and sustainable organizational growth.

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