

A Study on Supplier Selection

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Abstract - Supplier selection plays a critical role in procurement and supply chain management. Organizations must evaluate suppliers on parameters such as cost, quality, delivery, service, and product development to improve operational efficiency and reduce supply chain risks. This research study focuses on understanding supplier evaluation methods and identifying the most suitable suppliers using a weighted scoring approach. The study analyzes supplier performance for different materials including plating grade materials, painting grade materials, adhesive tapes, paints, and packing materials. Data was collected through questionnaires and comparative analysis of vendors. The results indicate that quality, service, and continuous supplier performance evaluation significantly influence supplier selection decisions. The study concludes that effective supplier selection improves cost control, product quality, and long-term business relationships.

Key Words: Supplier Selection, Procurement, Supply Chain Management, Vendor Evaluation, Weighted Scoring Method, Purchasing Activities.

1. INTRODUCTION

Supplier selection is one of the most important functions in supply chain and operations management. Organizations rely on suppliers for raw materials, components, equipment, and services required for smooth production and business operations. Selecting the right supplier helps organizations maintain product quality, reduce operational costs, improve delivery performance, and achieve customer satisfaction. In today's competitive business environment, companies must establish strong relationships with reliable suppliers to ensure continuous improvement and long-term sustainability.

The supplier selection process involves identifying, evaluating, and selecting suppliers based on different criteria such as cost, quality, service, delivery performance, reliability, and product development capability. An ineffective supplier selection process can lead to poor quality products, production delays, increased costs, and supply chain disruptions. Therefore, organizations use systematic supplier evaluation methods to reduce risks and improve procurement efficiency.

This research study focuses on understanding the supplier selection and evaluation process used in organizations. The study analyzes various supplier selection criteria and examines supplier performance using a weighted scoring method. The research also highlights the importance of continuous supplier evaluation in improving operational efficiency, procurement decisions, and supplier relationship management.

2. Literature Review

Supplier selection is an important activity in procurement and supply chain management because it directly affects product quality, operational efficiency, and customer satisfaction. Various researchers have explained that organizations should evaluate suppliers based on factors such as cost, quality, delivery performance, service, and reliability.

Beil (2009) stated that supplier selection helps organizations reduce procurement risks and improve operational performance. Monczka et al. (2015) explained that effective supplier management improves supply chain coordination and long-term business growth. Chopra and Meindl (2019) emphasized the importance of evaluating suppliers on multiple criteria including quality, delivery, and technological capability.

Different supplier selection methods such as categorical method, weighted point method, and total cost approach are widely used in organizations. Among these methods, the weighted scoring method is considered effective because it allows comparison of suppliers based on assigned evaluation criteria.

3. RESEARCH METHODOLOGY

The study uses a descriptive research design and case study approach to understand the supplier selection and evaluation process followed in organizations. Data for the study was collected through questionnaires, supplier evaluation records, and comparative vendor analysis. Both primary and secondary data sources were used for the research.

The suppliers were evaluated on four major criteria: cost, quality, service, and product development. A weighted scoring method was used to compare supplier performance and identify the most suitable supplier. Different weights were assigned to each criterion based on their importance in the purchasing decision process.

The weighted score formula used in the study is:

$$\text{Total Score} = (\text{Cost} \times 4) + (\text{Quality} \times 3) + (\text{Service} \times 2) + (\text{Product Development} \times 1)$$

The collected data was analyzed using ratings, tables, and comparative analysis techniques to evaluate supplier performance and support effective procurement decisions.

4. DATA ANALYSIS AND FINDINGS

The supplier evaluation process was conducted for various categories of materials. Vendor performance was compared using weighted scores. The findings indicate that Vendor B performed better in most categories due to superior quality, service, and product development capabilities. For paint materials, Vendor B achieved the highest weighted score of 83.5. The analysis shows that organizations should not rely only on cost while selecting suppliers, but should also consider quality, service support, and innovation capabilities.

Vendor	Items Supplied	Rating	Weighted Score
Styrolution	Plating Grade Materials	7.5	79
Covestro	Plating Grade Materials	8.5	81
Avery Dennison	Adhesive Tapes	7.5	79
Asian PPG Paints	Paint Materials	9	83.5
Swastik Packaging	Packing Materials	9	81

Table 1: Final Vendor Performance Evaluation

5. CONCLUSIONS

Supplier selection is a strategic activity that significantly affects organizational performance. The study highlights that supplier evaluation should be based on multiple criteria rather than only price. The weighted scoring method provides a systematic approach for selecting reliable suppliers. Organizations that continuously monitor supplier performance can improve operational efficiency, reduce risks, and strengthen long-term supply chain relationships.

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