**Original Research Article**

**Purchase Procedure and Supplier Evaluation for Food Processing Firms in Gujarat**

## ABSTRACT

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| The food processing industry, both globally and in India, is rapidly evolving due to rising consumer demand for safe, high-quality, and convenient products. India, as a major agricultural producer, holds a key position in the global food supply chain, especially in the growing frozen food segment.This study focuses on supplier evaluation and the procurement process at a large frozen food manufacturer in Gujarat. It examines the company's structured procurement system, emphasizing transparency, stability, and strict compliance with food safety and quality standards. The procurement team closely coordinates with production, quality control, and new product development.Based on feedback from 20 industry professionals using the Henry Garrett Ranking method, product quality ranked as the top supplier selection criterion, followed by price and delivery accuracy.. This study provides a practical framework for supplier evaluation in the food processing sector, helping firms enhance procurement strategies, strengthen supply chains, and improve audit performance. |

*Keywords: supply chain, procurement process, supplier evaluation, Evaluation criteria*

## INTRODUCTION

Within frozen food industry, the procurement department plays a vital role in the global economy by transforming agricultural products into value-added, safe, and ready-to-consume food items. In recent years, this sector has experienced significant growth, driven by changing consumer preferences, increasing demand for quality assurance, and the need for operational efficiency (Funde& Shrivastava, 2023). In India, the food processing industry holds a prominent position, supported by the country’s rich agricultural base and expanding domestic and international markets (Calare &Paspasan, 2024).

As a crucial link between raw material suppliers and production units, ensuring the timely and cost-effective availability of quality ingredients essential for maintaining product standards. Effective procurement practices directly influence product quality, operational costs, supply chain efficiency, and customer satisfaction. Given the perishable nature of raw materials and the strict regulatory requirements in food processing, procurement decisions must be strategic, transparent, and aligned with safety and quality norms. (Dua& Sahu, 2024)

Supplier evaluation is a key component of the procurement process, as it helps identify reliable vendors, ensures consistency in supply, and mitigates risks associated with quality failures or delivery delays(Asamoah *et al.* 2016). By adopting systematic evaluation methods, firms can enhance supplier relationships, optimize procurement performance, and maintain a resilient supply chain (Kamath & Naik, 2018).

## 2. OBJECTIVES OF STUDY

1) To study the process of raw material purchasing in frozen food manufacturing firm

2) To determine the important criteria to evaluate suppliers in food processing firms

## 3. RESEARCH METHODOLOGY

The study on Purchase Procedure and Supplier Evaluation for Food Processing Firms in Gujarat was carried out using the multi stage sampling technique. First objective was studied by observation and understanding responsibilities a procurement department. For the second objective, 20 food processing firms were selected for the study. Got a response from purchase manager or purchase head, analyzed that data with the help of Henry garret ranking method in this strategy involved asking respondents to rank all of the factors. The following Garrett formula was used in the first stage to get the percent position of each rank:

Percent Position= = $\frac{100 (Rij-0.5)}{Nj}$

Where,

Rij= Rank given for ith item by the jth individual

Nj= Number of items ranked by jth individual

## 4. RESULTS AND DISCUSSION

**4.1 To study the process of raw material purchasing in frozen food manufacturing firm**

**4.1.1 Key activity of the purchase department**

1. Initiation of purchase for raw material and packaging material

In the dynamic world of business, effectively managing the flow of goods and services from production to consumption is paramount. This involves a delicate balance between anticipating future demand, responding to current customer needs, and orchestrating the production process to meet both. Three key elements play crucial roles in this intricate dance: forecasting, customer orders, and production planning. While distinct in their function, they are inextricably linked, forming a critical chain that ensures a business can operate efficiently and profitably.

2. The Production plan (weekly) shall be made by the production manager and a copy is submitted to purchase department.

3. The total ingredients required as per the plan are determined using the recipes.

4. The changes in production plan communicated to purchase department as and when changes happen.

5. Depending upon production plan the procurement is done as follows:

Dry ingredients, spices, oils like dry and non-perishable items are procured before one week.

Fruits & vegetables are perishable materials, procurement is done 1 day in advance.

**4.1.2 Procurement process of past purchase raw material**

There are different procurement procedures for previously purchased raw materials and new or first-time purchasing raw material. Previously purchased raw materials are ingredients that have already been used in various recipes in the past.

For past purchase materials, multiple suppliers are usually available, so there is no need to perform a finding suppliers, requesting samples and a new vendor creation process. This procedure begins when a demand is raised by the production plant (kitchen).

**1. Demand from kitchen and prepare specification of product**

The procurement process begins with the purchasing unit identifying the need, followed by an internal review of the technical and financial requirements.

Items, equipment, materials, and components required at the manufacturing site are recognized and requisition is prepared for the same.

This requisition is then sent to store department for further verification on availability of them in store. This requisition is a formal document with specific document number and is called

Material Requisition or Material Indent. Store department checks the availability of this material. In case the material is available in store, the same is issued with an issue note.

However, if the said material is not available in the store, then another requisition needs to be raised. This requisition is called Purchase Requisition. The same is raised by store department

and is sent to purchase department for further action. Aim of specification is increase food safety and make a frozen food product quality high. Product specification is usually created **Fig.1 Purchase procedure for past purchase material (Existing Suppliers)**

by the Purchasing Department, together with the Quality Assurance (QA) Team in a frozen food company. Purchasing Team decides what to buy and from whom and Quality Team makes sure the products are safe, high quality, and meet food laws.

**2. Get quotation, supplier selection, negotiation and Performa invoice**

The company asks different suppliers to send their prices and product details for comparison. Based on price, quality, and reliability, the best supplier is chosen from those who sent quotations. The company and selected supplier discuss terms like price, delivery time, and payment. Then, the supplier sends a proforma invoice (a pre-bill) that includes the final agreed details before placing the order.

Quotation → helps in choosingthe best supplier → then negotiate terms → finalized with a proforma invoice before the actual purchase.

**3. Purchase order, expedite order and follow up**

A formal document sent to the supplier confirming the order details (product, quantity, price, delivery date) is called Purchase order. The buyer checks in with the supplier to ensure the order is being processed and will be delivered on time. Continuous communication is maintained until the goods are received, checking for delays or issues.

The purchase order confirms the deal → the buyer expedites the order to track progress → regular follow-up ensures on-time and correct delivery.

**4. Receiving and Inspection**

The quality team checks the received materials for defects, quantity, and compliance with specifications. Then, receipt note prepared by the stores/warehouse team to confirm the receipt of materials as per the purchase order and physical verification. Gate entry in where details of incoming materials (vehicle number, supplier name, invoice details) are recorded at the security gate.

**5. Submit PI, PO with Receiving Notes in Account Department & Payment of Invoice to supplier**

After materials are received and inspected, the PI, PO and Receiving Notes are submitted to the Accounts Department for verification. Once matched and approved, the Invoice Payment is processed to the supplier.

**6. Maintain records and maintain vendors**

Maintain records is a process of systematically storing and organizing all transaction-related documents, such as purchase orders, invoices, and receiving notes, for future reference and auditing.

Maintain Vendors is a Managing and updating vendor information, including contact details, payment terms, and performance records, to ensure smooth and efficient procurement operations.

**4.1.3 Procurement process for first time buy raw material**

This process is time-consuming and involves coordination with the New Product Development (NPD) Department. The Purchase Department reaches out to multiple suppliers, collect a samples from them and give them to NPD for approval.

Potential sources for the raw material are then explored, and samples are obtained for NPD evaluation. These samples undergo further QC testing to verify compliance with specifications. Upon approval, a raw material risk assessment is conducted to evaluate quality, safety, and regulatory concerns.

Suitable suppliers are identified and asked to fill out a Supplier Information Form, after which they undergo an audit or submit a self-assessment to validate their compliance and capabilities.

If found satisfactory, the specifications are finalized and trial samples are ordered. These trial samples under go another QC check, and if cleared, are used in commercial trial production by the NPD team.

Successful batch trials lead to supplier evaluation and final selection, after which the supplier is approved and added to the vendor list.

**Fig.2 Procurement process for first time buy raw material**

A proforma invoice is then collected, and a purchase order (PO) is issued. Upon receipt of the material, payment is processed, and the supplier is continuously evaluated as per the scheduled audit plan toensure ongoing compliance and performance. This interlinked process ensures quality, traceability, andreliability of new raw materials before full-scale procurement.

**4.1.4 Establish contract with raw material supplier**

The company establishes a structured and reliable yearly contract for raw materials that experience frequent price fluctuations, in order to ensure cost stability and secure uninterrupted supply This type of contract ensure consistent supply, cost efficiency, and quality compliance, while minimizing procurement risks and enhancing supplier collaboration.

**Steps of establish contract with raw material supplier**

1. Identify Key Raw Materials (with price volatility)

2. Forecast Annual Requirement (based on production plan)

3. Review Approved Vendor List (AVL)

4. Request Quotations from Qualified Suppliers

5. Evaluate and Negotiate Commercial Terms

 → Price, MOQ, Delivery Terms, Credit Period

6. Define Quality Specs and Sampling Procedures

7. Draft Annual Contract (including all terms)

8. Internal Review & Approval (Purchase, QC, Finance)

9. Sign Contract with Supplier

10. Share Tentative Delivery Schedule / Forecast

11. Monitor Supplier Performance (Monthly/Quarterly)

12. Mid-Year Review (adjust terms if needed)

13. Year-End Evaluation and Renewal Decision

**4.1.5 Inventory Forecast for Raw Material in a Frozen Food Firm**

1. Analyze Sales Forecast & Production Plan

Estimate finished goods demand based on historical sales, seasonal trends, and marketing plans.

Convert this into raw material requirements using Bill of Materials (BOM) for each product.

2. Classify Raw Materials

Group items into categories:

High usage (A) – e.g., vegetables, dairy ingredients

Moderate usage (B) – spices, flavours

Low usage (C) – specialty or imported ingredients

3. Calculate Lead Time & Safety Stock

Determine average supplier lead time for each raw material

Calculate safety stock to avoid shortages due to delays or demand fluctuations.

4. Apply Inventory Forecasting Methods

Choose the best-fit method:

Time Series Analysis – Based on past consumption trends.

Moving Average or Exponential Smoothing – For stable demand items.

Demand-Driven Forecasting – For promotional/seasonal products.

5. Monthly/Quarterly Consumption Planning

Forecast monthly or quarterly raw material needs.

Adjust for promotions, holidays, and seasonal spikes (e.g., summer demand for frozen fruits).

6. Generate Procurement Plan

Align forecast with procurement cycles.

Plan bulk buying for high-usage items to optimize cost and logistics.

7. Monitor & Update Forecast Regularly

Compare forecasted vs. actual consumption.

Adjust forecasts monthly based on deviations and changes in market demand.

**4.2 TO DETERMINE THE IMPORTANT CRITERIA TO EVALUATE SUPPLIERS IN FOOD PROCESSING FIRMS**

Results presented in Table 1 after the analysis of data reveal that ‘Quality of product’ is the most significant factor involved in the evaluation of suppliers in food processing firms with a Garret mean score of 78.40 (1st rank) followed by ‘Product price’ with a mean score of 75 (2nd rank) and ‘Accuracy of delivery’ with a corresponding mean score of 70.36 (3rd rank), rejection & repair service, production facility & capability and Performance history obtained 4th, 5th, 6th rank respectively.

**Table 1: Criteria to** **the evaluation of suppliers in food processing firms**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Criteria** | **Total** | **Garret ranking mean** | **Rank** | **Category** |
| Quality of Product | 1650 | 78.40 | I | Extreme Importance |
| Price | 1548 | 75 | II |
| Accuracy of Delivery | 1494 | 70.36 | III |
| Rejection & Repair Service | 1725 | 67.90 | IV |
| Production Facility & Capability  | 1395 | 63.40 | V |
| Warranties & Claim Polices | 1362 | 61.90 | VI | Considerable Importance |
| Performance History | 1287 | 58.5 | VII |
| Communication System | 1248 | 56.72 | VIII |
| Technical Capability | 1206 | 54.81 | IX |
| Financial Positions | 1113 | 50.59 | X |
| Procedural Compliance | 1050 | 47.72 | XI | Average Importance |
| Reputation and Position in the Industry | 1029 | 46.77 | XII |
| Desire for Business | 1005 | 45.68 | XIII |
| Management and Organization | 942 | 42.81 | XIV |
| Operation Controls | 774 | 35.18 | XV |
| Attitude | 774 | 35.18 | XVI | Slight Importance |
| Impression | 765 | 34.77 | XVII |
| Packing Ability | 720 | 32.72 | XVIII |
| Labor Relation Record | 654 | 29.72 | XIX |
| Geographical location | 591 | 26.86 | XX |
| Amount of Past Business | 483 | 21.95 | XXI |
| Training Aids | 396 | 18 | XXII |

**Table 2: Criteria used most often for supplier evaluation**

|  |  |
| --- | --- |
| Criterion | Key terms used for measurement |
| Quality  | Quality consistency, proactive quality management  |
| Price | Price competitiveness, Price stability  |
| Accuracy of Delivery | On-time delivery, Delivery flexibility |
| Rejection & Repair Service | Rejection rate handling, Complaint resolution time |
| Production Facility & Capability | Capacity adequacy, scalability & expansion potential |

Quality is evaluated based on the consistency of the goods or services provided and the supplier's commitment to proactive quality management, suggesting a focus on preventing issues rather than just reacting to them.

Price is assessed not only on its competitiveness within the market but also on its stability over time, indicating a preference for predictable and reliable pricing structures.

Accuracy of Delivery goes beyond simply delivering on time. It includes on-time delivery performance as well as delivery flexibility, highlighting the importance of a supplier's ability to adapt to changing needs.

Rejection & Repair Service is measured by the rejection rate handling, indicating the supplier's effectiveness in managing defective products or services, and the complaint resolution time, reflecting their responsiveness and commitment to customer satisfaction.

Finally, Production Facility & Capability is judged by capacity adequacy, ensuring the supplier can meet current demands, and their scalability & expansion potential, suggesting a forward-looking assessment of their ability to support future growth.

## 4. CONCLUSION

The raw material purchasing process at frozen food manufacturing firm highlights a strategically designed and highly structured procurement framework tailored for efficiency, quality assurance, and regulatory compliance. By integrating cross-functional collaboration with New Product Development and Quality Control teams, as well as employing data-driven forecasting and supplier evaluation techniques, the firm ensures seamless procurement operations.

Quality, Price, and Delivery Accuracy, rejection & repair service, Production Facility & Capability are the top five supplier selection criteria, confirming the critical need for dependable, cost-effective, and timely supply chains in food processing.

## 5. SCOPE OF FUTURE RESEARCH

## Future studies could explore several avenues, including investigating how emerging technologies like blockchain, AI, and IoT can enhance raw material traceability, quality control, and supply chain transparency in the frozen food industry; the integration of sustainability criteria into supplier selection, including environmental impact, ethical sourcing, and social responsibility; strategies for mitigating risks in the raw material supply chain, such as those related to climate change, geopolitical instability, and pandemics; the role of collaborative relationships with suppliers in improving raw material quality, ensuring delivery accuracy, and fostering innovation; the influence of changing consumer preferences, such as the demand for organic, non-GMO, or locally sourced ingredients, on raw material procurement strategies; and how frozen food companies can build more resilient supply chains to withstand disruptions and ensure a consistent supply of raw materials.

**COMPETING INTERESTS DISCLAIMER:**

Authors have declared that they have no known competing financial interests OR non-financial interests OR personal relationships that could have appeared to influence the work reported in this paper.

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