

# Supply Chain Management In the Restaurant Industry

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## Introduction

There are numerous obstacles that restaurants encounter as they grow, but food inflation has become a particularly severe concern for the industry, particularly in context of supply interruptions triggered by the COVID-19 outbreak. Food inflation, defined as the rate at which food prices rise, has experienced significant rises, with restaurant food inflation hitting 8.8% year over year in March 2023 (Justin Guinn, 2023). This considerable rise can be due to supply shortages and instability in raw material prices, which have forced restaurants to reconsider their operational strategies. As these establishments strive to maintain profitability and customer satisfaction amidst rising costs, the importance of effective management becomes increasingly clear.

In this setting, Supply Chain Management (SCM) appears as an important component in addressing the challenges posed by food inflation. According to research done by Lisa Ross (2023), 79% of companies with high-performing supply chains saw increased revenue growth, demonstrating the necessity of restaurants to adjust their supply chain strategies. In a competitive market where customer demands for timely and quality service are rising, effective SCM not only mitigates the impact of food inflation but also positions restaurants for long-term success. By enhancing product quality, controlling costs, and improving operational efficiency, SCM plays a crucial role in helping restaurants navigate these turbulent economic conditions. This paper will review how SCM helps resolve food inflation, improve operational efficiency, and enhance customer experiences.

## Restaurants and Supply Chain Management Practices

### I. Rising food inflation effects

Food inflation has been one of the most significant economic difficulties facing the restaurant business since the COVID-19 pandemic. As prices surged in 2021, restaurants faced rising costs linked to labor shortages and transportation delays. This inflation not only put pressure on their profitability but also led to difficult decisions about menus, potentially limiting the originality of experiences.

Food inflation has severely affected profit margins across the restaurant industry. Restaurant owners are now forced to pay substantially more for core ingredients, leading to increased costs and reduced profitability. Erin Smith, the chef and co-founder of Feges BBQ in Houston, reported that the cost of brisket has risen by 45% since 2020, a sharp increase that has significantly impacted her business operations. As a result, Feges BBQ had to raise the price of brisket from \$20 to \$28 per pound to offset the cost, a pattern mirrored across the industry (Smith, 2021).

Moreover, a survey conducted by the National Restaurant Association in September 2021 found that 91% of restaurant operators reported higher food costs as a percentage of

sales compared to pre-pandemic levels. Additionally, 85% of operators noted that their profit margins were lower than they had been prior to COVID-19, with 65% indicating that their restaurants were less profitable in September 2021 than in June of the same year (National Restaurant Association, 2021). These statistics highlight the direct relationship between food inflation and financial instability within the sector, placing many restaurants, particularly small independent businesses, at risk.

In addition to financial strain, food inflation has forced restaurants to rethink their menu offerings, often leading to reduced diversity and creativity. The rising cost of premium or imported ingredients has resulted in restaurants either modifying their menus or removing high-cost items altogether. For example, Manabu “Hori” Horiuchi, a chef at Kata Robata in Houston, has experienced dramatic price hikes on key ingredients like ikura (salmon roe) and king crab. The cost of king crab increased from \$25 to \$60 per pound, prompting Horiuchi to remove the king crab roll from the menu while raising prices for other dishes containing the ingredient (Horiuchi, 2021).

This shift in menu design is reflected in the industry-wide trend of "menu engineering," where chefs and restaurant operators are adapting their menus to balance rising costs and customer expectations. Restaurants like Rose Mary in Chicago have had to scale back on introducing new dishes due to supply chain limitations. Similarly, 88% of fine dining and 81% of casual dining operators in the U.S. reported that they changed their menu offerings due to food supply delays or shortages (National Restaurant Association, 2021). Such reductions in menu diversity affect both customer satisfaction and restaurant's competitive edge which can lead to a loss of brand identity and their long-term positioning in a highly competitive market.

A key factor driving food inflation has been the breakdown of global and domestic supply chains. Restaurants across the country have experienced significant disruptions due to transportation delays, a lack of labor, and shortages of critical resources like packaging and pallets. Mark Witte, an economics professor at Northwestern University, notes that while the prices of certain ingredients like olive oil or saffron may not have increased due to scarcity, the cost of transporting these items to market has risen significantly due to bottlenecks in the transportation system. Witte emphasizes that the overstretched transportation network is a primary driver of food inflation, as businesses are forced to pay more to move products to their final destinations (Witte, 2021).

The National Restaurant Association's 2021 survey revealed that 95% of restaurants experienced supply delays or shortages of key food or beverage items, further complicating efforts to maintain profitability (National Restaurant Association, 2021). Labor shortages have contributed to these disruptions, affecting not only transportation but also food harvesting and processing. These challenges have disproportionately affected restaurants that rely on fresh, imported, or high-end ingredients. For instance, Horiuchi's sushi restaurant, which imports seafood from Japan, has been particularly vulnerable to soaring shipping costs (Horiuchi, 2021). The shortage of workers in both the transportation and agricultural sectors has led to slower delivery times and limited product availability, making it increasingly difficult for restaurants to maintain consistent menu offerings.

The impact of food inflation on the restaurant industry has been profound, affecting every aspect of operations from profitability to menu planning and supply chain management. Due to labor shortages and shipping delays, rising food costs have put tremendous financial pressure on restaurants, causing them to adjust menu pricing, simplify their offers, and make difficult decisions about which menu items to retain. As a result, many establishments are struggling to maintain their pre-pandemic profitability levels while also grappling with diminished customer satisfaction due to reduced menu diversity.

## II. Supply Chain Management Strategies

In the restaurant industry, effective supply chain management (SCM) is essential for operational success. This section will outline and introduce key SCM strategies, focusing on managing supplier relationships, optimizing inventory and resources, and leveraging technology for demand forecasting which are crucial for navigating market challenges and retaining a competitive edge.

Managing supplier relationships is critical to ensuring a consistent supply of high-quality ingredients while also preserving operational efficiency. According to Koplin (2007), strategic supplier partnerships enhance revenue, asset utilization, and customer satisfaction. As an example, according to Arshinder (2008) joint planning with suppliers helps eliminate excess inventory and reduce production costs which allows restaurants to better handle fluctuations in demand and reduce waste without sacrificing product quality.

In the process of forging close ties with suppliers, restaurants need to foster direct communication and interaction, which are crucial to establishing reputable relationships. Lin et al. (2005) emphasize that developing an engagement framework with suppliers is crucial for accessing critical resources and setting quality goals. In a market where trends and demands shift on a daily basis, establishments can utilize long-term partnership with suppliers to ensure that their pricing remains constant. Moreover, effective supplier management ensures that suppliers deliver accurate, timely, and quality products, which is essential for maintaining operational stability (Nanyunja et al., 2016).

Effective inventory management is crucial for optimizing resource utilization and minimizing costs.

Buffer stock holding is another key approach included in inventory management practices. This strategy helps manage demand swings and out of stocks issues. As noted by Mogire (2019), maintaining appropriate buffer stock levels prevents stockouts and allows for smooth operations even during unexpected demand surges. However, excessive inventory can lead to waste and reduced supplier performance, highlighting the need for careful inventory control (Nanyunja et al., 2016). For that reason, this method isn't widespread nowadays, and restaurants are intrigued in other strategies that are more productive.

Additionally, adopting automated inventory management systems, such as e-procurement, can streamline ordering processes and improve stock accuracy. By reducing manual errors and improving efficiency, these systems help restaurants maintain optimal inventory levels and reduce operational costs (Kim, 2006).

Advanced technologies play a critical role in enhancing demand forecasting accuracy. AI-powered tools, for instance, can analyze vast amounts of data to predict demand more accurately, reducing the risk of stockouts and overstocking (Liu, Ou, & Hung, 2010). These tools enable restaurants to anticipate customer needs and adjust inventory levels accordingly, leading to more efficient operations.

Moreover, autonomous logistics technologies, such as automated guided vehicles can improve delivery speed and reliability. According to Schniederjans, Schniederjans, & Schniederjans (2015), these technologies are especially beneficial for managing deliveries in hard-to-reach areas or during emergencies. By integrating these technologies, restaurants can enhance their supply chain efficiency and reduce costs associated with transportation and inventory management.

Incorporating predictive analytics and optimization algorithms further also improves routing and demand forecasting practices which may lead to increased efficiency and cost savings (Frohlich & Westbrook, 2001). These technological advancements help restaurants respond to market changes more effectively and maintain a competitive edge in the industry.

In summary, effective supply chain management strategies are essential for restaurants to optimize their operations and maintain profitability. By managing supplier relationships, optimizing inventory and resources, and adopting advanced technologies, restaurants can enhance their operational efficiency, reduce costs, and improve performance.

## **Impact of Supply chain management on operational efficiency**

### **I. Background on operational efficiency**

Efficiency, in definition, refers to the ability to perform tasks effectively within the shortest amount of time while still optimizing the use of resources. In the context of operations, it means streamlining processes to achieve high-quality output with minimal waste.

It is clear to argue that one of the primary drivers of operational efficiency is supply chain management (SCM). Moreover, research consistently links improvements in SCM to enhanced organizational performance and competitiveness: Bhatti (2016) emphasizes that organizational success is directly connected to SCM improvements, while Andebe (2011) demonstrates that specific SCM methods positively impact overall company performance. Similarly, Suhong, Ragu-Nathan, Ragu-Nathan, and Rao (2014) argue that effective SCM practices improve both competitiveness and organizational outcomes.

Several SCM techniques contribute to driving operational efficiency, including Just-In-Time (JIT) inventory systems, long-term partnerships with suppliers, maintaining a diverse supplier base, stock rotation using First-In-First-Out (FIFO) methods, regular inventory checks, accurate demand forecasting, and setting par levels for reordering. These strategies ensure that resources are used optimally, reducing waste, minimizing cost, and improving workflows.

In summary, operational efficiency is significantly enhanced through effective supply chain management (SCM) practices, which streamline processes and reduce waste. And as organizations adopt supply chain strategies, they not only improve their operational efficiency but also position themselves for greater competitiveness in the market. This leads us to a deeper exploration of specific sourcing and inventory techniques that further enhance operational efficiency.

## II. Benefit of different Sourcing Techniques

First, in the group of sourcing techniques, Just-in-time (JIT) inventory is an essential technique where deliveries are scheduled so that ingredients arrive exactly when needed for production, avoiding the need to store large quantities of inventory. By reducing on-site inventory, JIT minimizes the risk of spoilage, limits the amount of storage space required, and frees up capital. JIT helps control costs by reducing the need to purchase and hold excess stock. Additionally, the technique leads to smoother kitchen operations, as it ensures that fresh ingredients are always available and used promptly. As Andreas Mettler explains, "JIT ensures that restaurants don't have excess inventory taking up space or tying up capital in unnecessary stock, while also reducing the chance of spoilage". Showing that focusing on just what is needed, restaurants can lower food waste and optimize their workflow.

Next, building long-term relationships with trusted suppliers is a strategic move that can significantly benefit restaurant operations. Long-term suppliers become familiar with a restaurant's specific needs and preferences, leading to more reliable service and a consistent quality of ingredients. Maintaining these relationships ensures that the restaurant can depend on timely deliveries and negotiated pricing, helping to stabilize costs. These partnerships also contribute to smoother operations by minimizing the risk of supply disruptions. "A reliable supplier not only delivers on time but also ensures that the restaurant receives high-quality products, contributing to operational efficiency and cost savings" (Mettler, 2022). Applying such strategy can help restaurants to secure consistent product quality, avoid delays, and reduce operational bottlenecks.

While long-term relationships with suppliers are important, having a diverse supplier base can also assist in mitigating the risks associated with relying on a single source. By working with multiple suppliers, restaurants can ensure a continuous supply of ingredients even when one supplier faces disruptions or stock shortages. This technique provides flexibility and resilience in the supply chain. "Having a diverse supplier base allows restaurants to adapt quickly to market fluctuations and unexpected changes in supply, ensuring smooth operation even during challenging times" (Mettler, 2022). This diversity may also foster competitive pricing opportunities, as restaurants can compare rates across suppliers, further supporting cost control.

JIT inventory is the best practice for restaurants because it directly addresses the challenges of excess inventory and spoilage. By implementing it, restaurants can free up capital that would otherwise be tied up in excess stock, allowing for better cash flow management,

operation flow and waste reduction, making it a superior sourcing technique compared to traditional inventory practices.

Similar to sourcing techniques, a variety of inventory management techniques are also available to enhance restaurant operations. Choosing the right methods can lead to significant improvements in efficiency and cost control, tailored to the specific needs of the restaurant.

### III. Benefit of different Inventory Management Techniques

First-In, First-Out (FIFO) is an inventory management method where older inventory is used before newer stock, ensuring that products are used within their optimal shelf life. This technique minimizes food spoilage and waste, contributing directly to waste reduction and cost control. By using FIFO, restaurants can better manage their inventory levels, which prevents expired stock from accumulating and ensures that dishes are always made with fresh ingredients. As stated by Mettler (2022) "Using the FIFO method helps restaurants maintain product quality and reduces waste, ensuring a more efficient use of resources"

Moreover, conducting regular physical inventory checks and reconciling inventory with system records is also very crucial for maintaining accurate stock levels. These checks help identify discrepancies between what is recorded and what is available, allowing restaurants to avoid overordering or running out of key ingredients. Which was highlighted by Mettler (2022), frequent physical inventory checks allow restaurants to catch issues early, minimizing food waste and ensuring smooth, uninterrupted operations.

Accurate demand forecasting is a proactive inventory strategy that involves predicting future ingredient needs based on historical data and seasonal trends. By aligning inventory with expected demand, restaurants can avoid both overstocking and stockouts, optimizing both supply and cost. Effective forecasting helps reduce waste by ensuring that only the necessary amount of ingredients is ordered, while also preventing shortages that could disrupt kitchen operations. "The more refined the forecast, the more accurate the demand prediction, resulting in fresher ingredients and lower waste from over-ordering" (Mettler, 2022).

Par Levels and Reordering Setting par levels for each inventory item is another strategy used to maintain optimal stock levels. Par levels indicate the minimum quantity of a product that should be on hand. When inventory falls below this threshold, an automatic reorder is triggered to replenish stock. Par-level systems ensure that essential ingredients are always available while preventing excess stock that could lead to spoilage. "By maintaining par levels, restaurants can effectively manage both food costs and kitchen operations, ensuring that ingredients are always available without overspending on inventory" (Mettler, 2022).

Out of all the strategies, conducting regular physical inventory checks is the best practice for restaurants because it directly impacts operational efficiency and cost control. Unlike other inventory methods that may rely solely on digital tracking, regular physical checks provide a tangible assessment of stock, allowing for better decision-making and more efficient

### **Impact of Supply Chain Management on customer satisfaction**

## I. Importance of food consistency and availability

Consistent food quality plays a pivotal role in building customer trust. When diners visit a restaurant, they expect a certain level of taste, presentation, and service each time. Delivering this consistency creates a sense of reliability, which encourages customers to return. On the other hand, inconsistent food quality can lead to disappointment and damage to the restaurant's reputation, especially in the age of online reviews. According to OpenTable, 60% of consumers read reviews before going out for a meal, and 25% more people trust consumer reviews over professional critics. These figures underscore the importance of consistently delivering on customer expectations to ensure positive reviews and recommendations.

The availability of menu items is equally important. Guests expect that the items listed on the menu will be available when they order. Failing to provide popular or signature dishes due to poor inventory management or supply issues can create discomfort. This is particularly damaging given that 75 percent of consumers avoid restaurants with negative reviews about their cleanliness or service quality, including food availability, as reported by a Harris Poll for Cintas Corporation.

Moreover, research shows that meeting customer demands can translate to business growth. A Harvard Business School study found that a one-star increase in a restaurant's Yelp rating can lead to a 5-9% increase in revenue (Michael Luca, 2016). Furthermore, American Express reports that 7 out of 10 U.S. consumers are willing to spend more with companies that provide great service. Another study from the Temkin Group found that a moderate increase in customer experience may lead to an average revenue increase of \$823 million over three years for a company with \$1 billion in annual revenues. The message is clear: a satisfied customer is a loyal and valuable customer.

## II. How SCM enables adapting to changing customer preferences and trends

To meet customer expectations in today's dynamic marketplace businesses must be flexible and responsive to adapt to evolving preferences and trends. Supply Chain Management (SCM) plays a crucial role in enabling this adaptability. This section explores how specific SCM strategies contribute to a business's ability to meet changing customer demands.

Demand forecasting is a critical SCM technique that allows businesses to anticipate customer behavior. As noted by Melissa J. Markley and Lenita Davis (2007), effective demand forecasting allows businesses to react rapidly to market changes and respond quickly to consumer demand. This proactive approach enables businesses to align their inventory levels and production schedules with customer preferences.

Flexible inventory management is essential for adapting to client demands. This strategy enables enterprises to alter stock levels in real time, ensuring they are not overstocking and have access to the right products when needed. Additionally, implementing par level management can be regarded as an effective practice for firms looking to remain flexible and responsive to changes in client preferences.

Strong supplier relationships are also vital for adapting to shifting customer preferences. Maintaining steady and dependable relationships with suppliers is crucial for ensuring that restaurants consistently deliver high-quality meals that meet customer expectations, highlighted by Derrick McMahon (2024). Furthermore, implementing the practice of diversifying a reliable supplier base can also assist in reacting to customer demand. This application enables businesses to source products that align with emerging trends, such as sustainability or organic offerings, which was noted by Jay Altizer (2023), responsible sourcing practices can enhance a restaurant's reputation and attract environmentally conscious customers.

Effective communication within the supply chain is also a crucial aspect for adapting to evolving customer trends. Building strong communication channels with customers ensures that businesses stay informed about market changes and can implement necessary adjustments promptly. Bearnon (2014) emphasizes the importance of a successful communication plan that fosters positive relationships with customers. By maintaining open communication, businesses can gather insights on customer preferences and respond swiftly, thereby enhancing customer satisfaction

Having established how SCM strategies contribute to flexibility and responsiveness in meeting customer demands, it is essential to consider how these practices specifically foster customer loyalty and enhance satisfaction

### III. How SCM contributes to building customer loyalty and enhancing brand perception.

One of the primary ways SCM achieves customer loyalty is through inventory management. Striking the right balance between inventory levels is essential; inadequate supplies can lead to unavailability of popular dishes, creating a negative customer experience. As Christian Berthelsen (2023) notes, effective inventory management ensures that restaurants have the necessary items to meet customer demands, directly influencing customer satisfaction and loyalty. Furthermore, according to Andreas Mettler (2023), timely delivery of quality ingredients is essential for ensuring that restaurants can consistently provide the dishes customers expect. When customers receive what they want when they want it, their perception of the restaurant improves, reinforcing their loyalty.

Quality control is another vital component of SCM that enhances customer loyalty. Integrating performance improvement approaches with supply chain partners allows restaurants to elevate the quality of their offerings (Reade, Emberson, & Storey, 2005). When customers consistently receive high-quality meals, their trust in the restaurant grows, leading to repeat visits and word of mouth.

Strong customer relationships are also crucial for enhancing loyalty. According to Lyman, Tan, and Wisner (2002), actively listening to customer feedback and collaborating on service improvements can significantly affect customer perception. When restaurants engage with their customers, they demonstrate a commitment to meeting their needs, which strengthens customer trust. Moreover, maintaining open internal communication within the organization can enhance staff competency, leading to better customer service and operational efficiency. This internal alignment translates to a more seamless external experience for customers, further improving their perception of the restaurant (Qureshi, Kumar, & Kumar, 2007).



In summary, effective SCM practices are integral to building customer loyalty and enhancing perception. By ensuring adequate inventory, maintaining high-quality standards, fostering strong relationships, and optimizing operations, restaurants can create a positive dining experience that encourages customers to return.

## Conclusion

In conclusion, SCM is essential in the restaurant industry, especially in an environment where food inflation and supply chain disruptions pose significant challenges. By optimizing product quality, controlling costs, and enhancing operational efficiency, SCM plays a crucial role in mitigating these effects and ensuring restaurants remain competitive.

The implications for the industry are clear: investing in robust SCM strategies not only helps restaurants manage immediate economic pressures but also positions them for long-term success. As the market evolves, future research should explore innovative SCM practices and technologies that could further support restaurants in adapting to changing consumer preferences and supply chain dynamics. Ultimately, SCM is not just a response to current challenges; it is a long-term strategic advantage that is critical for success in the evolving environment of the restaurant industry.

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