

# A CASE STUDY ON SUPPLY CHAIN MANAGEMENT IN RESIDENTIAL BUILDING CONSTRUCTION AROUND MYSURU

## Abstract

Supply Chain Management involves the coordination, oversight, and strategy governing the flow of labor and products, encompassing all processes that convert raw materials into end products or transform them into final goods. It entails the dynamic optimization of a company's inventory-related activities to maximize customer value and establish a competitive advantage in the market. The primary objective of supply chain management is to meet requirements, enhance customer value, improve responsiveness, ensure economic success, and build a robust organization. Within the construction industry, the construction supply chain plays a pivotal role in fostering competition. Supply chain management in the construction sector contributes to project enhancement by aiding in improving competitiveness, increasing profitability, and exerting more control over the various factors and elements within the project. This study explores the characteristics of the construction supply chain, the challenges and issues faced by supply chains, and the benefits of an integrated supply chain within the construction sector in Mysuru.

**Keywords:** Supply Chain Management, Construction, Residential Building

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## I. INTRODUCTION

Supply chain management, often referred to as SCM, is the process of overseeing the flow of labor and products across organizations and geographical areas. It encompasses various stages, including the sourcing and handling of raw materials, managing work-in-progress inventory, handling finished products, and ensuring seamless order fulfillment from the point of origin to the end user. The supply chain involves a network of interconnected organizations, channels, and nodes collaborating to deliver goods and services to customers. Supply chain management can be defined as the systematic coordination of activities involving planning, execution, control, and monitoring of supply chain operations. Its ultimate goal is to create value, establish a competitive edge, leverage global integrated operations, align supply with demand, and assess performance on a global scale. This discipline draws upon various fields such as industrial engineering, systems engineering, operations management, strategic planning, procurement, information technology, and marketing, all contributing to the pursuit of a balanced and effective supply chain approach.

Marketing channels play a pivotal role in the realm of supply chain management. Currently, research in supply chain management is primarily focused on critical aspects such as sustainability and risk management, among other factors. One of the key focal points within SCM is the concept of supply chain resilience. Previously, certain important aspects of SCM, like ethical considerations, internal integration, transparency/visibility, and human resources/talent management, have not received the attention they deserve in research agendas. Supply chain management encompasses a wide array of activities aimed at efficiently planning, controlling, and executing the flow of products from raw materials to production to distribution while keeping costs in check. SCM involves the harmonized planning and execution of operations that optimize the flow of materials, information, and capital across various functions, including demand planning, sourcing, production, inventory management, logistics, as well as storage and transportation.

1. **Dr. Ghaith Al-Werikat (2017)** published a paper on “**Supply Chain Management in Construction**” and concluded that construction firms have the potential to tailor their supply chains to exert greater control over projects, ultimately leading to increased revenue and reduced time, costs, and waste generation. Within the construction industry, the supply chain is composed of various segments, with the most prominent ones being the material and construction chains. The integration of these two chains promotes effective decision-making by fostering greater cooperation and the exchange of information across the entire construction process.
2. **Mamta Negi et al (2017)** studied on “**Sustainable supply chain management in Indian construction Industry**” it has been determined that when construction project management techniques and supply chain management are effectively integrated, several favorable outcomes can be realized. These include the reduction of delivery times, enhancement of quality, reduction of waste, and the adoption of green procurement practices. These efforts collectively contribute to the shared objective of achieving customer satisfaction and promoting sustainable development in all aspects for the nation.

## II. OBJECTIVES

1. Study various parameters of supply chain management influencing the construction in Mysuru Region.
2. Influences & effects of parameters on a Residential building.
3. To recognize and apprehend the appropriate aspects of the relationship amongst the owner, the constructor and the suppliers.

## III. Methodology

The Project consists of 4 different stages to find the faults in the supply chain Management in construction quarter related to Mysore.

1. **Stage 1:** A survey was conducted with respect to rented tenants to know about their needs of their dream house (1000 samples collected).
2. **Stage 2:** Scrutinizing the survey data obtained from the clients and segregating the important needs in a residential building.
3. **Stage 3:** To conduct a survey related to construction material manufacturers and suppliers in and around Mysore.
4. **Stage 4:** To propose a generic application methodology of supply chain (SCM) in the residential building construction segment in and around Mysuru.

## IV. FINDINGS FROM SURVEY

1. People of medium income group plan to construct the house both for personal and rent purpose (Even in commercial aspect).
2. People of higher income group, plan to construct the house for personal purpose only (Concept of Duplex buildings).
3. More than 75% of the people who were questioned don't know about green building concept.
4. People, who knew about green building concept, are hesitant to adopt it, thinking it's not economical.
5. More than 95% of the people are interested in kitchen and room's interior design.
6. People knew only about the construction materials which are advertised more on social media platforms.
7. Around 70 – 80 % of the families are dependent on bank loans to construct their houses.



**Figure:** Construction Cost Break Down

## V. CONCLUSION

1. The initial stage in the Supply Chain in Construction is purchasing a site, where a client is spending 2 to 3 % of his whole investment of house construction, which can be cut down through newer technologies (use of apps).
2. One of the major problems in terms of SCM in Construction around Mysore is related to the materials such as Cement & Steel which costs around 10 – 15% of his/her investment, where the client is paying more (4% to 5%) as he/she is buying from wholesalers/retailers. (Manufacturing Plants for Cement & Steel can be established in and around Mysore).
3. More than 5 – 6% of his investment his spent on the transportation of the materials to the site, which can be cut down by 2 to 3% by shaving a transporting carrier (Logistics) system w.r.t construction materials.
4. Government can promote the concept of green building by providing some beneficiary schemes for the construction of houses which inculcate both rainwater harvesting system & solar panels.
5. Supply chain assimilation aids to the effectiveness and stream-lines the intents of all parties convoluted, aiding to achieve goal resemblance, efficiency and the depreciation of waste.

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