**A Case Study on Supply Chain Management in Residential Building Construction around Mysuru**

Puneeth K

Assistant Professor, ATME College of Engineering, India

Puneeth.aug@gmail.com

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

**Abstract**

Supply Chain Management is the coordination, the board and technique that drives the progression of labor, products and combines all cycles that change unrefined components into eventual outcomes or transform raw materials into final products. It comprises of dynamic smoothing out of a business' stock side exercises to boost client worth and gain an upper hand in the commercial center. The essential reason for the supply chain is to satisfy the prerequisite, drive client esteem, further develop responsiveness, work with monetary achievement and fabricate an excellent organization. The construction supply chain assumes significant part in the development market rivalry. Supply chain management in construction sector helps undertaking by assisting with further developing seriousness, increment benefits and has more command over the various elements and factors inside the venture. The venture examines the development production network attributes, difficulties and issues supply chains experience and the advantages of a coordinated supply chain in the construction sector in Mysuru.

**Introduction**

The management of the evolution of labor and products among organizations and areas is known as supply chain management and it comprises of the development and capacity of unrefined substances, work-in-process stock, completed products, as well as start to finish request satisfaction from starting place to point of utilization. Supply chain contains interlocked or interweaved organizations, channels, and hub associations join to give things and administrations to end clients. The "plan, arranging, execution, control, and checking of supply chain exercises fully intent on making net worth, constructing a serious framework, utilizing worldwide coordinated operations, synchronizing supply with request, and estimating execution universally" has been characterized as supply chain management. Modern designing, frameworks designing, tasks the executives, planned operations, obtainment, data innovation, and showcasing all assume a part in SCM, which seeks for a fair methodology.

Marketing channels are extremely significant in supply-chain management. Currently, supply-chain management research is centered on issues like supportability and risk management, in addition to other things. Supply chain resilience is a fundamental point referenced in SCM. The "applicable qualities" of SCM, moral issues, interior mix, straightforwardness/perceivability, and human resources/ability management from certain perspectives, are subjects that have been underrepresented on the review plan to until. The wide-range of actions required to plan, control, and execute a product's flow from materials to production to distribution in the most cost-effective manner is known as supply chain management. SCM refers to the coordinated planning and execution of operations that maximize the flow of materials, information, and capital in tasks such as 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 resolved that construction companies can customize supply chain to gain more action over projects by enhancing revenue and minimizing time, cost, and waste generation. The construction Supply Chain is made up of several groupings, the largest of which are the material and construction chains. By integration of construction and material chains it facilitates policymaking by enabling more collaboration and information exchange throughout the construction chain”.

**[2] Mamta Negi etal (2017)** studied on “**Sustainable supply chain management in Indian construction Industry”** and have concluded that “with an actual collaboration between construction project management techniques and supply chain management there are favorable environments that can be achieved such as reducing delivery time, augmenting the quality, waste depletion and green procurement to strive towards common goal of customer satisfaction for sustainable development of the nation in all aspects.

**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.

**Methodology**

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

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

**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.



**Fig: Construction Cost Break Down**

**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.

**References**

[1] Dr. Ghaith Al-Werikat (2017) studied on “Supply Chain Management in Construction; Revealed” International Journal of Scientific & Technology Research volume 6, issue 03, March 2017, ISSN 2277-8616.

[2] Akintoye, A., Macintosh, G., Fitzgerald, E. (2000) A survey of supply chain collaboration and management in the UK construction industry, European Journal of Purchasing and Supply Management, Special Issue.

[3] Christopher, M. (1992) Logistics and supply chain management: strategies for reducing costs and improving service, Pitman Publishing, London, UK.

[4] Davis, T. (1993). “Effective Supply Chain Management.” Sloan Mgmt. Rev., summer, 35-46.

[5] Landry, J. (1998) Supply Chain Management, Harvard Business Review, Nov – Dec.

[6] Bechtel, C., and Yayaram, J. (1997). “Supply Chain Management: a Strategic Perspective.” Intl. J. of Logistics Mgmt., 8 (1) 15-34.

[7] Christopher, M. (1992). Logistics and Supply Chain Management: Strategies for Reducing Costs and Improving Service. Pitman Publishing, London, UK.

[8] Cooper, M.C., and Ellram, L.M. (1993). “Characteristics of Supply Chain Management and the Implications for Purchasing and Logistics Strategy.”

[9] Ofori, G. (2000) Greening the construction supply chain in Singapore, European Journal of Purchasing and Supply Management, Special Issue.

[10] Proverbs, D., Holt, G.D. (2000) Reducing construction costs: European best practice supply chain implications, European Journal of Purchasing and Supply Management, Special Issue.

[11] Vrijhoef, R., Koskela, L. (1999) Roles of supply chain management in construction, 7th Conference of the International Group for Lean Construction, Berkeley, USA.

[12] Vrijhoef, R. (1998) Co-maker ship in construction: towards construction supply chain management, Graduate Thesis, Technical Research Centre of Finland, Espoo.

[13] Zhangong, C. Y. (2012). Study on the Information Technology-Based Lean Construction Supply Chain Management Model. Springer-Verlag Berlin Heidelberg.