iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** XI **Month of publication:** November 2022

DOI: https://doi.org/10.22214/ijraset.2022.47642

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue XI Nov 2022- Available at www.ijraset.com

Implementation of Just-In-Time approach in Construction Project (A Review Paper)

Shubham Dharmadhikari[1], Prof. V Payghan[2]
[1, 2]*Imperial college of Engineering & Research,Wagholi, Pune*

Abstract: Indian development environment has changed radically over the span of final three decades. All the divisions in development industry ought to adapt up with the alter happening within the industry over time. Stock administration points at optimization of stock speculation to guarantee expanded productivity inside the development process. In our conventional framework, tragically, stock plays a part of resource while it is most costly risk. Medium and little scale organizations have a difficult time due to inaccessibility of software's like Endeavor asset arranging. It is important to bring modern hones into usage so as to remain lively within the competition. Fair in Time procedure (JIT) is one such activity that can improve stock administration without expansive investments.

JIT is a lean concept which increases efficiency and decreases waste by receiving raw materials only as needed for production process thus reducing inventory cost. It is best suited to small and large scale projects as it does not require major financial investment. This project covers a case study where the proposed system is implemented and compared with conventional approach of inventory management on a Residential building to demonstrate the usefulness of JIT in terms of cost, and to increase its base of application in Indian construction industry. The conventional material procurement procedure will be studied thoroughly and the JIT philosophy will be used to reduce the cost of project efficiently. This paper will take review about past research made in JIT and focus on feature work can be implemented through JIT in construction sector

Keywords: Inventory management, Just in Time, Cost Reduction

I. BACKGROUND OF STUDY

As expanded competition in world has constrained the Development segment to explore for few unused strategies to overcome the issues in Development Industry. From past few decades', allover in worldwide development improvement has experienced more adjustments, particularly, the development improvement has gotten to be recognizable calculate in making the worth for the venture The customary strategy to stock movement utilized in development ventures shape past few a long time. The technique made as well much of issue to development segment. Fast accomplishment in relations, best quality fabric and speedy material transportation procedure has gotten to be around the world. Nowadays development division has to lessening fetched in expansion to progress quality and on-time conveyance

II. INTRODUCTION

Just in Time (JIT) method is a production technique which improves efficiency of manufacturing. JIT technique is "Industry manufacturing the product only which is required, when it is required & in how much amount it is required". The Industry manufactures the product what the demand from client, to real requests. Just in time approach also explained as manufacturing the required products, with appropriate quality as well as in required quantities, for safe moment. Which means that the industry will utilize their self-resources & allotting them the work without any problem. Inventory management is a significant function in order to increase productivity in construction projects. In Inventory management includes arrangement of materials, choosing proper supplier & examination, procuring of material, expenses, delivery, material conveyance & its distribution. Because of poorly handling & arranging inventories on construction site during the construction process can impact the whole cost of project, duration & the quality.

III. PROBLEM STATEMENT

The traditional approach to material management system has been changing since pastthree decades. JIT (Just-In-Time) philosophy is being implemented in Indian construction industry. Now a days, construction industry is becoming implemented various technique to material management and inventory control.

Similar construction project was carried JIT and implemented but still performance of JIT not improved as per requirement of literature studied. Therefore, this study on JIT is carried out to study the process of implementation, understand and find out the problems and provide suggestion to solve them.

IV. LITERATURE REVIEW

1) *Vendor Assessment And Selection Process:* In this research he studied about the vendor assessment and selection process in construction field. The initial activity for doing a vendor survey is for the owner to choose which performance categories to incorporate. The assessment and selection of vendors, is a significant work in any industry. A vendor assessment shall complete all points which are essential for a cordial working cooperation between industry and vendor. The essential measures are cost, quality and delivery that are commonly the most basic regions is that influence the purchaser. For some materials, this 3 points would be sufficient, anyway for basic materials required an in detail analysis of the vendor's capacity or strength, a deep vendor assessment study is needed. Vendor Assessment & selection will provide them to apply the most effective techniques in order to achieve the smooth progress of the construction of the Project, in this way removing delay and extra cost required for projects Akshay A. Patil et.al (2016)
2) *Optimizing Material Procuremen* : The study express the advancement of another optimization model for construction planning that is prepared to do all while incorporating & optimizing the basic arrangement answers of inventory purchasing and inventory storing on project place. This model uses logistic calculation to reduce construction costs that covering inventory indenting, economy, inventory stock-out, & placement costs. The model includes recently developed calculations to assess the effect of possible inventory shortages on construction site due of delay in conveyance on stock-out costs. Another model of development systematic arrangement was created to empower the optimization of the basic arrangement decisions of inventory purchasing and inventory storing on project place Hisham said.et.al (2013)
3) *Sustainable Performance of Just-In-Time (JIT) Management:* outcomes from study likewise seen that the target of accomplishing extra environmental impact clashes with the financial effect. Nonetheless, sensitivity analysis shows it isn't in every case possible to consider extra environmental impact for vendors to getting 'Positive' value. This study helping for conveyance method by growing the approach which is depending on time delivery model by getting both the economic & environmental impacts. The technique created is of practical value for precast structure projects to support in the positively execution of sustainable development. Liulin Kong et.al (2018)
4) *Effect of Just in Time (JIT):* there is possible application of JIT in handling low efficiency, low predictability and quality issues in the development firms in Indonesia. JIT research outcome in growth of the usefulness time of the speeding of construction project purposes Gathering Station in improving the exhibition entire oil production cycle. Manlian R.A Simanjuntak et al. (2017)
5) *Integration Management On Construction Project*: The performance of construction is depend on various scale of project management. This research examines the influence of different segments of integration management on construction project management execution and quantifies the connection between those segments and integration management. The information is analyze by utilizing a software, called SPSS AMOS. Main outcomes from this research is that integration management has a strongly effect on overall performance of project management. Sevilay Demirkesen .et.al (2017)
6) *Resource Management*: Allocation of resources for activities is important in construction area to finish the project within the fixed time. Resource leveling is important in construction projects to avoid the difficulties associated with the large differences in resource utilization. This study conclude about scheduling of project with time constrained as per customer's need. The current schedule daily increases because of requirement of workers & hence outcomes are effect on whole project expense S.K.Nagarajuet.al (2012)

V. CONCLUDING REMARK ON LITERATURE REVIEW

From above literature, it is understood that proper material management is one of the significant things in construction industry from the feasibility study of JIT (Just-In- Time) helps to overcome material delivery delays. The ultimate goal of JIT materials management framework in construction project is to optimize materials receiving timing and to reduce inventory quantities. For that we can use various software like MSP, 1000's mind, etc. which will gave us better planning & procurement plan in construction site.

VI. CONCLUSION

Just-in-time has the plausible to expand the productivity, quality and organizational adequacy of Indian development businesses whe reas its a few components are marginally troublesome to carry out in curre nt framework of busi nesses.

To pick up the the benefits of Just-in-time, Indian development businesses must willing to modify their methods and operations. The likely benefits of Fair- in-time for the Indian development businesses are not in question. In spite of the fact that the Indian development businesses have to be plan the proper procedure for carry outing the Just-in-time in Indian building industry.

REFERENCES

[1] Akshay A. Patil ,Prof. Madhav B. Kumthekar, "Supplier Evaluation and selection methods in construction industry" International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395 -0056 Volume: 03 Issue: 06 | June-2016, Page no: 1,39,59

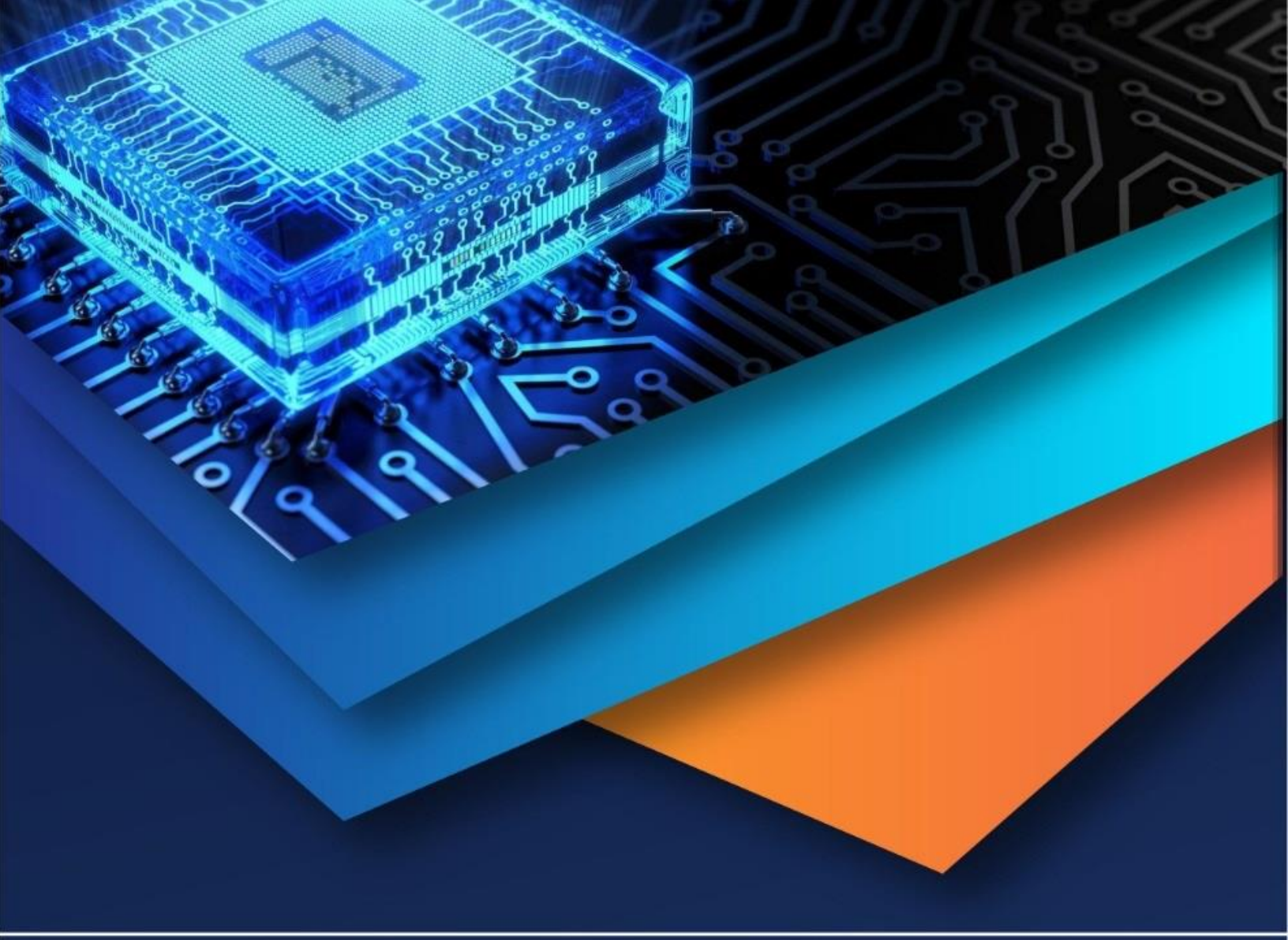
[2] David J. Edwards and Gary D. Holt, "Construction plant and Equipment management research: Thematic Review" 2014 International Journal of Engineering Science & Research Technology, Volume 4, Issue 1. Page no: 1, 23, 29

[3] Hisham Said, Khaled EI-Rayes, "Optimizing material procurement and Storage on Construction sites" 2013 International Journal Science and Research, Volume 4 Issue 3, Page no : 1, 16,39,51,53

[4] Liulin Kong, Heng Li, Hanbin Luo, Lieyun Ding, Xiaoling Zhang "Sustainable performance of Just-In-Time (JIT) management in time-dependent batch delivery scheduling of precast construction" Journal of Cleaner Production: 22 August 2017, Page no; 1, 2, 4, 21,28

[5] Mohamed Ali and Dr. Salwa Beheiry, "The Applicability Of Just-In-Time In United Arab Emirates Construction Projects" , Journal of Emerging Trends in Engineering and Applied Sciences Volume 3, Issue 3, p.p.120-128, 2015, Page no: 6, 10, 24, 27, 32

[6] Patil Yogendra R., Patil Dhananjay S. "feasibility study of just in time inventory management on construction project", International Research Journal of Engineering and Technology, p.p.686-693, July-2015, Page no: 8, 10, 15, 17, 43



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)