A Review on Impact of Inventory Control on Construction Industry Post Covid-19

Miss Samiksha V. Bodkhe[1], Dr. M.M. Bais[2], Prof. S. A. Patil[3]
[1]Dept of Civil Engineering (Construction Engineering & Management)
[2, 3]Assistant Professor, Dept of Civil Engineering (Construction Engineering & Management)
[1, 2, 3] VYWS, PR, CEM Amravati, Maharashtra, India.

Abstract- *Construction Industry involves multi echelon supply chain. With so many stake holders involved, the inventory management becomes a critical aspect of construction project management. Construction industry faces a lot of problem due to poor inventory management, these projects over run the time and the allocated budget. The concept of inventory management system has been one of analytical aspects of management establishing control over purchase, storing and to keep track of the materials, workforce, equipment and production units involved for construction projects. The main objective of this paper is to investigate the various studies given b different authors related to inventory management and its impact in application of inventory management system in construction of small scale projects. Identification of impacts and risk influences of inventory management systems in a small-scale project. ABC analysis is one of the most conventionally inventory management system suited for construction infrastructure. The study will focus on the importance and economic benefit of inventory management for construction practitioners.*

Keywords- ABC analysis, construction projects, inventory management, S-curve analysis.

I. INTRODUCTION

The term inventory means referring the goods and materials used by a firm for the purpose of production and sale. It is also essential to provide flexibility in operating construction and production activities of an organization. Inventory management is a system by which the construction companies and suppliers can stores and keep track of their material, workforce, equipment and production units involved for construction projects. The most important functions of any type of business is inventory management system. Without stock management it is difficult for any company to maintain control and to handle customer needs. The clear understanding about inventory management system is important construction companies handling multiple projects at the same time nearly 60% of money for the inventory in a project. Inventory management is defined as the process responsible for the coordination of planning and controlling the inventories in an suitable manner to provide a pre-decided service to the customer at a min cost. Inventory management is simply the process by which an organization supplied with the goods and services enabling the best way to achieve its objectives of buying, storage and transportation of materials.

One of the most important aspects of any business is inventory management. Those who have never worked in the business sector may not understand the importance of efficient inventory management. Without stock management, it would be difficult for any company to maintain control and to handle customer needs. Regardless of whether you are delivering a performance company or products, you need to know where your inventory is and where you are going. Unless you meet your customers' needs, you may soon lose all competitors who are able to meet your requirements, regardless of whether they are strict. Although inventory management has always been important, it has become increasingly important over the last few decades. Inventory management is defined as the function responsible for the coordination of planning, sourcing, purchasing, moving, storing and controlling inventories in an optimum manner so as to provide a pre-decided service to the customer at a minimum cost. But, the reality of it is if we don't have control of our inventory, we will be unable to ascertain you will have enough inventories on hand to handle the needs of our customers.

II. LITERATURE SURVEY

Miss. Monika Ramdas Nanaware, Prof. U. R. Saharkar [2017] - The paper discusses the fundamentals of construction material management, the role of inventory management in material management, including inventory terminologies and classification, the inventory process, inventory control systems, key performance indicators for inventory management systems, inventory models, and inventory optimization, as well as the importance of inventory management systems. To keep just-in-time inventories, material resources are preparing ahead. The ABC and EOQ Analysis of a Construction Company is the subject of this article. Finally, in the concluding section, the project gives a detailed financial analysis of the appropriate use of inventory

models in material management. Production may be halted, but a large inventory, on the other hand, can result in higher production costs due to high labour costs inventory management. Therefore, inventory optimization should ensure that inventory is neither too low nor too high. Inventories such as finished products, work in progress,components, raw materials, warehouses, spare parts, etc. they represent 80% or more of working capital in about of the representative industries studiedin the past. It would seem that any effort to rationalize stocks could lead to significant savings.

Salawati Sahari, Michael Tinggi and Norlina Kadri [2012] - This study empirically examines the relationship between inventory management and business performance and capital intensity on a sample of financial data from 82 construction companies in Malaysia for the period 2006-2010. With using regression and correlation techniques, inventory management was found to be positively correlated with business performance. In addition, the results indicate that there is a positive relationship between inventory management and capital intensity. Managers act rationally in the effective management of their inventory if they are convinced that the practice improves the performance of the company. However, existing research in operations management revealed conflicting information about the link between inventory performances.

Mr. Patil Yogendra R. [2018] - Major Construction Industries were seeking to undertake new enterprise tasks so that you can stay alive withinside the new aggressive marketplace place. Companies ought to attempt to create excessive quality, and Low value merchandise that may get to the clients withinside the shortest time possible. Just-in-time manufacturing gadget is one of those tasks that target value discount with the aid of using doing away with non-cost introduced activities. This Paper Deals with Implementing Just in Time Inventory Control Approach on Highway Construction. JIT has Tremendous Effect on Material Delivery Operation. During implementation of JIT, employers are required to place favored efforts on all ranges of the work. Just in time philosophy has a lot of potential for coping with motion of production cloth from the production backyard to the production site.

Khyomesh V. Patel, Prof. Chetna M. Vyas [2011] - This paper is written to fill a void created with the aid of using the absence of right substance control on creation sites. To deal with an effective and valuable green web page, green fabric control is very essential. Research has proven that creation substances and devices may represent extra than 70% of the overall value for a normal creation challenge. One of the predominant troubles in delaying creation tasks are negative substances and device control. This paper describes the primary results of a survey achieved in Ahmedabad that investigated the fabric control of three well-acknowledged developers of Ahmedabad.

S.Ramya, S.Janani [2020] - One of the main obstacles faced by the construction industry is inventory management. In each construction project, the cost of inventory is approximately 50-60% of the total project cost. The profitability of the construction industries depends primarily on inventory management to avoid cost overruns and project delays. An adequate materials management system must be in place for efficient use of resources. By applying lean concepts in a project, we will be able to find the timelines of each product as well as the means to identify and eliminate non-value added activities.

Jyoti Sanjeev Mohopadkar, D. P. Patil [2017] - Inventory control is the soul of Materials Management, objectives at optimization of stock funding to make certain continuity in availability of materials. Around 60% of the firm's running capital is commonly tied up in its one-of-a-kind kinds of stock. Inventory control is a vital constituent of any creation enterprise consequently the employer wants to recognize the repercussions of right material control strategies at the fulfillment of mission execution. Inventories represents a mixture of these objects which might be both held on the market withinside the normal path of commercial enterprise or are withinside the system of manufacturing on the market or are but to be utilized withinside the manufacturing of goods & services. Withinside the paper strategies & significance for stock control is given. Also few research was finished at the stock control strategies & its significance.

Ms. Priya Patil, Prof. Dr. A. W. Dhawale [2018] - Each task has a deliberate provider date, which must be met with a budgeted finance. In this situation, the maximum beneficial approach is “just-in-time” production that offers a tremendous improvement of mission price and time management. The essential precept of this approach is to acquire mission time obstacles with none useless agenda improvement. During the route of production, its miles essential to offer steady mission manipulate to reveal development and upload assets handiest while its miles required to satisfy a mission provider date. Hence, this studies paper particularly specializes in applicability, importance and limitations to undertake JIT approach in production initiatives primarily based totally on rigorous literature survey.

Sachin S. Pal, Prof. Himanshu Ahire [2016] - Materials control is an essential factor of the development enterprise. A well carried out substances control application can reap the

well-timed float of substances and gadget to the jobsite, and for that reason facilitate progressed work face making plans, accelerated hard work productivity, higher schedules, and decreased venture costs. Materials control is a crucial characteristic so as to enhance productivity in creation projects. It is described substances control features which encompass making plans and cloth take off, vendor assessment and selection, purchasing, expenditure, shipping, cloth receiving, warehousing and inventory, and cloth distribution. In this venture we've got put together scheme of cloth control in the creation enterprise for constructing venture .Also accomplishing survey of enterprise and determine the diverse layout for creation cloth control additionally discussing the monitoring device of cloth control withinside the enterprise and additionally talk the smooth ware generation advanced for right control are talk.

Prince Boateng [2014] - The studies made a unique contribution in quantitative chance evaluation with reference to the want for a methodological innovation in studies and for an effective state-of-the-art device in practice. The SDANP has proven its blessings over present gear together with this system assessment and evaluation technique (PERT) and the chance evaluation matrix (RAM). The studies has evolved an progressive SDANP approach which entails an integrative use of gadget dynamics (SD) and analytic community method (ANP) for chance evaluation. The SDANP version offered withinside the thesis has been testified with the aid of using the use of records and facts amassed thru a questionnaire survey and interviews from supply-facet stakeholders concerned with inside the Edinburgh Tram Network (ETN) mission on the Phase One of its creation stage.

V. Rathina Kumar, K. Lalitha Priya, Prasanna kumar, C. Ravekumar [2018] - A study has proven that the development substances account for greater than 55%-60% of the entire expenditure of a challenge. Efficient cloth making plans performs a prime function with inside the success delivering of a challenge with inside the envisioned price and schedule. This paper specifically makes a specialty of substances making plans and stock management as those are the predominant components of cloth management. S-curve evaluation is done to degree the fluctuation among envisioned substances price and marketplace substances price. The end result of the S-curve evaluation displays that the real substance's price is better than the planned substance's price in maximum cases. ABC and EOQ evaluation are implemented to hold enough inventory in stock and any given factor of time, to defend the substances with inside the stock towards damages, to lessen stock retaining costs, to conquer inventory-out troubles and to hold the stock in a best level.

Dhanashree S Tejale, Dr. S D Khandekar, Dr. J R Patil [2015] - Cost overruns were a main difficulty in lots of Indian production initiatives. The successful execution of production initiatives and retaining them inside prescribed agenda and value may be very critical for powerful value performance. Most of the development initiatives are afflicted by value overruns because of a multiplicity of elements. The gift paintings are carried out on analyzing considerable elements inflicting value overruns in production initiatives. A questionnaire for the survey has been organized via means of Authors primarily based totally on forty five not unusual place elements for value overruns recognized from literature assessment and dialogue with experts. The value overrun technique provided on this have a look at offers a statistical approach that's utilized in the production zone for computing the effect of venture value overruns. The locating of the paper will assist the venture supervisor to behave on vital causes and similarly attempt to lessen value overrun of venture.

Ahmad Zeb, Daud Khan, Muhammad Sajid, Sikandar Bilal Khattak [2017] - Construction Industry includes multi echelon deliver chain. With such a lot of stakeholders involved, the stock control will become a crucial element of creation undertaking control. Construction enterprises face a number of hassles due to negative stock control, those initiatives over run the time and the allotted budget. ABC evaluation is one in all the initial stock evaluation techniques however it's far nonetheless alien to the Pakistan creation environment. The paper targeted on the significance and financial gain of stock control for creation practitioners. [13]

T.Subramani, V.Bhaskaran Nair, A.David, B.Mohamed Ghouse, N.Siva Kumar [2017] - Inventory control gadget includes procurement, garage, identification, retrieval, shipping and production methods. Each is indelibly connected to safety, productiveness and agenda performance. The primary goal of look is to research the stock control management followed and the powerful usage of stock at the development webpage. ABC evaluation is one of the conventionally used strategies to categorise the inventories and the case look at of a corporation is collected. The monitoring and finding substances in production job sites has grown into a super situation amongst production entities. The fallacious handling and garage of substances in production web page has made it tough to tune and discover substances while the time they're needed. These findings may also mirror the principle elements with a view to have an effect on the stock control gadget which capable of obtain the advanced performance of venture control and to lessen the waste of substances withinside the respective place of production industries.

Dr. P.Vidyapriya, Dr. M. Mohanasundari, Dr. P. Suntharalingam, Sailendharani A. P. [2019] - The production enterprise is the device via which society dreams of city and rural improvement may be achieved. It has a fantastic effect on the financial system of all countries (Leibing, 2001). However, the development technique is encouraged by means of highly converting and surprising variables, which can end result from different assets. These assets encompass overall performance of production events, economic issues, managerial issues, sources unavailability, and outside conditions. As a result, poor overall performance in phrases of postponement and fee overrun in production tasks ought to occur. The production enterprise and its events are related to excessive diplomacy of danger due to the character of production enterprise activities, processes, surroundings and organization. Risk in production has been the item of interest due to time and fee overruns related to production tasks.

Shreya Bansod, Prof. Syed Sabihuddin [2020] - Inventory issues of too tremendous or too small portions handy can motivate enterprise failures. If an organization studies inventory-out of an important stock item, manufacturing halts ought to result. Inventory control shows the vast body paintings of dealing with stock. Inventory control has grown to be relatively advanced to fulfill the growing demanding situations in maximum corporate entities and that is in reaction to the reality that stock is an asset of distinct feature. Construction substances commonly account for 40– 45% of the fee of all creation paintings. The primary goal of this paper is to research the stock control followed and the powerful usage of stock at the creation site.

D. Deepak, M, Sasi Kumar [2016] - Construction substances represent a massive part of the entire fee in creation projects. It may also account for 50-60% of the entire task fee. Material control consists of locating the availability, right selection, procurement, stock control and powerful usage of substances at proper time. In this stock control is one of the unmarried largest additives to enhance productivity, feel green of a task and assist to make sure to finish the task well. On getting ready stock charts and analyzing the fee estimate, the right fee control over cloth procurement has been performed to keep away from surplus expenditure and higher area cloth control.

Ujjavala Patel, Anand Patel [2017] - Construction substances are composed of greater than 50% of the entire price of the assignment. Efficient substances control performs a key role with inside the success of the entirety of the assignment inside expected price and time. In this studies paper written to discover modern-day exercise of cloth control to creation assignment and Inventory manipulate strategies inclusive of ABC class and EOQ evaluation are executed to keep the stock in an ultimate degree and S curve Analysis executed to examine the Actual paintings executed price and budgeted price of labor executed the use of Microsoft assignment software.

Do Young Jung, Seung Heon Han, Keon Soon Im, Chung Kyu Ryu [2007] - One of the main obstacles faced by the construction industry is inventory management. In each construction project, the cost of the inventory is approximately 50-60% of the total project cost. The profitability of the construction industries depends primarily on inventory management to avoid cost overruns and project delays. Based on consumptions of each level of raw material replenishment and quantitative easing will have happened. Value Stream Mapping (VSM) is a simplified tool used to map the process flow of a project as well as the cycle time of each process, which helps identify the total processing time. Thanks to VSM, we quantify the added value and the non-added value. Activities in a project and measures will be taken to reduce non-value-added activities by eliminating non-value-added activities, the total time to complete a project will be reduced and resources will be used optimally.

M M Rahman, Y H Yap, N R Ramli, M A Dullah, M S W Shamsuddin [2017] - The shortage and delay in the supply of materials is said to be one of the most important factors leading to delays in the delivery of the construction project around the world. A study which aimed to identify the causes of shortages and delays in the supply of materials in Brunei Darussalam. The study was conducted through fifteen semi-structured interviews with contractors and material suppliers in Brunei. The study identified six causes of material shortages and nine causes of material supply delays in Brunei. The most important deficiency of materials is the origin or availability of building materials.

Molusiwa Stephan Ramabodu [2014] - The aim of this study is to propose a model of the organization chart of the project. When followed correctly, this model can reduce the risk of project overruns from a cost plan perspective. Research results indicate that the estimator must have experience and skill to be able to produce results. Precise estimates. Am model is provided to guide estimators on what to do before they can begin the estimation process. Optimism biases and strategic misrepresentation are identified as the main causes of cost overruns in construction projects, estimates and costs. Although the estimation process for this type of project is very complex, techniques have been developed to assess risks and plan for contingencies for these types of problems. This is important because the cost performance of construction projects is a key success criterion for project developers, as

construction projects are known to be over budget. The concept of cost contingency, estimates, cost overruns, procurement, risk management and value management will be dominant in this study.

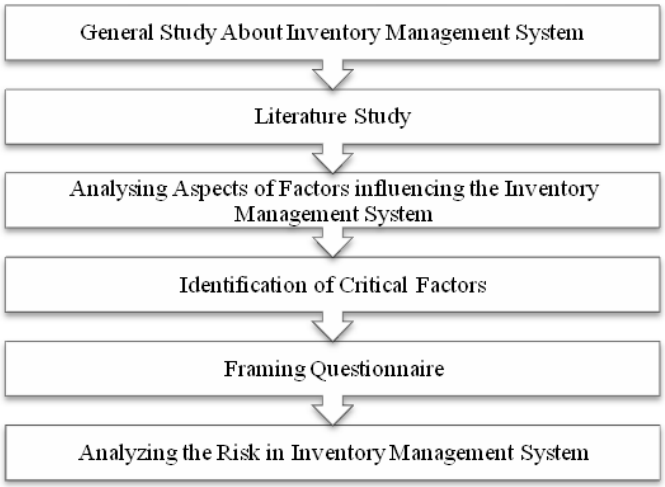
Lukasz Rzepeck [2019] - Costs of execution construction projects are significantly influenced by (apart from technical factors) decisions in the area of inventory management, among others, variability of environmental conditions, prices of construction products, ability to acquire local suppliers, transport distance, limited storage size for construction products, as well as the individual character of the project. In projects related to building construction and other construction works, there are numerous logistical tasks in the field of the supply of construction products, raw materials, equipment, as well as in the field of financial and information flows. Considering the large share of the costs of materials, inventory management in the costs of implementing projects and the high potential for their reduction, any company operating in the construction sector should attach great importance to the supply logistics sector. Determining the size and delivery times of construction products, as well as the transport routes, storage and recharging locations are decision-making issues that are resolved by the management of both the company and the construction projects.

Job Onyinkwa Osoro, Denis Nkurunziza [2016] - This research was the assessment of inventory control on the performance of the Fair Construction Company and its specific objective was to determine the inventory control approaches used by the Fair Construction Company, to know the inventory costs incurred in the process supply. In Fair Construction Company and to establish the relationship between inventory control and financial performance in Fair Construction Company, the research design used was qualitative and quantitative methods. The researcher used a self-administered questionnaire (SAQ) to solicit the necessary information; the collected data was analyzed using SPSS software packages to count the responses and performed a statistical frequency distribution. Put the information provided by the respondents in tables with corresponding scores in terms of percentage.

Kini, D.U. [1999] A successful engineering and construction project fulfills the customer's needs while profiting the engineering company. But when money is tight, clients look for engineering companies that can provide the best product at the lowest cost. Materials management is often overlooked as method of cutting costs. Considering that for a typical industrial facility 50 to 60% of the total cost is for equipment and materials, companies obtaining those items at the lowest possible cost will provide the greatest savings. Materials management is a management system that integrates the traditional areas of purchasing, expediting and controlling the progress of the vendor. An essential part of project management, materials management can be integrated with engineering to provide an end product that meets the client's needs and is cost effective. A typical engineer-procure-construct project can be divided into seven distinct stages: planning, preliminary design, final design, procurement, vendor control, construction and closeout.

III. METHODOLOGY OF WORK

The collection of detailed information about inventory management system will be done. A systematic approach and proper investigation about in fluency factors of inventory management system towards a project will be carried out.



IV. DISCUSSION

This paper aimed at presenting literature relevant to analysis of inventory management system for building projects. Miss. Monika Ramdas Nanaware et.al suggested that the total cost of material may be 50% of total cost; so that it is important for contractor to consider that timely availability of material. Material Manager should maintain reports such as material to order between two dates, material assignments, waste control, when to purchase construction material, when material must be on site, and purchase order between two dates. According to Jyoti Sanjeev Mohopadkar et.al concluded that Materials account for 60-70% of the entire expenditure for construction project. Therefore, it will possible to reduce overall price of the project with the help of solution given for the project & also avoid the same difficulties for next project. Khyomesh V. Patel suggested that Firms employing proper material management system are seen to have increased their overall efficiency by35%.Shreya Bansod concluded that the

attitude of owners, consultants, and contractor's towards factors affecting the performance of construction projects. They should be more interested in conformance to project specification to overcome disputes, time, and cost performance problems.

V. CONCLUSION

Inventory management system is considered to perform a key role in an organization, which is responsible to complete the company's project in a specific budget within a certain period of time. It is very clear that inventory management of any construction will undergo intense stress in their work environment. The systematic literature review identifies that materials management processes require a transformation to improve the overall process in handling of materials for more efficiency and effectiveness on the construction site. This is because poor handling of construction materials affects the overall performance of construction projects in terms of time, budget (cost), quality and productivity. Cost overrun is one of the key factor to identify delays of any type of project. This will be monitored and viewed regularly by checking basic job cost report details.

VI. ACKNOWLEDGEMENT

I am highly grateful to thank my guide Dr. M. M. Bais and my co-guide Prof. S. S. Patil, Department of Civil Engineering (CE & M), Vidarbha Youth Welfare Society's, Prof. Ram Meghe College of Engineering & Management, Amravati for their constant intellectual support in the form of innovative ideas and valuable guidance. Their expert suggestions and scholarly feedback had greatly enhanced the effectiveness of this work.

REFERENCES

[1] Do Young Jung, Seung Heon Han, Keon Soon Im, Chung Kyu Ryu, '*Modelling an Inventory Managementi in Construction Operations Involving Onsite Fabrication of Raw Materials',* Proceedings IGLC-15, Michigan, USA, pp 367-379, July 2007

[2] Khyomesh V. Patel, Prof. Chetna M. Vyas, *'Construction Materials Management on Project Sites'*, National Conference on Recent Trends in Engineering & Technology, B.V.M. Engineering College, V.V.Nagar,Gujarat,India, 13-14 May 2011.

[3] Salawati Sahari, Michael Tinggi and Norlina Kadri, *'Inventory Management in Malaysian Construction Firms: Impact on Performance',* SIU Journal of Management, Vol.2, No.1. ISSN: 2229-0044, pp 59-72, June, 2012.

[4] Prince Boateng, *'A Dynamic Systems Approach to Risk Assessment in Megaprojects'*,Royal Academy of Engineering Centre of Excellence in Sustainable Building Design, School of Energy, Geoscience, Infrastructure and Society, Heriot-Watt University, Edinburgh, UK, September 2014

[5] Dhanashree S Tejale, Dr. S D Khandekar, Dr. J R Patil, *'Analysis of Construction Project Cost Overrun by Statistical Method',* International Journal of Advance Research in Computer Science and Management Studies, Volume 3, Issue 5, ISSN: 2321-7782 (Online) May 2015.

[6] D. Deepak, M, Sasi Kumar, '*Inventory Management and Cost Analysis',* International Journal of Scientific & Engineering Research, Volume 7, Issue 4, ISSN 2229-5518, pp 177-182, April-2016.

[7] Ujjavala Patel, Anand Patel, *'Application of Inventory Material Management Techniques in Construction Project- Case Study',* Journal of Emerging Technologies and Innovative Research (JETIR),ISSN-2349-5162, Volume 4, Issue 05, May 2017.

[8] Jyoti Sanjeev Mohopadkar, D. P. Patil, *'Application of Inventory Management in Construction Industry',* International Journal on Recent and Innovation Trends in Computing and Communication, ISSN: 2321-8169, Volume: 5 Issue: 6, pp 229-231,June 2017.

[9] Miss. Monika Ramdas Nanaware, Prof. U. R. Saharkar, *'Application of Inventory Control Technique in Construction'*,International Journal of Engineering Research and General Science Volume 5, Issue 4, ISSN 2091-2730, pp49-54, July-August, 2017.

[10] Ms. Priya Patil, Prof. Dr. A. W. Dhawale, '*A Review on Concept, Applicability and Implementation of Just-In-Time Technique in Construction Industry',*International Journal of Engineering Science Invention (IJESI) ISSN (Online): 2319 – 6734, Volume 7 Issue 3 Ver. II, pp 07-10, March 2018.

[11] Dr. P. Vidyapriya, Dr. M. Mohanasundari, Dr. P. Suntharalingam, Sailendharani A. P., '*Impact And Assessment Of CostOverrun Due to Material Cost in Construction Projects',* International Journal of Civil Engineering and Technology (IJCIET), Volume 10, Issue 02,pp. 1099-1115, February 2019.

[12] Shreya Bansod, Prof. Syed Sabihuddin, *'Inventory Management System in Construction Industry: A Review',*IJSRD - International Journal for Scientific Research &Development| Vol. 8, Issue 5, ISSN (online): 2321-0613, 2020.

[13] S.Ramya, S.Janani, '*A Literature Review on Analysis of Lean Concept in Construction Industry',* International Journal of Scientific & Technology Research, Volume 9, Issue 02, ISSN 2277-8616, pp 4364-4366, February 2020.

[14] Sachin S. Pal, Prof. Himanshu Ahire, '*Study of Material Management Techniques on Construction Project',* IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE) e-ISSN: 2278-1684,p-ISSN: 2320-334X, Volume 13, Issue 4 Ver. II, PP 12-17, Jul. - Aug. 2016

[15] V. Rathina Kumar, K. Lalitha Priya, Prasanna kumar, C. Ravekumar,'*Construction Material Management through Inventory Control Techniques'*International Journal of Engineering & Technology, *7 (3.12) (2018) 899 -903*

[16] Ahmad Zeb, Daud Khan, Muhammad Sajid, Sikandar Bilal Khattak, '*Inventory Analysis of Construction Project',* Proceedings of the First International Conference on Industrial Engineering and Management Applications ISBN: 978-969-7710-01-0

[17] T.Subramani, V.Bhaskaran Nair, A.David, B.Mohamed Ghouse, N.Siva Kumar, '*A Study of Inventory Management System inConstruction Industry',* International Journal of Application or Innovation in Engineering & Management (IJAIEM), Volume 6, Issue 5, ISSN 2319 – 4847, May 2017

[18] M M Rahman, Y H Yap, N R Ramli, M A Dullah, M S W Shamsuddin, *'Causes of shortage and delay in material supply: apreliminary study',*IOP Conf. Series: Materials Science and Engineering 271 (2017) 012037

[19] Lukasz Rzepeck, '*Optimization of inventory costs managementin the construction enterprise',* IOP Conf. Series: Materials Science and Engineering 603 (2019) 032046.

[20] Job Onyinkwa Osoro, Denis Nkurunziza, '*Assessment of Inventory Control on the Performance: A Case Study Fair Construction Company',* Scholars Journal of Economics, Business and Management

[21] Kini, D.U.,"Materials management: The key to successful project management." *J. Manage. Eng*., 15(1), 30-34 https://doi.org/10.1061/(ASCE)0742-597X(1999)15:1(30)