

AUTOMATION IN CONSTRUCTION INDUSTRY IT'S APPLICATION AND BARRIERS TO IMPLEMENTATION ON CONSTRUCTION SITE

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Abstract

Construction industry is one the oldest and most contributory in nations economy. Construction industry is labor intensive and construction work is conducted in dangerous and risky scenario. Automation system utilized in construction sites will expeditiously cut back construction time and increase safety by replacing human in dangerous operations.

Use of automation creates a safer environment to work and efficient execution of work. The arising problems with construction industry such as working safety, labour productivity, labour shortage, unsuitable working conditions, inadequate quality can be tackled with new revolutionary measures of automation. Other countries are benefitting by use of latest technologies of automation in their building industry and also creating quality infrastructures.

While in India the use of Automation is evolving but still there is a need of awareness for new machinery and gadgets that could help us create a safer environment to work giving us quality work. Also, in India need to identify the barriers to implementation of Automation in construction industry is important. Barriers to implementation of automation can be minimized through various ways. After analysing barriers remedies can be applied over obstacles to minimize them. This study aims to examine current use of automation, barriers to implementation, remedial measures to minimize the barriers.

Keywords: Automation, Construction industry, Working safety, Barriers, Remedies.

1. INTRODUCTION

Automation is framed as relevant utilization of machines, electronic gadgets for the advancement work of construction project. Utilization of Automation framework in construction sites will quickly scale back development time and increment security by supplanting human in risky tasks and likewise establish a more secure climate to work. The use of Automation has developed quickly in other nations while in India the use of Automation is evolving but still there is a need of awareness for new machinery. Automation technologies will offer attenuated labor dependability, higher output and high productivity, diminished human mistakes, more working efficiency, flexibility, etc.

The right amount of study and analysis could help us develop automation technologies which would be beneficial for Indian construction industry and the barriers to implement them can be nullified by remedial measures when applied over them.

Definition

"Automation can be stated as proper utilization of machines, electronic gadgets and PC programming for the construction work to expand the efficiency of construction project, diminishes the length and relentless work, and builds the development security."

Aim & Objectives

The main Aim of this work is to analyse the use and effectiveness of automation, the future scope and the barriers to implementation of automation and remedies over the barriers. The objectives of this work are as follows-

1. To analyse the use and implementation of automation.
2. To find the practicability of using automation in construction industry.
3. To understand and compare the traditional method and automation.
4. To analyse the type of barriers to implementation of automation.
5. To find remedial measures over the barriers to implementation of automation.
6. To improve and accomplish ideal optimum use of construction quality, safety, and productivity.

2. SCOPE OF AUTOMATION

The extent of automation in development is wide,

enveloping every one of the phases of construction life from starting preparation and design, through construction of the provision, its activity and maintenance, to the eventual dismantling and recycling of buildings and engineering structures. Automation of construction resolves different and difficult issues connected with construction for instance, inferior quality of end result, scarcity of proficient labors, security of worker, unfortunate weather pattern, and short development period which these days are elements of project. Assuming that automation construction is carried, development work will be constant.

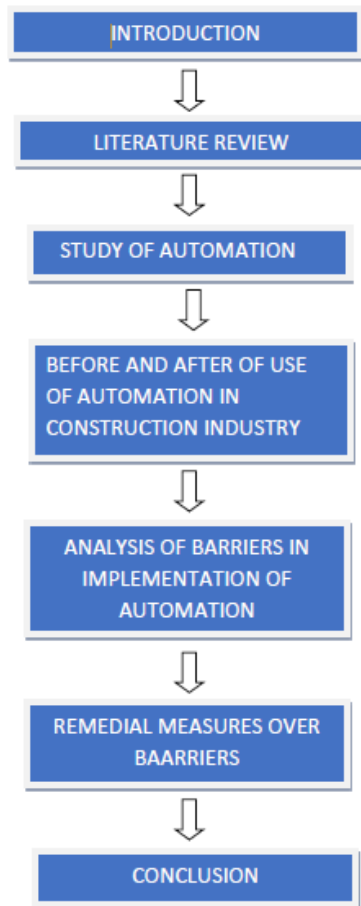


Figure 1 Work Plan

Advantages of Automation

- Higher security for both labors and public through creating and sending machines for risky positions.
- Uniform quality with higher precision than that given by proficient labors.
- Further developing workplace as customary manual work is diminished to least, so the labors are relieved from confining work positions.
- Taking out gripes about commotion and residue concerning works like expulsion, cleaning or arrangement of surfaces.
- Expanding efficiency and work effectiveness with diminished costs.

Disadvantages of Automation

- High capital expenditure required to invest in Automation.
- High cost needed for maintenance and updating automation technologies.
- Low awareness or knowledge of automation.

3. BARRIERS TO IMPLEMENTATION OF AUTOMATION

The foremost complexity of Robotics and Automation in construction is connected with the idea of the work environmental elements, which is extremely unstructured for the most part. There are many barriers such as high-cost investment, low awareness, high cost to maintain and update, difficult to use technology etc. which needs to be analyzed more to find remedial measures. The right amount of study and analysis could help us develop automation technologies which would be beneficial for Indian construction industry and the barriers to implement them can be nullified by remedial measures when applied over them.

4. CONCLUSIONS

The main aim of this research is to find current use of automation in construction work. And main barriers to the implementation of automation technologies in construction and finding remedial measures by analyzing them. Some of the remedial measures over barriers analyzed are reducing overall cost of technology, making maintenance cost cheaper, making user friendly technology. Small scale and medium scale firms are empowering to take on mechanization advances. They give data or training to workers to use mechanization innovations.

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