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"PRODUCTIVITY IMPROVEMENT IN AUTOMATIVE INDUSTRY BY USING WORK STUDY METHODS: A REVIEW"

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ABSTRACT

In this research paper we present the work content & variability reduction of MCV model in main assembly line. At Present found that line has very less automation & most of the operations are done manually. That causes the work content & variability is more in each station of Main assembly line. Present line has a problem of line balancing and also the problem of tools & fixtures at various stations. The requirement of the vehicles depends on the demand of the customers. Usually, the marketing peoples convey the requirement of the vehicles to the production planning and control department.

Keyword*: Productivity, MCV chassis assembly line, Time study, Method study*

I. INTRODUCTION

Work Study is a generic term for those techniques, particularly method study and work measurement, which are used in the examination of human work in all its contexts, and which lead systematically to to the investigation of all the factors which affect the efficiency and economy of the situation being reviewed, in order to effect improvement'. This has to do with Productivity Improvement, but also improvement of Quality and Safety. Work Study is the systematic examination of the methods of carrying out activities such as to improve the effective use of resources and to set up standards of performance for the activities carried out.
Method-study concerned with "the way in which work is done (i.e., method)". It is used to simplify the way to accomplish a work and to improve the method of production. Method-study results in a more effective use of material, plant, equipment and manpower. It employs a systematic approach involving: Select-Record-Examine-Develop-Install-Maintain.

Work study is the investigation process, by means of a consistent system of the work done in a industry, in order to attain the best possible use of the men, machines, materials, available in the building at present .
Method study and Work Measurement is the two major segment of work study. Figure helps to understand the two basic parts of work study method. Work study then aims at examining the method associate activity is being disbursed, simplifying or modifying the tactic of operation to unnecessary work or the wasteful use of resources and fixing a time commonplace for plying the activity.

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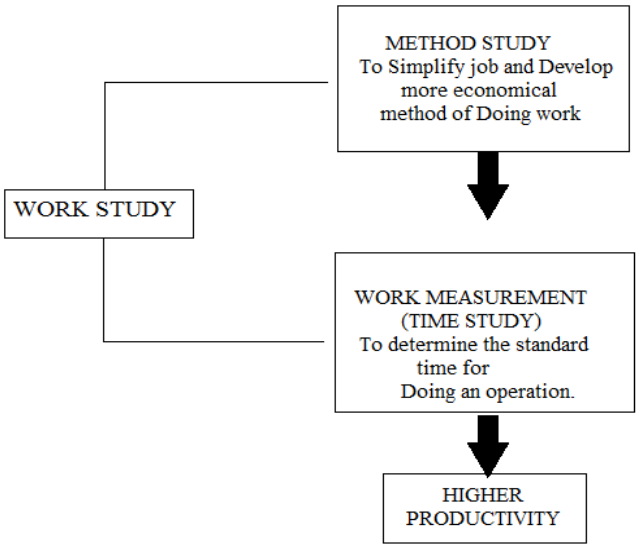

Figure 1: Components of Work Study

II. OBJECTIVES

1 Time Study

Time Study is a work Measurement technique which is involved to calculate the time of the operation in an assembly line with the help of an instrument (stopwatch).

Initially calculating the time of the fitments in units

2 Work study

A generic term for all those techniques which are used in the examination of human working all its context and which lead systematically to the investigation of all the factors which effect the efficiency and economy of the situation being reviewed in order to effect the improvement.

Basically it's a productivity raising technique by finding out the actual work content of a process and reduces it by proposing suitable improvements. It has two basic components viz: a. Method Study b. Work Measurement

3 Motion Study

Motion study is a technique of analyzing the body motions employed in doing a task in order to eliminate or reduce ineffective movements and facilitates effective movements.

• By using motion study and the principles of motion economy the task is redesigned to be more effective and less time consuming.

• Objective of motion study is job simplification so that it is less fatiguing and less time consuming.

III. LITERATURE REVIEW OF WORK STUDY

Work study is the investigation process, by means of a consistent system of the work done in a industry, in order to attain the best possible use of the men, machines, materials, available in the building at present .

Method study and Work Measurement is the two major segment of work study. Figure helps to understand the two basic parts of work study method. Work study then aims at examining the method associate activity is being disbursed, simplifying or modifying the tactic of operation to unnecessary work or the wasteful use of resources and fixing a time commonplace for plying the activity. The relation between productivity and work study so evident. To appriciate how work study helps to reduce costs and reduce the time of certain activity, it is necessary to examin more closely what the

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time consists. It is used to systematically study and improve human working condition by considering all factors that affect the working efficiency and conditions. Work study helps to systematically reduce the work content in an assembly line.

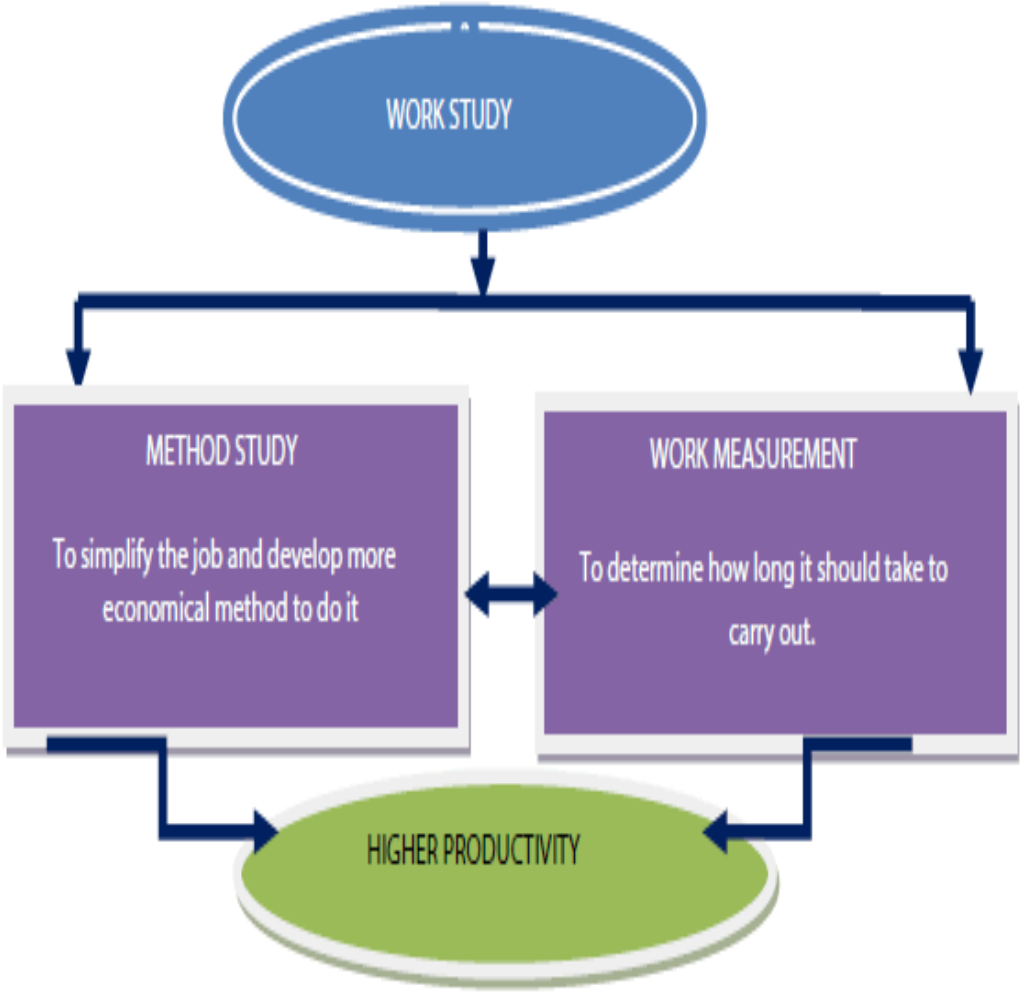

Figure 2: The diagram shows how work study helps in increasing productivity (Jain and Aggarwal, [1]).

This method is subdivided into two categories which are method study; used to modify method or develop new method and work measurement which is basically time study of each operation with the help of stopwatch.

The application of method study and work measurement is widely used tools in manufacturing industry as well as different fields. Literature reveals that in different sector like health sector this method is also used shows the improvement of the bottleneck process in a lamp assembly line by applying the work study method, ECLS, and line balancing. The result shows the improvement for both product and operator. The reduction in production time resulted in better productivity in system studied the manufacturing process in the automobile industry both before and after the improvement had been made, by using an operation process chart. In this research, we use the work study method for productivity improvement in particular assembly line by selecting a products in leather products industry with the help of management personnel. We try to balancing line and reduction of work content by critical analysis and time study. For research work, the particular assembly line is selected for observing each operation with time study for productivity improvement.

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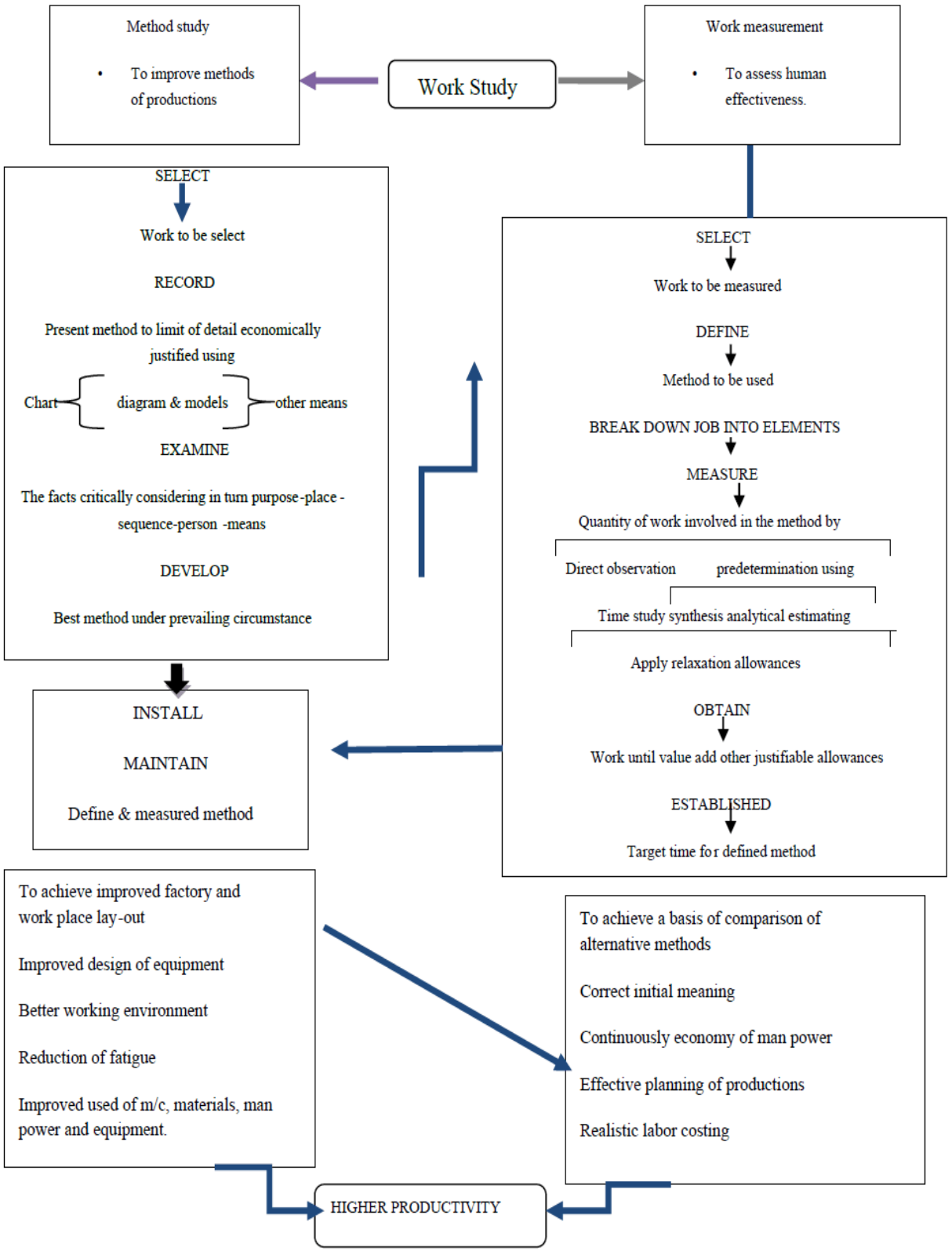

Figure 3: Co-ordination Procedure for Work Study for Higher Productivity (Jain and Aggarwal, [1]).

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VIII. CONCLUSION

From the above discussion it can be concluded that the process can be improved based on method study, time study i.e. by work-study techniques work procedure and proper utilization of machine and material. It will improve the current process by reducing the transportations, and reducing the worker's fatigue. After implementing the suggested improvement ideas the firm is able to increase its productivity.
This paper is to present idea to improve productivity which can be used by automotive industry to reduce the cycle time of the bottle neck operations, by utilizing the concept of method study, time study i.e. by work-study techniques.

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