CHAPTER 7

RESULTS & DISCUSSION
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7.1 INTRODUCTION

The last two chapters presented the statistical effects based on the data collected from the different manufacturing industries. This chapter will discuss the results of the practices of the sampled industries in comparison with the current literature in the pertinent area such as manufacturing technologies, manufacturing management and manufacturing performance etc.

The part starts with a brief recap of reviewed commercial enterprises profiles, took after by dialog of verdicts. The dialog of verdicts comprises of the act of studied commercial enterprises in connection to their assembling method introduction, their methodology towards interest in cutting edge producing advancements, and their discernible assembling execution. It likewise focused on the factual approach in characterizing the speculation of AMT and execution on assembling commercial enterprises. Contextual investigation has been produced to accept the outcomes in the study. The conclusion segment restates the part with the real verdicts of the study.

7.2 SURVEYED INDUSTRIES PROFILES

The survey has been accomplished via questionnaires to 150 selected Indian manufacturing industries. Informants are from the top management level and involved in some type of decision making at the strategic level for the manufacturing function. All the informants have been in their particular position for an average of 12 years. These have enhanced the creditability and dependability of the data collected in the study.

The study intends to find out the behavior of Indian manufacturing industries on AMT diffusion in regards to their industries manufacturing competitive
priorities and its impact on the manufacturing performance. The samples have been collected from four sectors of manufacturing industries. The maximum number of respondents are from automobile sector (30 respondents), followed by process sector (25 respondents), by electrical & electronics sector (20 respondents) and industrial machinery and equipment sector (18 respondents). Respondents were asked for to pick a reaction on five point interim scale; moored toward one side with slightest vital justifying a score 1 and the other by most essential justifying a score of 5.

As a matter of first importance to discover the relationship for every variable which is included in assembling commercial enterprises, then further test their need to be completed on components created to see whether they are typically disseminated to make important deductions. After which the theories testing have been performed by testing the level of similarity between the variables. The assembling methodologies of Indian assembling commercial enterprises are subject to diverse parts.

Being the biggest gathering amongst the overviewed businesses, automotive industries Have the largest amount of interest in ADT,AMcT,APT and AMS yet the least in cutting edge material taking care of frameworks. They likewise receive the most abnormal amount of aggressive methodology. Conversely, prepare commercial enterprises have put minimum in APT,AMHS and AMS. The auto area has broad interest in CAD,CAE,CNC,MRP and MRPII. The auto business takes especially high activity in item advancement, for moment propelling new items lines and new models. The car business embraces predominant procedures, for example, giving reliable items and elite items, cutting expenses, having a wide item range, supplying brilliant after deals administrations and going for initiating recently made products lines. Then again, commercial ventures add to the same perspectives on their execution. By and large, they do the best in giving solid and excellent produced merchandise, and giving magnificent after deals administrations. The aggressive need of all parts of assembling commercial ventures is quality and they accentuate less on expense.
The aggressive quality of distinctive parts shifts as per prerequisites. The level of venture on cutting edge fabricating advances by distinctive areas is diverse. The vehicles businesses have contributed all the more on cutting edge producing advances when contrasted with different parts. Process businesses have contributed less on cutting edge producing advances when contrasted with different areas. Commercial enterprises have not embraced the propelled assembling advancements because of fundamental change in setup and absence of framework.

7.3 FACTS OF MANUFACTURING STRATEGIES

There are various methods for characterizing assembling systems that an industry can take after, for instance, Slack et al (1995) distinguish four methods, in particular quality, adaptability, conveyance and expense. Commercial enterprises that receive the separation method mean to pick up an upper hand by offering an extraordinary item or administration, in term of the quality, adaptability and conveyance measurement of the items. All the commercial enterprises studied, regardless of their segment, concur that giving quality items is the most indispensable assembling system. This methodology is not altogether affected by whatever other variable, for example, size, ownership, division or time of the business.

The outcome demonstrates that after the quality, adaptability is the second most huge need of any industry. Commercial enterprises contending on conveyance method can contend on steadfastness, i.e. on auspicious conveyance and immediacy in coming to at the client's end. The expense is considered as the minimum significant focused need by all the areas. Aggressive quality is having two vital measurements specifically, how able an industry is contrasted with those that craving with blast it and that it is so equipped to advocating the effect of those powers that can reason it to be stuffed down. Generally speaking, it is presumed that commercial ventures overviewed don't fight on any specific quality alone, rather a blend of
diverse measurements of aggressive quality i.e. quality expense, responsiveness, adaptability, propelled assembling innovations, item customization, data innovation, deals and showcasing, assembling capacity and creativity. In all parts Improvement and execution is a basic variable.

Diverse mechanization steps shift as per distinctive parts. In vehicles segment, first inclination is given to improvement & usage took after by arranging, innovation appraisal, cost, idea, preparing and post advancement. In hardware businesses, first inclination is given to arranging took after by idea improvement, cost, innovation evaluation, advancement & execution, preparing and post development. In hardware commercial ventures the first inclination is given to advancement & usage took after by arranging, innovation evaluation, cost, idea, preparing and post development. In procedure commercial ventures first inclination is given to Taken a toll examination took after by innovation evaluation, advancement & execution, arranging, idea improvement, preparing and post development.

7.4 FACTS OF ADVANCED MANUFACTURING TECHNOLOGIES

The study utilizes the arrangement of AMTs in view of its capacity in the setting of assembling abilities. The estimation of cutting edge producing advancements is gotten from its level of speculation. Commercial enterprises were solicited to show the sum from interest in the individual innovation, on a five point interim size of 1 to 5, where 1 demonstrates no venture and 5 to show overwhelming speculation. The AMTs explored in this study can be assembled Into six areas in light of the writing of AMT studies which are as per the following:

- Advanced design and engineering technologies
- Advanced machining technologies
Advanced planning technologies

Advanced material handling technologies: It comprises of handling of materials such as AS/RS, AGV and AMHS etc.

Advanced management systems: It comprises of production management tools such as TQM, BPR, SPC, and JIT.

Advanced process improvement systems: It comprises of advanced process improvement technologies such as Benchmarking, Kaizen, Training, and Recycling.

The manufacturing performance is affected by using advanced manufacturing technologies in manufacturing industries.

7.4.1 ADVANCED DESIGN AND ENGINEERING TECHNOLOGIES

This segment, first inclination is given to improvement & usage took after by arranging, innovation appraisal, cost, idea, preparing and post advancement. In hardware businesses, first inclination is given to arranging took after by idea improvement, cost, innovation evaluation, advancement & execution, preparing and post development. In hardware commercial ventures the first inclination is given to advancement & usage took after by arranging, segment, first inclination is given to improvement & usage took after by arranging, innovation appraisal, cost, idea, preparing and post advancement. In hardware businesses, first inclination is given to arranging took after by idea improvement, cost, innovation evaluation, advancement & execution, preparing and post development. In hardware commercial ventures the first inclination is given to advancement & usage took after by arranging.

7.4.2 ADVANCED MACHINING TECHNOLOGIES

Which influence venture achievement. It is expected to help administrators
through this system stay away from the pitfalls and procure the key advantages of cutting edge innovation usage, and to guide future exploration. The extraordinary worldwide rivalry in assembling powers makers to expand their level of intensity in the worldwide business sector. Along these lines numerous assembling organizations are pressurized to experience a change forms to contend all the more adequately to a great influence venture achievement. It is expected to help administrators through this system stay away from the pitfalls and procure the key advantages of cutting edge innovation usage, and to guide future exploration. The extraordinary worldwide rivalry in assembling powers makers to expand their level of intensity in the worldwide business sector. Along these lines numerous assembling organizations are pressurized to experience a change forms to contend all the more adequately to a great degree focused worldwide numeros unmistakable and also immaterial advantages. Moreover, use of a specific innovation clears the street for reception of another and we can watch degree focused worldwide numeros unmistakable and also immaterial advantages. Moreover, use of a specific innovation clears the street for reception of another and we can watch

7.4.3 ADVANCED PLANNING TECHNOLOGIES

This segment, first inclination is given to improvement & usage took after by arranging, innovation appraisal,cost,idea,preparing and post advancement. In hardware businesses, first inclination is given to arranging took after by idea improvement, cost, innovation evaluation, advancement & execution, preparing and post development. In hardware commercial ventures the first inclination is given to advancement & usage took after by arranging, segment, first inclination is given to improvement & usage took after by arranging, innovation appraisal,cost,idea,preparing and post advancement. In hardware businesses, first inclination is given to arranging took after by idea improvement, cost, innovation evaluation, advancement & execution, preparing and post development. In hardware commercial ventures the first inclination is given to advancement & usage took after by arranging.

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7.4.4 ADVANCED MATERIAL HANDLING TECHNOLOGIES

Material handling technology is the minimum put innovation in this study. AMHS, AS/RS, AGV are utilized by assembling commercial enterprises to encourage the treatment of material in assembling operations. The automobile and hardware businesses have moderate interest in material taking care of advances. It is reasoned that material taking care of advancements gets the slightest consideration in assembling commercial enterprises.

7.4.5 ADVANCED MANAGEMENT SYSTEMS

Advanced management system can be classified as classified in many manners. Automobile sector have contributed the greatest assets on TQM took after by BPR, SPC and JIT. Electronics sector have contributed the greatest assets on TQM took after by SPC, BPR and JIT. Apparatus commercial ventures have contributed the greatest assets on TQM took after by SPC, JIT and BPR. Process commercial enterprises have contributed the greatest assets on TQM took after by SPC, JIT and BPR. The level of speculation on cutting edge administration framework is distinctive in diverse parts.

7.4.6 ADVANCED PROCESS IMPROVEMENT SYSTEMS

Bench marking, kaizen, preparing and reusing are some cutting-edge process change frameworks in assembling businesses. Automobile sector have
contributed the most extreme assets on kaizen took after by administration preparing, reusing and bench marking. Electronics sector have contributed the greatest assets on administration preparing took after by reusing, bench marking and kaizen. Hardware commercial enterprises have contributed the greatest assets on kaizen took after by administration preparing, reusing and seat stamping. Process commercial ventures have contributed the greatest assets on kaizen took after by reusing, administration preparing and seat stamping. It is presumed that the speculation on cutting edge process change framework is distinctive in diverse segments.

7.5 MANUFACTURING PERFORMANCES

With the unmistakable quality on lessening expenses and expanding assembling cutting edge fabricating advances. It has been watched that because of reception of cutting edge administration frameworks, exhibitions of assembling commercial enterprises have enhanced and execution components are distinctive for diverse segments. In vehicles, gadgets and methodology commercial ventures owing to appropriation of cutting edge administration frameworks, cost adequacy has expanded taken after by advancement group responsibility, gauge fake division and enhanced nature of work. In apparatus commercial ventures because of reception of cutting edge administration frameworks, gauge counterfeit division and quality change has been accomplished trailed by expense viability and improvement group responsibility. It has been watched that in vehicles businesses general execution is enhanced by reception of cutting edge fabricating innovations. Car commercial enterprises are generally influenced by profit took after by plant productivity, market execution and item administration. Electronics industries are basically influenced by plant effectiveness took after by gainfulness, market execution and item administration. Hardware commercial enterprises are for the most part influenced by plant effectiveness took after by gainfulness, item administration and business execution. Process commercial ventures are generally influenced by plant proficiency took after by benefit, market execution and item administration. It is inferred that productivity upgrade
of assembling commercial enterprises can be attained through cutting edge fabricating advancements.

7.6 CASE STUDIES

The purpose of the case studies presented in this study is to identify the critical factors that influence such impacts and to develop a tool to assist industries in the implementation of AMT. The various valuable improvements implemented in the case studies can be summarized as:

- Industry A: Process Improvement by Advanced Technologies
- Industry B: Efficiency Improvement by Advanced Design
- Industry C: Productivity Improvement by Advanced Cutting Tool Technology
- Industry D: Process and Efficiency Improvement by implementing Kaizen and Advanced Training Techniques

The implementation of new technology within an industry for the purpose of improving efficiencies, developing flexibility and enhancing output represents an innovative development.

7.7 CONCLUSION

In this research, a survey of Indian manufacturing industries has been carried out to study various AMT issues. Four main sectors have been encompassed in the survey which are automobile, electrical and electronics, machine tools and process sector. All sectors emphasized on quality as competitive priority. The largest groups of surveyed industries i.e. automobile industries have the highest level of investment in ADT, AMcT, APT and AMS but it has the lowest investment in advanced material handling systems. In contrast, process industries have invested least in APT, AMHS and AMS. The level of investment on advanced manufacturing technologies by different sector is variable. The purpose of the case studies presented in this study is to ascertain the impacts of AMT in manufacturing industries. The implementation of new technology within an industry for the purpose of improving efficiencies, developing flexibility and enhancing output represents an innovative development.