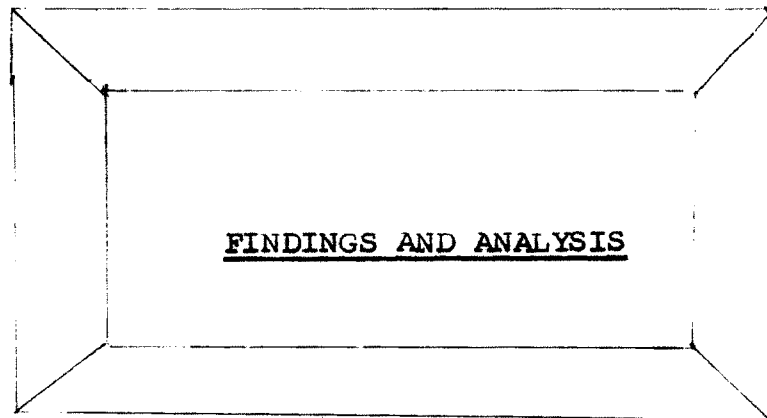


CHAPTER - IV



FINDINGS AND ANALYSIS

CHAPTER - IVFINDINGS AND ANALYSIS

This chapter deals with the analysis and interpretation of the data which collected with the help of questionnaire, personal interviews and discussions with the managers and owners of the selected units visited.

The inferences have been drawn by classifying and tabulating the data which runs as follows, while calculating the percentages, figures have been rounded up without taking the percentage fraction.

A) PRODUCTION PLANNING :TABLE NO.4.1DISTRIBUTION OF DEPARTMENTWISE PRODUCTION PLAN

Planning Firms	Existence of Dept.	Existence of sub-Dept.	TYPES OF PRODUCTION PLAN				Total
			Project Product- ion Plan	Batch Product- ion Plan	Continu- ous Product- ion Plan	ACM	
YES	YES	Yes	-	-	-	-	-
		No	-	3	5	1	9
NO	NO		-	5	1	6	12
			-	2	-	2	4
TOTAL				10	6	9	25
NOTE : ALSO : ANY OTHER METHOD							

Table No. 4.1 indicates that, out of total units surveyed, majority of them, where, as 84% units prepare production plan and remaining units do not prepare production plan. Table also indicates out of total units under study, majority of them, i.e. 64% units have no separate production planning department and the rest have separate department. Not a single firm has sub department of production planning department like Information sub department, Implementation sub department and Planning sub department, It is also observed that, out of total firms taken for study majority of them i.e. 40% firms adopt Batch Production Plan, 24% firms adopt continuous production plan, and the rest adopt other production plan.

ASSISTANCE OF CONCERNED HEAD :

It is found from the study that production plan is prepared by factory engineer but in majority firms, where as in 64% while preparing the production plan he does not take any assistance from other officers like purchasing agent, cost accountant, personal manager etc.

The above facts are noted merely due to , change in production function, weak financial position and lack of qualified personnel.

TABLE NO.4.2DISTRIBUTION OF SALES FORECASTING METHODS AND THEIR TIME LAG

Forecasting Firms	Time Lag	Methods of Sales Forecasting					Non forecasting firm	Total	
		SBI	EOM	MTM	CTSA	SDM			ACM
YES	3 Month	-	-	2	-	-	1	-	3
	6 Month	2	-	4	3	1	-	-	10
	1 Year	-	1	2	2	4	-	-	9
	2 Year	-	-	-	-	-	-	-	-
	AOY	-	-	-	-	-	-	-	-
NO		-	-	-	-	-	-	3	3
TOTAL		2	1	8	5	5	1	3	25

NOTE : SBI : Survey of Buyers Intention

EOM : Expert Opinion Method.

MTM : Market Test Method.

CTSA : Classical Time Series Analysis.

SDM : Statistical Demand Method.

ACM : Any Other Method.

AOY : Any Other Year.

Table No. 4.2 indicates that out of 25 firms surveyed majority of them, that is 88% firms, are preparing the sales forecasting plan and 12% firms, are not preparing. Out of these 88% firms 36% firms adopt Market Test Method, 5% firms select Experts Opinion Method, 9% firms adopt Survey of Buyers Intention Method, 23% firms each follow Classical Time Series Analysis Method and Stastical Demand Method and the rest adopt other method such as Executive Judgement Method. This table also states that out of 88% forecasting firms in 14% firms the period of sales forecasting 3 months, in 45% firms the period is 6 month and in 41% firms the period is one Year.

SHORTCUMING OF SALES FORECASTING :

By analysing the data regarding sales forecasting of these 88% firms in 18% firms it is found that the sales forecasting system has following shortcumings.

- a) Objectives set for sales forecasting are foud ambiguous.
- b) Procedure of sales forecasting is unscientific.
- c) Absence of continuous evaluation of sales forecasting.
- d) While making the sales forecasting all those factors which influences the sales are not considered.

Having cross examined the reasons for forecasting in 12% firms it was noted that these firms are small in size with one or

two jobs at the same time they lack finance and they do not find it important to go for any forecasting. Similarly, as we find variation in the time lag which was due to the various types of products called for different time duration for forecasting.

TABLE NO.4.3

DISTRIBUTION OF DEPARTMENTWISE PRINCIPLE OF PRODUCT DEVELOPMENT

Existence of Deptt.	Principle of Product Development							Total
	Diversification			Simplification	Standardisation	Specialisation	AOP	
	Horizontal	Vertical	Mixed					
YES	3	2	-	1	-	-	-	6
NO	4	3	-	4	4	2	2	19
TOTAL	7	5	-	5	4	2	2	25

NOTE : Any Other Principle.

Table No. 4.3 exhibits that all 100% firms are adopting principle of product development, where as 48% firms adopt diversification principle, 20 % firms follow simplification principle, 16% firms select standardisation principle, 8% firm adopt specialisation principle, and the rest are adopt other principle like renovation, Out of 48% firms adopting

diversification principle of product development, 58% firms adopt horizontal type of diversification and 42% firms adopt vertical type of diversification. Table also indicates that out of 100% firms only 24% firms have separate Product Research and Development Department.

CONSIDERATION OF FACTORS :

It is found from the study that 40% firms did not consider necessary factors which influences the product design and development i.e. likes and dislike customers, cost of product development, nature of competitive product etc.

We observed that the variations in the adoption of specific principle of product development merely due to the various types of products, likes and demands of consumers, cost of product development, competitors principle of product development etc. 76% firms were not financially able to establish a separate Product Research and Development Department.

40% firms didnot considered necessary factors influences the products design and development, because, some of the firms unable to forecast all such factors, some of the firms do not know importance of product design and development and some of the firm neglect to consider all factors.

TABLE NO.4.4DISTRIBUTION OF TIME LAGWISE BUDGETED AND NON BUDGETED FIRMS

Budgeted or Non Budgeted Units.	TIME LAG OF BUDGET					Non Budgeted Units	Total
	3 Month	6 Month	1 Year	5 Year	AOY		
Budgeted Units	2	10	11	-	-	-	23
Non Budgeted Units	-	-	-	-	-	2	2
TOTAL	2	10	11	-	-	2	25

NOTE : AOY : Any Other Year.

Out of the units surveyed, majority of them, that is 92% units preparing the production Budget, where as 8% firms do not prepare the production budget. Out of 92% units preparing production budget, 9% units prepare production budget for 3 months, 43% firms for 6 months, 47% firms for one year.

It has been brought to light that 2 of the firms failed to prepare production budget because, these firms find lot of uncertainty in getting the raw materials in time, at the same

time these organisations face the absence of qualified personnel.

Fluctuations in the time duration for production budgeting is once again due to variation in the production process.

TABLE NO.4.5

MANUFACTURING METHODS AND PROCESSES

Methods of manufact- uring → processes of manufact- uring ↓	Process product- ion system	Job Product- ion system	Batch producti- on System	Continuous Production Systems	ACM	Total
Continuous	1	-	-	-	-	1
Analytical	-	-	-	-	-	-
Synthetic	-	-	-	-	-	-
Assembling	1	-	-	-	-	1
None of this	-	8	10	5	-	23
TOTAL	2	8	10	5	-	25

NOTE : ACM : Any Other Method.

Table No. 4.5 indicates that out of the units surveyed, majority of them, that is 40% firms select Batch Production System, 32% firms adopt Job Production System, 20% firms adopt Continuous Production System and remaining 8% firms adopt Process Production System. Out of the 9% firm adopting Process Production System one firm each adopt a Continuous and assembling process of manufacturing.

TABLE NO.4.6

DISTRIBUTION OF METHODS AND TYPEWISE PLANT LAYOUT

Methods of Plant Layout/Types of Plant Layout. → ↓	Product Layout	Process Layout	Mixed Layout	Static Layout	Total
L	4	-	1	-	5
N	1	-	-	-	1
S	3	2	1	-	6
U	5	3	1	-	9
V	-	1	-	-	1
Z	1	1	-	-	2
No Type	-	-	-	1	1
TOTAL	14	7	3	1	25

Table No. 4.6 states that, out of the units under study 56% firms adopt product layout system, 28% firms adopt process layout system, 12% firms adopt mixed layout system and remaining 4% firms adopt static layout system of plant layout.

Table No. 4.6 also indicates that out of these firms majority of the firms that is 36% firms have 'U' shape plant layout while 24% and 20% have 'S' and 'L' shape plant layout respectively.

DRAWBACKS :

It is found from the study that the following drawbacks exist in the firms .

- i) 8% firms are not able to maintain consistency and proper speed in production flow.
- ii) 20% firms are not able to utilise their human power, machine power and available space maximum.
- iii) 36% firms are suffering from a drawback of lack of insufficient place for their labours and machine movement.

Though informal discussions and observations the important fact noted was 72% firms are giving emphasis on plant layout but they are failing to take in to consideration the other elements like erection of works and service station internal transport system etc. which needs to be given due consideration. Similarly, it is observed in 36% of the firms failing to consider the factors

influencing the layout system of plant, such as production volume and type, nature of machinery, legal restrictions etc.

TABLE NO.4.7

OF
DISTRIBUTION, METHODS, DEPARTMENTWISE FORM OF PURCHASING ORGANISATION

Existence of Department	Form of Purchasing Organisation	METHODS OF PURCHASING						Total
		Market Purchasing	Contract Purchasing	Tender purchasing	Purchasing by Requirement	Scheduled Purchasing	ACM	
Yes	Centralised	4	3	2	5	5	-	19
	Decentralised	-	-	-	-	-	-	-
No	Centralised	2	1	1	2	-	-	6
	Decentralised	-	-	-	-	-	-	-
TOTAL		6	4	3	7	5	-	25

With regard to the method of purchasing and the form of purchase organisation Table No. 4.7 highlights the various methods of purchasing such as market purchasing, contract purchasing, tender purchasing, etc. being adopted by the units under study. The important aspect noted was purchasing :

by requirements being adopted by 28% of the firms which is the maximum number 24% and 20% of the units follow market purchasing and scheduled purchasing respectively. While very few of them go in for Tender Purchasing. In terms of form of purchasing organisation irrespective of the purchase department all the 100% of the firms have centralised purchasing organisation. The variations in the purchase method, is due to the fact of lack of finances and small operations.

CONSIDERATION OF FACTORS :

16% of the firms surveyed, the various factors affecting the purchase decision like quality of materials, delivery time etc. is not being considered fully.

APPLICATION :

During the interviews it was noted among 24% of the firms failing to adopt the principles of scientific purchasing and scientific procedure of purchasing.

PURCHASING FORMS :

Approximately 50% of the firms have been identified for not using the forms of purchasing like follow up form, receiving form, rejection form etc.

TABLE NO.4.8DISTRIBUTION OF ORGANISATION AND METHODWISE STOREKEEPING

Application of Principle of scientific store keeping.	Types of organisa- tion of store keeping.	METHODS OF PRICING					Total
		LIFO	FIFO	SAM	WAM	MPM	
Yes	Centralised	2	4	5	4	1	16
	Decentralised	-	-	-	-	-	-
No	Centralised	-	1	-	1	7	9
	Decentralised	-	-	-	-	-	-
TOTAL		2	5	5	5	8	25

NOTE : LIFO : Last in First Out.
 FIFO : First in First Out.
 SAM : Simple Average Method
 WAM : Weighted Average Method
 MPM : Market Price Method.

Table No. 4.8 states that, out of the units, surveyed majority of them, that is 64% firms are applying the scientific store keeping principles while the rest are not applying the scientific store keeping principles. Table also states that, all the 100% firms surveyed are following centralised store keeping system. While issuing the materials to production department the

32% of the firms adopt market price method and 20% each adopt first in first out method, simple average method, weighted average method, on the contrary hardly 2 firms follow last in first out method for pricing the materials.

MATERIAL REQUISITION SLIP :

Out of total firms under study, 76% firms have using material requisition slip while rest are not using material requisition slip.

BIN CARDS AND STORE LEDGER :

Out of total firms, 60% firms are maintaining bincards and store ledger accurately, while rest are not maintaining accurately, properly.

CODIFICATION AND CLASSIFICATION :

It is found from the study that, majority of the firms, i.e. 68% firms codify and classify of their materials while the rest do not codify and classify.

FIRE FIGHTING DEVICES :

Out of the total firms under study majority of firms like 64% firms are keeping the fire fighting devices in the stores while rest are not keeping.

36% firms are not applying the scientific store keeping principles because, some of the firms are financially weak, some of the firms have no appoint separate well qualified personal who possess the knowledge of scientific system of storekeeping some of the firms do not find it feasible to do so. We observed that there are variations in adoption of methods of purchasing while issuing the materials to production department this is merely due to nature of materials, price fluctuations of materials, nature of firms, period of storing, attitude of the management etc.

TABLE NO.4.9

DISTRIBUTION OF METHODS AND LEVELWISE INVENTORY CONTROL

Methods of Inventory Control						
Scientific System of Inventory Control	Inventory Control by ABC Analysis	Stock Verification			Total	
		Annual Stock Verification	Periodic Stock Verification	Perpetual Stock Verification		
Maximum Stock Level	-	-	-	-	-	
Minimum Stock Level	5	-	-	-	5	
Reordering Level	5	-	-	-	5	
Danger Level	-	-	-	-	-	
No Level	-	5	7	3	15	
Total	10	5	7	3	25	

Of the various methods of inventory control Table No. 4.9 highlights 40% of the firm following the scientific system to inventory control comprising of various levels of stocking. Hardly 20% follow the ABC analysis method of inventory control. The rest of 40% firms go for stock verification method of those going for stock verification method 70% adopt Annual Stock Verification, the only reason being cited is the feasibility aspect. Those following scientific system of inventory control 50% each consider minimum and reordering level.

STOCK VERIFICATION :

It is found from the study that, majority firms, that is 64% firms while verification stock they verify all types of materials keep in store while the rest are verify only finished stock.

TABLE NO.4.10

STANDARDISATION OF METHODS AND EQUIPMENTS OF MATERIAL HANDLING

Standardisation of Methods and equipments of material Handling.	Non standardisation of methods and equipments of material Handling	Total
17	8	25
TOTAL 17	8	25

Table No. 4.10 shows that, out of the units surveyed, majority of them, that is 68% firms have standardised methods and equipments of material handling and remaining, firms have not standardised.

CONSIDERATION OF FACTORS :

Out of the firms in question 36% firms have not considered all the factors which affect the selection of material handling equipment like manufacturing process, plant layout, cost etc.

TABLE NO.4.11

DISTRIBUTION OF METHODS, TOOLWISE SCIENTIFIC TIME STUDY

Tool of Time Study/→ Methods of Time Study ↓	<u>TIME STUDY ON SCIENTIFIC BASES</u>			Time Study on non Scientific basis	Total
	Time Study with a stop watch	Synthetic Timing	AQM		
Continuous Timing	1	-	-	-	1
Accumulating Timing	1	-	-	-	1
Snap Back Timing	3	-	-	-	3
Time Study on non Scientific Basis	-	-	-	20	20
Total	5	-	-	20	25

Table No. 4.11 states that, out of total number of firms in question, majority of them, where as 80% firms have not used time study on scientific bases and remaining firms have used time study on scientific bases. The Table also shows that the time study technique which is used in 20% firms with the help of stop watch out of 20% firms which are following the scientific time study techniques 20% firms each adopt continuous and accumulating method of timing and remaining firms follow snap back timing method.

80% firms are not used time study technique on scientific bases because, some of the firms are financially weak. The production methods and processes of some of the firms are not so complicated.

There are variations in the adoption of time study technique. This is merely due to various types of production methods, processes, cost of application of technique etc.

TABLE NO.4.12DISTRIBUTION OF METHODS, TOOLSWISE APPLICATION OF MOTION STUDY

Application of Motion Study Technique					Total
Methods of motion analysis/ Tools of motion study	Qualitative Analysis	Quantitative Analysis Relative to Time.	Non application of motion study AQM Technique		
Therbling Analysis	-	-	-	-	-
Motion Study Questions	-	2	-	-	2
Process Charts	1	1	-	-	2
Principle of Motion Study	-	1	-	-	1
Non Application of motion study Technique	-	-	-	20	20
TOTAL	1	4	-	20	25

Table No. 4.12 states that, out of total number of firms in question, majority of them, where as 80% firms do not use motion study technique and the rest use motion study technique. Out of 20% firms which are using the motion study technique, majority of them, i.e. 80% firms adopt quantitative

quantitative analysis and remaining firm follow qualitative analysis as a method of motion analysis. Table also exhibits that, out of 20% firms which are using motion study technique, majority of them, where as 40% firms adopt motion study by questionnaire, 40% firms adopt process charts and remaining one firm adopt principle of motion study as a tool of motion study.

80% firms have not used motion study technique, because application of motion study is not financially possible to them. Also the movements of mens and machines is not so complicated. There are variations in adoption of methods and tool of motion study which is due to various types of production process, methods, mens and machines movements etc.

TABLE NO.4.13

DISTRIBUTION OF DEPARTMENT AND TECHNIQUEWISE PRODUCTION CONTROL

Existence of Production control Department	Existence of sub-Department	Technique of Production Control				Total
		Gantt Charts	Critical Path Method	Production control Boards	None of this	
YES	Yes	-	-	-	-	-
	No	-	5	-	-	5
No		15	5	-	-	20
<u>TOTAL</u>		<u>15</u>	<u>10</u>			<u>25</u>

Table No. 4.13 states that, out of total firms in question majority of them, whereas, 80% firms have not separate production control department and remaining 20% firms have separate production control department. This table also states that, out of total firms, majority of them, i.e. 60% firms adopt Gantt charts and remaining 40% firms adopt critical path method as a technique of production control.

SUB DEPARTMENT OF PRODUCTION CONTROL DEPARTMENT :

Out of firms in question not a single firm has sub department of production control department like Routing, scheduling, Despatching and follow up.

TABLE NO.4.14

DISTRIBUTION OF ROUTE SHEETS AND TYPEWISE PRODUCTION ROUTE

Preparation of Production Route	Use of Route Sheet	<u>TYPES OF ROUTE SHEETS</u>				Total
		Master Route Sheet	Specific Route Sheet	AOM	Non Preparation of Production Route	
YES	Yes	8	14	-	-	22
	No	-	-	-	-	-
No		-	-	-	3	3
<hr/>						
TOTAL		8	14	-	3	25
<hr/>						

Table No. 4.14 indicates that out of total firms in study 88% firms are preparing production route before the starting of production activity and the rest are not preparing of the organisations preparing the production route also use the route sheets, of this 14 firms use specific route sheets and 8 of them use master route sheets.

PROCEDURE OF ROUTING :

Out of firms which are preparing the production route, majority of them i.e. 52% firms are following the scientific procedure of routing and the rest are not following.

TABLE NO.4.15

DISTRIBUTION OF TYPEWISE SCHEDULING

SCHEDULING FIRMS				NON SCHEDULING FIRMS		Total
Master Scheduling	Detail Scheduling	Operation Scheduling	Production Scheduling	AOM		
10	3		11	-	1	25
10	3		11	-	1	25

In Table No . 4.15 we observed that 96% of the firms adopt scheduling as a tool of production control. Of these approximately

42% use master scheduling, 46% use production scheduling, while hardly 12% use detail operation scheduling. These fluctuations are found because of the nature of production process, types of product and the managements attitude.

TABLE NO.4.16

USE OF DESPATCHING FORM AND ORGANISATIONWISE DESPATCHING

Organisation of Despatching/→ Use of Despatching form ↓	Centralised	Decentralised	Total
Yes	19	2	21
No	4	-	4
Total	23	2	25

Table No. 4.16 indicates that, out of total firms under study, majority of them, where as 92% firms are adopting centralised organisation of despatching and the rest firms are following decentralised organisation of despatching. This table also highlights, that out of total firms, majority of them, i.e. 84% firms are using the despatching forms and the rest are not using.

DESPATCH BOARD :

It is found that out of total firms, majority of them, where as 80% firms have not despatch board and remaining firms have despatch board.

DESPATCHER :

It is found that no firm has appointed a despatcher for despatching function.

There are variations in adoption of organisation of despatching this is due to only because size and nature of firms, requirements of despatching of every firm, nature of production etc.

TABLE NO.4.17DISTRIBUTION OF DEPARTMENTWISE AND PRODUCTWISE FOLLOW UP

Productwise follow up	Departmentwise follow up	Total
23	2	25
23	2	25

Table No. 4.17 exhibits that, out of total firms under study majority of them, i.e. 92% firms are adopting productwise follow up and the rest are adopting departmentwise follow up.

EXPENDITURE :

It is found that no firm has appointed an expenditure for follow up function.