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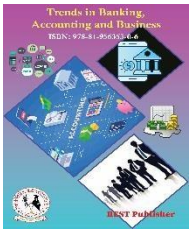

A Study on Plant Layout Design on Type of Production System with Reference with PVS Technologies, Hosur

***B. Sanjay, S. Vishal**

Adhiyamaan College of Engineering, Autonomous, Hosur, Tamilnadu, India.

*Corresponding Author Email:**sanjaysanjay935@gmail.com**

Abstract. This research aims to improve the plant layout of pulley's factory to eliminate obstructions in material flow and thus obtain maximum productivity. The present plant layout and the operation process of each section (i.e. sand mold, core ware house, core making, and disassembly surface finishing, furnace, and inspection sections) have been investigated. The problem in term of material flow of each operation section was identified. The result showed that disassembly surface finishing and inspection sections should be allocated to make the good material flow. The suitable of new plant layout can decrease the distance of material flow, which rises production.

1. INTRODUCTION

In today's increasing global competition, businesses manufacturing environment continuously have to change in order to remain productive and efficient, Kumar and Harms (2004). The plant layout and with that the material flow have shortages in almost all manufacturing companies. These shortages are often effects of different events that have taken place gradually; products change or are phased out, new products are introduced, product volumes change, increase of technological power signifies new modern machines and with more integrated processes, new production techniques, processes are added or removed due to increased or decreased outsourcing etc. Accordingly a company's original and effective material flow has changed and that is principally regarded as a common growth pattern in many companies

2. OBJECTIVES OF THE STUDY

1. To study the level of commitment and involvement by an employee in the company.
2. To evaluate physical, cognitive and emotional feelings of employees about their role performances.
3. To study the employee opinion about career development opportunities in the organization.
4. Plant layout is the plan for arranging the physical facilities and manpower required to manufacture a product with the objective of utilizing them in an effective manner.
5. The primary objective of plant layout is to minimize the movement of men and material in the plant.
6. Minimizing handling of materials Maintaining flexibility of operations.

3. SCOPE OF THE STUDY

1. There is the proper utilization of cubic space (Le. length, width, and height). Maximum use of volume available should make. For example, conveyors can be run above head height and used moving work in progress or tools and equipment can suspend from the ceiling. The principle is particularly true in stores where goods can store at considerable heights without inconvenience.
2. Waiting time of the semi-finish products minimize.
3. Working conditions are safer, better (well-ventilated rooms, etc.) and improve.

4. Material handling and transportation minimize and efficiently control. For this, one has to plan the movement distances between different work areas – as well as the number of times such a movements occur per unit period.
5. The movements made by the workers are minimizing.

4. RESEARCH METHODOLOGY

Researchmethodologyisawayofsystematicallysolvingtheresearchproblemresearchmethodologydeals with the research design used and methods used to present study. Research is a systematic and scholarly application of scientific method. Research is an inseparable part of human knowledge. Research in social work is the critical enquiry into and the scientific testing of the validity of social work organization, functions, method in order to verify, generalize and extend social work knowledge, skill, concept and theory. Social work research aims to clarify facts a given universe of discourse, to find the specific determined sequences and inter-relationship of facts and their social setting.

5. DATA ANALYSIS

TABLE 1. Regression Model Summary

Model	R	R Square	Adjusted RSquare	Std. Errorof theEstimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.311a	.096	.046	.69762	.096	1.900	5	89	.102

Predictors: (Constant), Capacity planning, Production control, Production planning, Production planning and control efficient, Production process

6. REGRESSION SAMPLE MODEL

Case Processing Summary			
		N	Marginal Percentage
production planning	mcfs	10	12.7%
	ppmtp	22	27.8%
	tote	16	20.3%
	mdip	8	10.1%
	pdep	10	12.7%
	etad	13	16.5%
production planning capacity	mrmq	10	12.7%
	imie	12	15.2%
	ycre	9	11.4%
	hwcy	13	16.5%
	tota	14	17.7%
	totk	12	15.2%
	toid	9	11.4%

Valid	79	100.0%
Missing	0	
Total	79	

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	226.080			
Final	223.974	2.106	7	.954

Goodness-of-Fit			
	Chi-Square	Df	Sig.
Pearson	213.087	198	.220
Deviance	182.698	198	.775

Linear regression

Power Analysis Table							
	N	Actual Power b	Predictors		Test Assumptions		
			Total	Test	Power	Partialc	Sig.
Type III F-test a	107	.912	100	77	.9	.9	.05

7. FINDINGS OFSTUDY

1. 54% of respondents are male employees working
2. 46% of respondents of employees are at the age between 24 -28
3. 33.1% of respondents of employees are experienced between 3-5years 4. 43% of respondents are working in Research & Development department.
5. There is significance difference between Age and Independent variable as calculated value is more than significance level.

Suggestion

1. Use the model to make a detailed layout of the storage areas. And then implement layout suggestion 2 and workplace layout B.
2. Start pre-assemble the standard lengths of the RK-cable, this is a time consuming operation that today is performed by the assemblers when it is time to assemble the cable. If this suggestion is put to use at the company it will result in that the assembler can spend his time making the substation and that in turn will reduce the throughput time of the station.
3. Implement kabana system in the bar production in order to authorize the production of special bar types and for the preassembly of the doors and racks, in order to authorize the delivery of more raw material.

8. CONCLUSION

According to the analysis of the workflow for the pulleys with the size of 2 wrong 3 inch, it was found that sand mold, disassembly and surface finishing, core ware house, core making, furnace, and inspection sections should be modified for the layout for convenient workflow. The distance of workflow from the modified plant layout of their sections can be reduced. Not only improving workflow but also the accidents from objects which were not in order during material transportation can be decreased. Finally, rearranging layout decreased distance and time consumption in flow of material and accidents, resulting in an increase in productivity.

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