

VI. COMPARISON OF ASSEMBLY LINE BEFORE AND AFTER THE IMPROVEMENT

In this study, an existing assembly line was tried to balance by some specific improvement techniques suggested by

experts. However, the end results for these techniques are not the same. So, a comparative picture of the assembly line before and after deploying the improvement techniques is summarized in Table VIII.

TABLE VIII THE COMPARATIVE PICTURE OF THE ASSEMBLY LINE BEFORE AND AFTER THE IMPROVEMENT

Topic	Before Improvement	After Improvement		
		RPW	LCR	CIT
Line Efficiency (%)	43.04	74.35	81.78	68.16
Balance delay (%)	56.96	25.65	18.72	31.84
Total productive time (minutes per cycle)	7.216	7.216	7.216	7.216
Total idle time (minutes per cycle)	9.401	2.507	1.608	3.114
Number of workstation	19	11	10	12
Labor productivity (units per worker)	32	62	68	57

And from Table VIII it can be seen that Largest Candidate Rules (LCR) is the best techniques for improvement as it produces the optimal solution after improvement.

VII. CONCLUSION

The actual line efficiency and balance delay of the studied line were 43.04% and 56.96% respectively. After improving with existing resources, the efficiency and balance delay became 80.78 % and 18.72% respectively. So, from these improvement results, it is proved that Largest Candidate Rules is an effective improvement tool in this situation. However, the employee of the analysed line's performance rating was not sufficient, thus it was deleted from the study. So, in future investigations, a standard working method should be developed for better improvement. And in this factory, enough multi-skilled workers should develop to get a more balanced line and revise the machine allowance according to the thread needle configuration of the respective type of machine.

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