CHAPTER VI
CONCLUSION AND RECOMMENDATION

This chapter contains conclusions from the research that has been done and recommendation for further.

6.1   Conclusion

The conclusions to answer the problem formulations and achieve the objectives of this study are as follows:

1. The current condition of the changeover process was plagued with inefficiencies due to factors such as: inadequate worker allocation, lack of standardization, and reliance on manual methods. Dark color transitions and a lack of clear task differentiation further exacerbated delays, leading to an average changeover process time exceeding 80 minutes. Root cause analysis (RCA) revealed significant bottlenecks in activities like: roll cleaning, plate handling, and register setting, highlighting the need for targeted interventions.

2. Several improvements that have been implemented to improve the changeover process are: design checklist form for internal and external activities of changeover process; repair and modification the signal system that indicates the cleaning level of roll cleaning; repair and modification the automatic system for opening and closing the plate cover door, removing old plate, and installing new plate; use of densitometer tool when checking on print color density; and cleaning of critical parts that affect printing output such as gripper pad, impression cylinders, and dampening units.

3. The average improvement rates (the percentage reduction in changeover process time after improvement) ranged between 21% and 46%, depending on the complexity of the task and worker availability. These results demonstrate the effectiveness of aligning technological enhancements with workforce training and process standardization.

6.2   Recommendation

Recommendation that can be given for opportunities for further research are as follows:

1. Establish structured feedback mechanisms to capture insights and suggestions from workers who are directly involved in the changeover process. This bottom-up approach can uncover practical challenges and opportunities for refinement that may not be apparent in data-driven analysis alone.

2. Future studies should assess the impact of advanced training modules, focusing on problem-solving, process optimization, and effective use of new technologies. Customized training sessions based on team-specific performance data could further enhance outcomes.