

## CHAPTER VI

### CONCLUSION AND SUGGESTION

This chapter contains conclusions from this research and suggestions for further research.

#### 6.1 Conclusion

Based on the results of data processing and research analysis, the following conclusions can be drawn:

1. The application of the principles of motion economy and the 5S methodology successfully enhanced the work system at CV Andespuma Anugrah Pratama. The total cycle time was reduced from 4205,91 seconds to 3053 seconds. The most significant reduction occurred at the back panel sewing station, where the cycle time decreased by 41%. Additional improvements were also observed at other workstations: the pattern making station experienced a 17% reduction, the pattern cutting station a 23% reduction, the middle section sewing station a 31% reduction, the front panel sewing station a 32% reduction, and the final sewing and packaging station a 10% reduction.
2. The performance of the CV Andespuma Anugrah Pratama backpack production line, in its initial state, showed an efficiency of 61,64%, with an actual cycle time of 825,5 seconds across six workstations. After the proposed improvements using the line balancing method, six alternatives were generated from three different methods. The Largest Candidate Rule (LCR) method produced two alternatives with efficiencies of 85,93% and 88,71%. The Kilbridge and Weston Method (KWM) resulted in two alternatives with efficiencies of 93,09% and 94,40%. The Ranked Positional Weights (RPW) method yielded two alternatives with efficiencies of 89,80% and 90,30%. The most effective solution was Alternative 2 from the KWM

method, which achieved the highest efficiency with five workstations and an actual cycle time of 646,80 seconds.

## 6.2 Suggestion

Suggestions for future research are as follows

1. Future research could include an analysis of the long term impact of applying the principles of motion economy and 5S on both worker productivity and job satisfaction.
2. Future studies could also explore other efficiency improvement methodologies, such as Lean Manufacturing or Total Productive Maintenance (TPM), to further enhance production performance.

