= 176 Pcs

Before JIT implementation the line target was 1912 Pcs and after JIT implementation the line target become 2088 pcs. Line target per shift increases by 176 Pcs.

4.3 Line efficiency calculation

Before JIT implementation-

$$\text{Line Efficiency per hour (\%)} = \frac{Total\ production \times SMV}{Total\ man\ power \times Working\ hour \times 60} \times 100$$
$$= \frac{146 \times 6.29}{25 \times 1 \times 60} \times 100$$
$$= 61.22\%$$

After JIT implementation-

$$\text{Line Efficiency per hour (\%)} = \frac{Total\ production \times SMV}{Total\ man\ power \times Working\ hour \times 60} \times 100$$
$$= \frac{160 \times 5.75}{25 \times 1 \times 60} \times 100$$
$$= 61.33\%$$

∴ Increased Line Efficiency per hour (%) = (61.33-61.22) %
= 0.11%

Before JIT implementation the Line efficiency per hour was 61.22% and after JIT implementation the line efficiency become 61.33 %. Line efficiency per hour increased by 0.11%.

4.4 Line performance calculation

Before JIT implementation-

$$\text{Line Performance per hour (\%)} = \frac{\text{Line Output} \times 100}{\text{Line Target}}$$
$$= \frac{146 \times 100}{239}$$
$$= 61.0878$$
$$\approx 61.09\%$$

After JIT implementation-

$$\text{Line Performance per hour (\%)} = \frac{\text{Line Output} \times 100}{\text{Line Target}}$$
$$= \frac{160 \times 100}{261}$$
$$= 61.3027$$
$$\approx 61.30\%$$

∴ Increased Line Performance per hour (%) = (61.30 – 61.09) %
= 0.21%

Before JIT implementation Line Performance was 61.09% and after JIT implementation Line Performance become 61.30%. The increased Line Performance per hour was 0.21%.

4.5 Column chart for comparison of production capacity

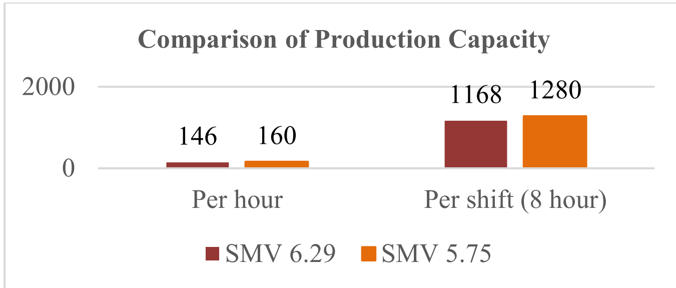

Figure 4.1: Production capacity before and after JIT implementation.

4.6 Column chart for comparison of line target

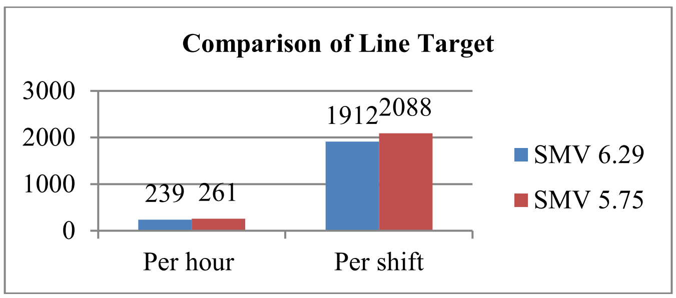

Figure 4.2: Line target before and after JIT implementation.

4.7 Column chart for comparison of line efficiency

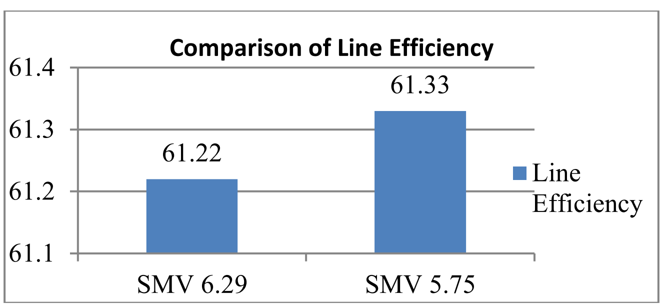

Figure 4.3: Line efficiency before and after JIT implementation.

4.8 Column chart for comparison of line performance

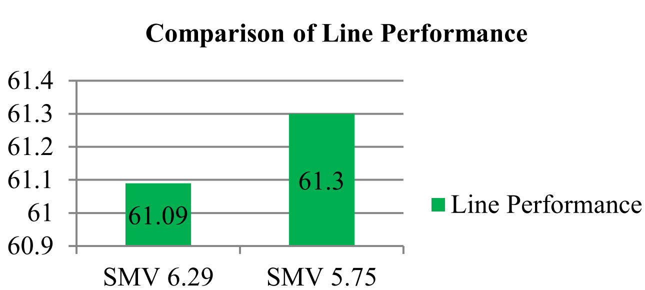

Figure 4.4: Line efficiency before and after JIT implementation.

5. Conclusion

The standard minute value (SMV) is a visualization tool and its goal is to identify, demonstrate and elimination of waste in the process. Before eliminating waste, we must be able to see it. SMV can serve as a starting point to help management, engineers, production associates, schedulers, suppliers, and customers, recognize waste and identify its causes. Before implementation of tools & techniques of JIT training were provided to the people specially supervisor and make them knowledgeable about different types of waste and how to identify waste also reduce waste. Operator also trained on kaizen how small change make work simple and improve visibility of off-standards and they were introduced to changing for better.
In current state assessment it was found that Production Capacity per shift (in pcs) is 1168, line efficiency 61.22% which shows huge opportunities for improvement in those areas. It has started with 5 pieces bundling system in sewing section and then following up the line regularly and capacity study from time to time. After implementation of team work, process integration, job sharing, multi machine operating and balancing the task, eliminating unnecessary activities, team has achieved 61.33%-line efficiency, Production capacity per shift (in pcs) 1280. Besides defects, WIP, transportation also reduced than previous traditional systems.
The study was done with a limited scope as there were limited time and restriction of permission from industrial authority during research work .As industry always go for profit, desired production line allocation were also quite difficult for collecting data. Future work may include super market pull between cuttings and sewing section .Also implementation of SMV and Kanban system to keep WIP at minimum level. The future work may include helper less zero defect line where each operator will be the quality at the source and creation of standard operating procedure (SOP) for each sections and for incentive policy also.

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