Efficiency of Six Sigma: North Vs. South

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# Executive Summary

Racer Industries owns over 500 small manufacturing facilities across the nation. For the past three years the South has been strictly implementing the Six Sigma principles in order to promote efficiency in the Southern area. The North, on the other hand, has loosely followed the guidelines of Six Sigma and sometimes not at all. By gathering random samples of data from 30 plants in the North and 30 plants in the South and using this data to analyze the efficiency comparison Six Sigma has had on each company.

 By analyzing the graphs and data below, the numbers make it simple to evaluate the difference of efficiency of the two areas of manufacturing. The graphs verify that the South is the most efficient. The South succeeds the North in labor efficiency, material efficiency, and total efficiency. Regarding labor efficiency, the South tops the North with 4.733 and the North received 3.930. In material efficiency the South received a score of 5.398 and the North received a meek 2.822. The South’s total efficiency numbers are 2.206 compared to the North’s lower numbers of 1.468.

 Therefore, the data provides logical backing for the South to be the more efficient of the two areas. Most importantly, this shows that Six Sigma is very effective at eliminating costs and providing a greater profit.

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# Introduction and Problem Statement

Six Sigma is a rigorous methodology that uses statistical analysis to measure and improve a company’s operational performance by identifying and eliminating defects. The main goal of Six Sigma is to increase profits by removing variability, defects, and waste that undermine the customer’s loyalty. The word Sigma is a statistical term that measures how far a given process deviates from perfection. The central idea behind Six Sigma is that if you can measure how many "defects" you have in a process, you can systematically figure out how to eliminate them and get as close to "zero defects" as possible. (Hoerl, 1997, para 1) Six Sigma is an innovation in a competitive economy however it is not a cure-all. (Six Sigma, So Yesterday, 2007, para 1)  Six Sigma was intended to drive an organizational transformation in business and it has done so much more than that. (Six Sigma. IQ, 2010, para 1) The Six Sigma movement has helped transform businesses into some of the world’s most successful companies. (Pande, 2000, para 1) When determining if the North or the South area of manufacturing plants is most effective we need to compare the total efficiency of both.

# Procedures

A random sample of data was taken while determining the efficiency of both plants. A sample of 30 was taken from the northern region and a sample of 30 was taken from the southern region. The North has not implemented Six Sigma as strictly and regularly as the South. By considering sales, labor cost, and materials cost it will determine the most efficient region of production.

# Findings

In Figure 1 the graph labeled below explicitly shows the labor efficiency of both plants. The South obviously has the advantage in efficiency of labor over the North. There is a 10% difference in the two manufacturing plants which is very drastic. The average for the North regarding labor efficiency is 3.930 and the South’s average is 4.7333. This in turn shows that the Six Sigma program is very effective in labor efficiency.

 Figure 2 shows the material efficiency of the North and South operations. There is an even greater difference in the percentages of material efficiency. The North’s averages for material efficiency are 2.822 and the South’s is 5.398. Again, the South succeeds the North in controllable management factors.

Lastly and most importantly, Figure 3 states the total efficiency of the North and South operations. The North’s average is 1.468 and the South’s prevails again at 2.206.

# Conclusion and Recommendations

 Even though both regions of operation are profitable, it would definitely be recommended to participate in the Six Sigma method of cost cutting to improve the North’s gains in the future. The South has had accumulated ample profits due to the success of Six Sigma and the data proves that it would be very beneficial to the North.

References

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# Appendix

See attached page.