Resource Usage Evaluation and Improvement for the Maintenance Department of La Casa del Veterano at Juana Diaz

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1 Introduction

La Casa del Veterano is a nursing home with a capacity of 240 residents dedicated to the caring of veteran soldiers and their families. For the nature of its business, the maintenance plays an important role in their accreditations and quality rating. There are 8 employees dedicated to the maintenance of 8 different areas. Each of these employees is assigned with specific tasks. The Maintenance Department Supervision believes that their resources are being underutilized. The following project concentrates in the evaluation of resource usage by applying Industrial Engineering techniques such as Work Sampling, Time Studies, and Simulation.

2 Problem Statement

The 8 maintenance employees work based on a plan of previously divided tasks. This plan was developed considering the full capacity of the nursing home and the standard process of maintenance. However, right now the nursing home is operating for 76% of its capacity. This means that employees dedicated to areas with less residents tend to have more free time. Also, when the project launched employees rotated between areas giving them less sense of responsibility and ownership of their work. Contemplating this issues the standard process of cleaning and dividing tasks was put into question.

3 Objectives

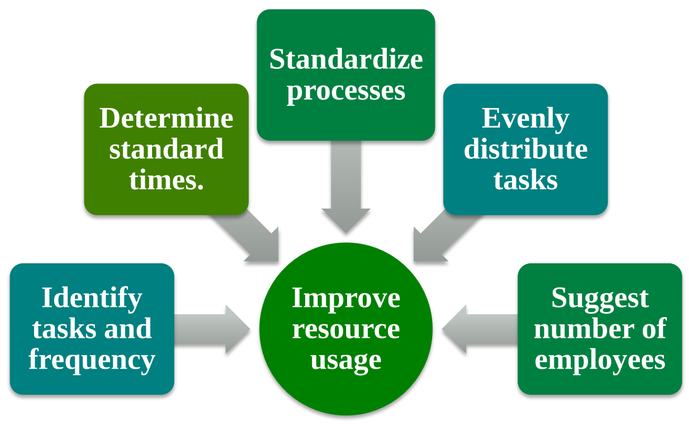

FIGURE 1. Main Goal and Objectives

4 Methodology

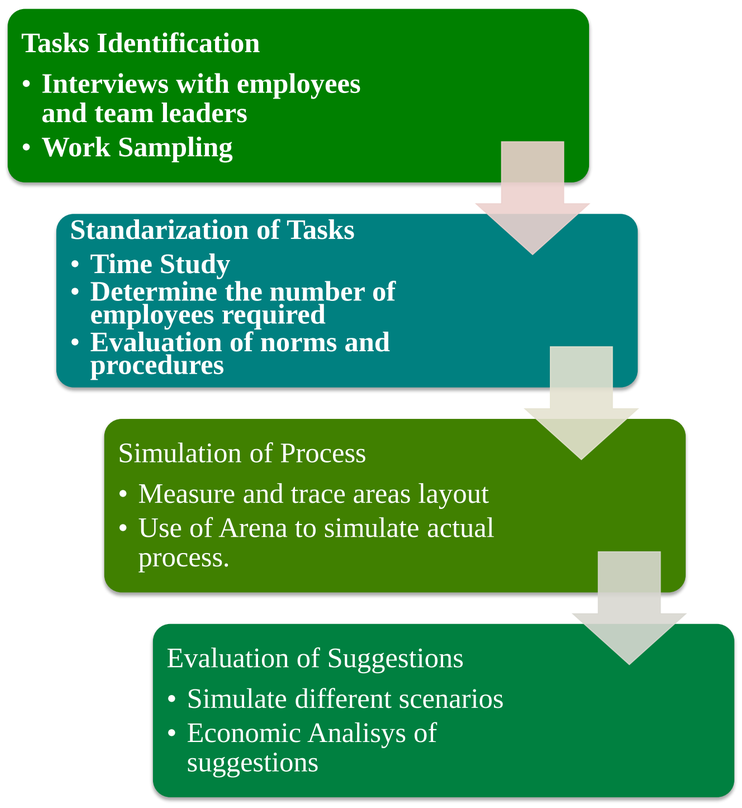

FIGURE 2. Methodology Implemented

5 Results

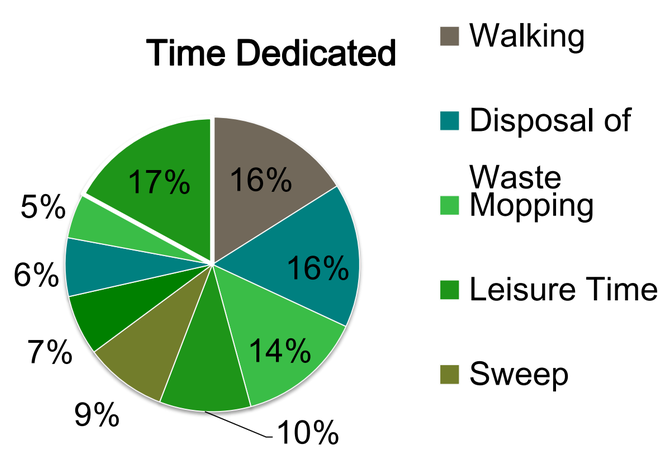

FIGURE 3. Proportion of Time Dedicated to Each Task

TABLE 1. Standard Time for Principal Tasks

Area	Standard Time (minutes)
Nursing Home Bedroom	17.4
Domiciliary Bedroom	15.4
Residents Bathroom	5.2
Waste Disposal	160.1

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Identifier                                  Average
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NR(Empleado1NursingHome1A)*100              96.428
NR(Empleado2NursingHome1B)*100              95.812
NR(Empleado3Domi1)*100                      72.976
NR(Empleado4Domi2)*100                      100.00
NR(Empleado5PrimerPiso)*100                 87.440
NR(Empleado6NursingHome2A)*100              94.562
NR(Empleado7NursingHome2B)*100              95.058
NR(Empleado8Basura)*100                     32.356
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FIGURE 4. Actual Resource Usage

6 Conclusion

- Permanently assigning employees to specific areas.
- Redistributing tasks between 7 employees.

TABLE 2. Economic Impact of Suggestion

Number of Employees	Hourly Wage	Hours/Month	Total Cost
8	$7.25	168	$9744
7	$7.25	168	$8526

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Identifier                                  Average
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NR(Empleado1NursingHome1A)*100              99.528
NR(Empleado2NursingHome1B)*100              98.892
NR(Empleado3Domi1)*100                      .00000
NR(Empleado4Domi2)*100                      100.00
NR(Empleado5PrimerPiso)*100                 96.035
NR(Empleado6NursingHome2A)*100              97.602
NR(Empleado7NursingHome2B)*100              98.114
NR(Empleado8Basura)*100                     97.804
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FIGURE 5. Recommended Resource Usage

R References

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