Optimization Models in Managerial and Allocation Problems in a Service Company

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Abstract: The Operation Research in conjunction with a combination of optimization models has the potential to solve several managerial problems in service companies. This project presents a solution based on optimization models, which will allow consulting companies to better plan and allocate its human resources to the different locations where the consulting project takes place. Using three optimization models, where their constraints are established by considering the consulting company's needs, many managerial and allocation problems of the company are solved. The initial model starts by calculating the average time needed by each of the techniques (Audits, Mystery Shopping and Films) usually employed by companies to measure customer service standards are met in financial agencies. This model was required to determine the number of people the consulting company should hire to complete the consulting project properly. Once the number of customer service evaluators is determined, a scheduling model is necessary to assign days-off to each person by considering the consulting company's policies. Finally, the last optimization model is designed with two objectives: first, to assign the techniques that each employee will be using in a given work day; and second, to minimize the distance that each employee has to travel in that given work day. As a result of the study, the combination of these three optimization models helped a consulting company to better plan projects related to measuring customer service levels. Also, there was a reduction of operating costs, an increase in productivity and quality, better organization, and better scheduling. This study led to time saving, a positive work environment and a better corporate image.

Keywords: Allocation Models, Mystery Shopping, Financial Institution, Customer Service