

**ABSTRACT**

The study entitled “Replacement Policy for the Parts of Photocopier using Integer Programming” was conducted to review the maintenance and repairs of the five photocopiers owned by a copy center located at Sampaloc, Manila.

The objectives of the study are the following:

1. To determine the life of each part replaced and compare it with the actual replacement date.
2. To identify system/practice in the maintenance of the photocopier.
3. To have an assessment of operations in consideration of the control and maintenance system of the replacement of parts relative to profitability.

Two models were formulated using integer programming to assess the operation of the copy center. The 1st model was used to minimize cost in the maintenance of copier parts. The second model was formulated to utilize the maximum life of particular parts.

Based on the results of the study, it was noted that the company did not pay too much attention on the factors like age of the machine and cost of procurement as well as maintenance.



It was evident that specific parts had to be replaced on time so as not to put at stake the cost efficiency and budget of the company.

Based on the presentation and analysis of data and the summary of findings highlighted, the following recommendations are suggested:

1. Assign a number for each photocopier and provide list of parts for each photocopier for easy monitoring of repair and maintenance and future replacement.
2. Provide record of replacement schedule for every machine for accurate analysis and computation of cost.
3. Apply same study in the company that uses plotter or other huge printing machines which yield high profit than copy center.
4. Make this as reference for other studies that linear programming can be applied.