RECOMENDATIONS FOR MAKING A PARETO DIAGRAM

1. As you already know, the Pareto diagram classifies problems according to categories or factors

of interest; for example, by type of defect or complaint, product model, size of the piece, type of machine, age of the worker, production shift, type of customer, type of accident, supplier, working methods or operation. A diagram is made for each classification.

2. The left vertical axis must represent the units of measurement that provide a clear idea of the contribution of each category to the global problem. In this way, if the severity or cost of each defect or category is very different, then the analysis must be done on the result of multiplying the frequency by the corresponding severity or unit cost. For example, in a company six different types of defects were found, which have occurred with the following frequency: A (12%), B (18%), C (30%), D (11%), E (19%) and F (10%). However, the unit cost to repair each defect is very different and is given by: A = 3, B = 6, C = 2, D = 3, E = 4 and F = 7.

As we can see, C is the defect that occurs most frequently, and has a low unit cost of repair. In contrast, defect F is the one with the highest unit cost, but its frequency of occurrence is very low. That is why the Pareto analysis must start from the multiplication of the frequency by the cost, in order to obtain the global impact of each defect in this way:

$A \rightarrow 36$; $B \rightarrow 108$; $C \rightarrow 60$; $D \rightarrow 33$; $E \rightarrow 76$; $F \rightarrow 70$

After multiplication, we can see that the defect with the greatest impact is B; and, therefore, this should be the focus of the improvement project.

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3. During an analysis, the first thing is to do a Pareto of first-level problems and later when the dominant problem is found, as many cause or second-level Paretos are made as necessary. It is recommended not to go to the third level until all the second level options (factors of interest) have been exhausted.

4. A quick criterion to know if the first bar or category is significantly more important than the others, it is not that this represents 80% of the total, but that it exceeds or predominates clearly on the rest of the bars.

5. In the event that a Pareto chart graph has a flat appearance or a drop Slow ladder means you need to re-analyze the data or problem and your ranking strategy. In these cases, it is necessary to see the Pareto from different perspectives, using creativity and classifying the problem or the data in different ways, until locating an important component. For example, observe if some of the categories are very similar, so that they could be classified into one.

6. The right vertical axis represents a scale in percentages from 0 to 100, in which the importance of each category can be evaluated with respect to the others, but in percentage terms; meanwhile, the cumulative line represents the cumulative percentages of the categories.

7. In order to avoid the existence of a large number of categories that cause a dispersion of the phenomenon, the categories that have little importance can be grouped into one and it is called "Others", although it is not recommended that this represent a percentage of the highest. If this happens, the classification should be reviewed and alternatives evaluated.

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Some additional advantages of the Pareto diagram are the following:

- The Pareto diagram, when expressing the importance of a problem in graphic terms, allows communication and shows us what the main flaw is, that is why it is useful to motivate the cooperation of all those involved, since just by observing it any person can see what the main problems are.

- It is more important to focus the energies on the vital problem and go to the root of its causes than to apply the efforts in all of them. Also, in general, it is easier to cut a high bar in half than a girl to zero.

- It eliminates the imprecision in the magnitude of the problems and gives us an objective and expressible measurement in graphic terms, therefore, it serves to objectively evaluate with the same diagram, the improvements achieved with a Six Sigma improvement project, comparing the situation before and after the project.

Referencia

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