

The process improvement plan research paper sample

[Sociology](#), [Population](#)



The process improvement plan:

Statistical process control procedures help someone monitor the process behavior. The most successful statistical process control was the control chart. This helps a person record some data and lets him or her see when an unusual event occurs. This is for instance very high or low observation. They try to differentiate between the two types of the process variation. The common cause variation, which is always intrinsic to the process, as well as the special cause variation, which arises from the external sources and the process, is out of the statistical control. Various tests can help determine when an out of control event has happened. However, as more tests are laid down the probability of a false notification arises (Oakland 2003).

In the management of a business control limits are very crucial in the determination of the progress of the business. They can be defined as the parallel lines that are often separated by an average line that are used in a control chart to indicate the lower as well as the upper limits. The major purpose of this is to judge the significance of variations in the plotted data. This is pertinent in the decision making of the managers in every business. Control limits are usually calculated on the past presentation. The limits act as the voice that tells you the variability that the process has produced in the past. In addition to that, they intend to recognize where there was a sufficient change in the past to justify a change of the process. In real sense, it is possible to have a process that is incapable of meeting a certain specification while remaining in the statistical control. In this situation, a product is predictably made out of spec.

Moreover, it can be clearly shown that the action of adjusting a process when

it is in control brings out increased variability. If a process is not capable and the same time in control, then adjusting it if it goes out of spec will definitely increase the variability over time. This makes it harder to achieve the laid specification. Specifications are the promises made to the customer, of what the supplier will provide and should always be based on the total system losses. This means that the limits should be well calculated.

The quality of a process is monitored by a control chart. Two horizontal lines are drawn on the chart to represent the lower as well as the upper limits.

This is then followed by the analysis as well as the examination of data. If the data points in the chart fall outside these two lines that indicates that there is likely to be a problem statistically with the process in question. Usually, these data are placed three standard deviation from the mean. This concludes that there is a very high probability that a data point will be within the limits. In the actual calculation of the control limits, a person needs get to first the mean as well as the standard deviation of the data at hand. This will then help him or her to attain the upper as well as the lower control limits.

The process performance each week was accompanied by seasonal factors, which had effects. At first, there was financial factor. In order to attain some of the data, cash was required. This includes the retrieving of some documents containing the data. Moreover, there were some other miscellaneous expenses incurred in the process. In addition to that, conducting of the process is a process. This is because of some circumstances, which are unavoidable. These include being late because of a severe traffic jam. Furthermore, the consumers might be unresponsive. This

makes it hard to establish their needs as well as their complaints (Wysocki 2004).

A confidence interval/ intermission can be explained as the interval where a measurement falls corresponding to a given probability. In most cases, the confidence interval of interest is regularly put in place around the mean. It is a type of interval estimate, which is used to indicate the reliability of an estimate. In simple terms, confidence interval are made across many different data analyses as well as different experiments. In such intervals the proportion that has the true value parameter will automatically match the confidence level.

Generally, confidence level possesses range of values that act as worthy estimates of the unknown parameter. On the other hand, none of the values covers the value of the parameter. The level of confidence of the interval would clearly show the probability that the confidence range captures given a distribution of samples. This does not describe any single sample. This value is usually represented by percentage. For instance, by saying 99% confident that the true value of the parameter is in the confidence interval, it is expressed that 99% of the observed confidence intervals holds to the true value of the parameter. After taking a sample, the population parameter is either in the interval made or not. Chances do not exist. The researcher at his own desires usually sets the level of confidence and it is not determined by data. If there was, a corresponding hypothesis tested. Interval estimates can be contrasted by the point estimates. This is a single value given as the estimate of a population parameter that is of interest i. e. average of a certain amount of quantity, an interval estimate states in its place, a range

within which the limit is estimated to fall in.

For instance, a confidence interval can be used to describe how reliable survey results are. From the data, one may calculate the 95% confidence interval, and in this case might be 36% to 44%. One of the major factors that determine the length of confidence interval is the sample size used in the estimation procedure. Confidence intervals well relate with other statistical topics. For instance, it is related to the statistical significance testing. If for some estimated parameter one requires to assess the null hypothesis alongside the alternate, then this can be done by determining whether the confidence interval contains the null value. In addition to that, confidence regions try to generalize the confidence interval notion to deal with multiple quantities (Miller 2009). The regions indicate not only where the extent of likelihood of errors in sampling but can detect if it is the case in that if the estimate for quantity is not reliable then, the others are likely to be not reliable as well.

References:

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