

Probability concepts and applications

[Science](#), [Mathematics](#)



Here Here Here Here Probability Concepts and Applications Question

Responses At various times, virtually all businesses (and other institutions) require the collection and evaluation of data regarding their endeavors. The mathematical analysis of such information can provide valuable guidance for future organizational decisions. However, all forms of data collection include the issue of sampling error. The sampling error problem occurs as a result of the inability to sample every member of a given population. Sampling error is a representation of the influence of chance or probability upon the data.

Specifically, it is associated with the probability of the measured event occurring for the collection of possible reasons other than those under observation. In order to account for sampling error, it is helpful for a researcher to have a solid understanding of the chance involved in their measurements. For example, the evaluation of purchased firearm quality within the military benefit from the knowledge of the possibility associated with the decline in firearm quality that may occur due to chance. There are also different types of probability that account for varying conditions.

Independent probability refers to an event that occurs due to chance and not due to another observed event. Alternatively, conditional probability occurs when the chance of one event occurring is related to the probability of another event. In this case, the probability values become entangled and cannot be accurately observed without taking both events into account. An example of a conditional probability relationship in military quality control operations would be when the probability of equipment being faulty by chance varies with the probability of operator incompetence. 2. The probabilities of the different values of a factor are often varied. To use a real-

world example in line with the previous ones, there may be a similar chance that we observe a large probability of a firearm condition score falling in any area near the expected value, while the probability may be low that a score will be extremely poor or excellent. The listing of the probabilities for all possible values of a factor is called a probability distribution. A normal distribution would be similar to the one discussed above, with many scores near a central value, and lessening as the score moves away from the mean. Many events have a normal distribution, which looks like a bell when score probability values are graphed against the score values (hence the moniker “bell curve”). A normal distribution would be predicted for firearm quality, as many extreme values (low or high) would not be expected. A similar shape can be helpful in evaluating aspects of company size dynamics (Gallegati and Palestini 69). However, not all circumstances produce a normal probability distribution. For example, a graph of the probability distribution for walking abilities would likely yield a pattern that is skewed to the right (extremely good). The understanding of a normal distribution is essential for the execution and evaluation of business projects. Various distribution types are used in financial modeling procedures, which are important in the projection and evaluation of business projects. Understanding price models can prevent misguided projects and related lost resources. If we expected a positively skewed distribution of firearm quality scores, then we would likely make incorrect judgments about the value of these assets. In this manner, probability distributions assist in optimization of resource assignment (Ching-Chung 159). 3. The quantitative analysis approach utilizes several steps as a guide to the investigation of numerical variables (Suto and Greatorex 73)

including social variables like discrimination (Hlasny 85). The first step is to clearly define the problem. For our example, it could be possible that several operators are complaining about the quality of their relatively new firearms. This information identifies the problem as a potential quality defect in our equipment. Following identification of the issue, we would need to develop a model for our study. Ideally, we could compare the quality of the guns to that of similarly aged guns from another order. Next we would acquire quantified data about weapon quality (recoil by distance for example) from both groups of firearms. With the data collected, we would need to develop a solution to the potential quality problem. This would most likely involve contacting the distributors of our equipment and requesting replacement. Acquiring a newer shipment of firearms to our site and testing their quality against the suspect group could test this solution. The results of both experiments would then be analyzed for significant statistical differences between group quality scores. If our weapons prove to be of lower quality than those of a different site and of a new shipment, we would implement the proposed solution of asking for replacement. To minimize shipping costs the newer equipment that was tested could fulfill this request.

Works Cited
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