

Editorial comments:

The author does not pretend to have new results in this paper and does not explain clearly the aim of his paper. The introduction is extremely short.

Author's Feedback:

Thank you for your suggestion. Now, that I read again this article, I agree with you that I wasn't very explicitly about what I really wanted to point on, in the introduction of my article. So, I did another introduction as it follows:

The fundamental limit theorems of the probability theory can be classified into two groups. A group dealt with the limit laws problems of the sums of sequences of random variables in the sense of convergence almost sure of such sequences. The Central Limit Problem development for independent terms can be divided into three periods. The first refers to the case of Bernoulli with corresponding to limit theorems of Bernoulli, DeMoivre and Poisson. The first two theorems gave birth to concepts, from which the classic problem of the Central Limit Law of Large Numbers and normal convergence.

The development is to simplify the existing demonstrations, modeling and consolidation; determining the general concepts underlying their results and expanding their fields. Analysis of this growth will put into relief the role and the interconnections of fundamental limit theorems.

First, the Italian mathematician G. Cardano (1501-1576) affirmed, without demonstrations, that the precision of an empirical statistics tends to improve with the sample sizes. This was formalized then as a law of large numbers. Later on, another great mathematician, J. Bernoulli (1654-1705) established in his work "Ars conjectandi" published in 1713, that the new mathematical theory it would be the foundation of the study of mass phenomenon. It took him more than 20 years to develop a rigorous demonstration of this, which was published in opera that we cited earlier. By "theorem of large numbers" or "law of large numbers" this is a direct connection between frequency and probability, after a large number of samples. This theorem is the foundation of mathematical statistics. Obviously, probability theory and statistics are in a continuous development. Thus, it is justified the application of probability theory in so many areas.

The purpose of this paper is to expose the six theorems that make up the weak form of the law of large numbers. Here, we detail the present theorems demonstrations, then we make a multicriterial analysis thereof. From the discussions with researchers in other domains than statistics or probability, the author noticed that they encountered difficulties in applying the theorems in their fields of research, so using multicriterial analysis, we make a ranking to urge the one who applied, from which point of view to take one or the other. As we have mentioned, the applicability of probability theory being so ample in so many domains; we come to be helpful to a nonmatematician to help him making a decision as best and fastest. We emphasize that this multicriterial analysis applied in this paper is an own contribution.