DETERMINING THE PROBABILITIES OF THE OUTCOMES OF LOTTO GAME USING HYPERGEOMETRIC DISTRIBUTION

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Abstract

The probability density function (PDF) of the hypergeometric is used to model the probability of outcomes of lotto game given some selected predetermined scenarios (K) from ($n = 5$) samples at the instances of six sample scenarios $x = 0, 1, 2, 3, 4, 5$. This is exactly mimicking the Nigerian Premier Lotto game where interested players are expected to choose five random numbers from 1 to 90. That 'A' win implies that at least three of the randomly chosen 5 numbers are drawn from the national lotto draw often televised to the players. In this paper, different predetermined scenarios are defined and

the probability is computed using the probability density function of the hypergeometric distribution. The data are results from 31625 games played on premier lotto in a span of 3 years. The data are for morning, afternoon, night, in Enugu center, regional and national premier lotto results during the period. The chi-square test of goodness of fit shows that the premier lotto is random, fair, and validates the results of the adoption of the PDF of hypergeometric distribution. Players of lotto games are advised to be aware of the slim chances of winning and play reasonably and sensibly.

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