



FACULTY OF COMMERCE & BUSINESS ADMINISTRATION

DEPT. OF MATH., INSURANCE & APPLIED STATISTICS

THE FIRST CONFERENCE ON "STATISTICS AND ITS COMMERCIAL & ECONOMICAL APPLICATIONS"

Exact And Approximate Markov Binomial Probability Distributions

Afaf El-Dash

Dept. of Math. & Statist.
Faculty of Commerce,
Helwan University

Amel Fouad

Dept. of Statist., Faculty of
Economic & Political Science,
Cairo University

Abstract

This paper is considered an extension of Edward's paper 1960 and Gani's paper 1982. Firstly, the exact probability distribution of the Markov Binomial variable (X) is derived when the number of trials equals N , $N= 2,3,4$. Secondly, the approximate probability distribution of the random variable X is derived also when $N \rightarrow \infty$, $p \rightarrow 0$, $Np \rightarrow \lambda$

Key words: Markov process, probability generating function, transition matrix, Leibnitz's rule, eigen roots, eigenvector, compound Poisson.

1- Introduction