International J.of Multidispl.Research & Advcs. in Engg.(IJMRAE),
ISSN 0975-7074, Vol. 4, No. I (January 2012), pp. 177-184

A STOCHASTIC MODEL FOR A TWO GRADE MANPOWER SYSTEM WITH SUM OF THRESHOLDS OF TWO GRADES FOR THE LOSS OF MANPOWER

K. P. UMA[1] AND A. SRINIVASAN[2]
[1]Department of Science & Humanities ,
Hindusthan College of Engineering and Technology,
Coimbatore, Tamilnadu, India
[2]P. G & Research Department of Mathematics,
Bishop Heber College, Trichy-17, Tamilnadu, India

Abstract

In this chapter, a two grade manpower system with bivariate policy of recruitment wherein depletion of manpower occurs at every decision epoch is analyzed. There is an associated loss of manpower if a person quits. As the exit if personnel is unpredictable, a recruitment policy involving of the sum of the thresholds of two grades is suggested to enable the organization to plan its decision on recruitment. Based on shock model approach and cumulative damage process, a mathematical model is constructed and a performance measures namely the mean and variance of time to recruitment are obtained. The analytical results are numerically illustrated and the influence of nodal parameters on the performance measures are studied and relevant conclusions are presented.

Keywords : Manpower planning, Shock models, Univariate recruitment policy, Mean and Variance of time to recruitment.

2000 Mathematics Subject Classification: Primary 90B70, Secondary: 91B40, 91D35.