

**A STOCHASTIC MODEL FOR THE EXPECTED TIME TO  
RECRUITMENT USING BIVARIATE RECRUITMENT POLICY  
INVOLVING TWO THRESHOLDS ASSOCIATED WITH  
CORRELATED INTER-DECISION TIMES**

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**Abstract**

In this paper, an organization subjected to random exit of personnel due to policy decisions taken by the organization is considered. There is an associated loss of manpower if a person quits. As the exit of personnel is unpredictable, a new recruitment policy involving two thresholds - one is optional and the other one mandatory is suggested to enable the organization to plan its decision on recruitment. Based on shock model approach, a mathematical model is constructed using an appropriate bivariate policy of recruitment. The analytical expression for the mean and variance of the time to recruitment are obtained when i) the loss of manhours process forms a sequence of independent and identically distributed continuous random variables ii) the inter-decision times are exchangeable constantly correlated exponential random variables and iii) the optional threshold level as well as the mandatory threshold level are exponential random variables. The results are numerically illustrated and analyzed by assuming specific distributions.

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Key Words : *Manpower planning, Shock models, Bivariate recruitment policy, Mean and variance of the time to recruitment.*

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