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STOCHASTIC MODEL FOR A SINGLE GRADE SYSTEM WITH THREE COMPONENTS OF THRESHOLD AND CORRELATED INTER-DECISION TIMES

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ABSTRACT

It is a common phenomenon that some personnel leave an organization after completing a certain period of services to that organization voluntarily or involuntarily due to death, retirement or termination. It usually happens that whenever the policy decisions regarding promotion and target of work or sales to be achieved are revised, then, there will be exit of personnel, which in other words called the attrition or wastage. In any organization like marketing, industrial, software, the depletion of manpower due to policy decisions is quite common. This results in manpower attrition and then recruitment becomes necessary. Frequent recruitment is not advisable due to the cost of the same. Hence recruitment is postponed till a point called the breakdown point of total depletion beyond which the normal activities cannot be continued due to shortage of manpower. This level of allowable manpower attrition is called threshold. In this paper a Stochastic model to determine expected time to recruitment and variance of time to recruitment with three sources of depletion of manpower attrition under correlated inter arrival times have been derived. The Stochastic model discussed in the paper is not only applicable to industry as a whole but also in a wider context of other applicable areas.

KEYWORDS: Attrition, Threshold, Depletion of Manpower, Correlated, Inter Arrival Times

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