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Optimization of Personnel Selection Problems via Unconstrained Geometric Programming

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Abstract : From a business perspective, cost and profit are two key factors for businesses. The intent of most businesses is to minimize the cost to maximize or equalize the profit, so as to provide the greatest benefit to itself. However, the physical system is very complicated because of technological constructions, rapid increase of competitive environments and similar factors. In such a system it is not easy to maximize profits or to minimize costs. Businesses must decide on the competence and competence of the personnel to be recruited, taking into consideration many criteria in selecting personnel. There are many criteria to determine the competence and competence of a staff member. Factors such as the level of education, experience, psychological and sociological position, and human relationships that exist in the field are just some of the important factors in selecting a staff for a firm. Personnel selection is a very important and costly process in terms of businesses in today's competitive market. Although there are many mathematical methods developed for the selection of personnel, unfortunately the use of these mathematical methods is rarely encountered in real life. In this study, unlike other methods, an exponential programming model was established based on the possibilities of failing in case the selected personnel was started to work. With the necessary transformations, the problem has been transformed into unconstrained Geometrical Programming problem and personnel selection problem is approached with geometric programming technique. Personnel selection scenarios for a classroom were established with the help of normal distribution and optimum solutions were obtained. In the most appropriate solutions, the personnel selection process for the classroom has been achieved with minimum cost.

Keywords : geometric programming, personnel selection, non-linear programming, operations research
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