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FORMULATION OF MULTIOBJECTIVE FUNCTIONS TO SOLVE LINEAR FRACTIONAL PROGRAMMING PROBLEM

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Formulation of Multiobjective Functions to Solve Linear Fractional Programming Problem

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Abstract – This paper deals with the formulation of multi objective functions with linear fractional criteria. The complexity of these evils is the non-linear restraints of the mathematical programming models that have to be solved. When there manage to survive solutions satisfying all target values, the difficulty is easy to solve by solving a linear difficulty.

Keywords: Multi Objective Functions, Fractional Programming

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INTRODUCTION

Fractional programming has paying attention the concentration of many researchers in the history. The main cause for interest in fractional programming stems from the fact that programming models might better fit the real problems if we think optimization of ratio flanked by the physical and / or economic quantities. Literature survey reveals wide applications of fractional programming in dissimilar areas ranging from engineering to economics.

REVIEW OF LITERATURE:

Formulation of multi objective functions:

The same loom taken by sulaiman and Gulnar (Sulaiman & Sadiq, 2006) for multi objective functions are filled at this time to for imitates the constrained goal functions given in equation (2.1). Presume we obtained a single value equivalent to each of goal functions of it being optimized individually subject to constraints (2.2) and (2.3) as follows:

Max Z1 = Φ1

Max Z2 = Φ2

Max Zr = Φr

Min Zr+1 = Φr+1

Min Zs = Φs

Where

Φi;i=1,2,...,s the decision variable may not of necessity be common to all optimal solutions in the presence of divergences in the middle of goals. But the ordinary set of conclusion variable flanked by object functions is necessary in order to select the best compromise solution. We can determine the common set of decision variable from the following combined goal function.

Which formulate the MOLPP given in (2.1) as:

$$\text{Max } Z = \sum_{K=1}^{r} Zk \,/|\Phi| \qquad - \sum_{K=1}^{s} Zk \,/!\Phi! \qquad (2.5)$$

For all 0 $\neq$ Zk;k=1,2,...,s.

Subject to the same restraint (2.2), (2.3); and the optimum value of functions Φk$\in$R\{0}; where R is the set of real numbers. Now we can solve this MOLPP by Chardra Sen approach (CA).

The thought of Multi-Objective Programming (MOP), on the other hand, has turn into well-liked among researchers throughout the past few years due to the information that many single objective optimization methods are not able to help practitioners reach attractive solutions [1-3]. The idea of MOP collective by means of fractional programming is an attractive region of research which incorporates many manufacture planning applications [4-5]. There are a small number of looms have been reported for solving the multiple objective linear fractional programming (MOLFP) problem [6-7]. Multi-objective linear programming is a conservatory of linear programming and it was introduced by Chaudhuri and De [8]. The difficulty was also careful and obtainable a simplex–based answer process to find all weakly well-organized vertices of the increased feasible region [16]. It was though showed that the process suggested by Kormbluth and Steuer for computing the numbers to discover rupture points may not work all the time and a reliable method for computing these numbers was planned by Benson [10]. The purpose space for multiple objectives linear fractional programming with equivalent denominators was given by Tantawy [11], using the thought of duality. The loom enables the conversion of a single intention linear fractional programming difficulty into a linear programming problem with partial fractions technique with the thought of duality.

FUZZY PROGRAMMING FORMULATION OF MOLFPP:

To put together the fuzzy programming model of a MOLFPP, the goal functions) x (Ft (t = 1, 2… p) would be distorted into fuzzy goals by introducing a vague objective level to each of the goal. The optimal solution of each goal function) x (Ft (t = 1, 2… p) when intended in isolation would be considered as the best solution and the linked goal value can be considered as the aspiration level of the corresponding fuzzy goal.

CONCLUSION:

There are several points for prospect investigate in the area of (FMOILFP), in our view, to be deliberate like –

An algorithm is required for solving multi objective integer linear fractional programming problem with fuzzy parameters.

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