

**Paper Title**

**First/corrsponding Author\*1, Second author 2, Third Author3**

**1** First Author affiliation including the country

**2** Second Author affiliation including the country

**3** Third Author affiliation including the ountry

Emails: first author email; second author email; third author email

**Abstract**

Mathematical programming can express competency concepts in a well-defined mathematical model for a particular …

**Keywords:** Keywork one; Keywork two; Keywork three; Keyword four; ….

1. **Introduction**

For the header and the footer, just change the journal name and the abbreviation, then leave all other information for our production team at the ASPG editorial office to be updated after your paper acceptance.

This article gives linear model, which is the direct simplex method using neutrosophic logic, the logic that is the new vision of modelling and is designed to effectively address the uncertainties inherent in the real world founded by the Romanian mathematician Florentine Smarandache [1, 2]. In addition to that, Ahmed A. Salama presented the theory of neutrosophic classical categories as a generalization of the theory of classical categories [12,20], also, he developed, introduced, and formulated new concepts in the various disciplinary of mathematics, statistics, computer science by neutrosophic theory [17,18,19,22,28].

1. **Related Work**

It is well known that to get an optimal solution for any linear programming problem using the direct simplex algorithm should be processed to be in standard form, the simplex method for solving an LP problem requires the problem to be expressed in the standard form. But not all LP problems appear in the standard form. In many cases, some of the constraints are expressed as inequalities rather than equations;

**3. Mathematical equations, subsections, tables, and figures**

Using simplex method, find the optimal solution for the following linear programming problem (1):

$$\max\_{}Z=c\_{1N}x\_{1}+c\_{2N}x\_{2}+…+c\_{nN}x\_{n}$$

$$subject to \left\{\begin{array}{c}a\_{11}x\_{1}+a\_{12}x\_{2}+…+a\_{1n}x\_{n}\leq b\_{1N}\\a\_{21}x\_{1}+a\_{22}x\_{2}+…+a\_{2n}x\_{n}\leq b\_{2N}\\\begin{matrix}a\_{31}x\_{1}+a\_{32}x\_{2}+…+a\_{3n}x\_{n}\leq b\_{3N}\\\begin{matrix}.\\.\\.\end{matrix}\\a\_{m1}x\_{1}+a\_{m2}x\_{2}+…+a\_{mn}x\_{n}\leq b\_{mN}\end{matrix} (1)\end{array}\right.$$

With the non-negativity conditions $x\_{1},x\_{2},…,x\_{n}\geq 0$.

It is worthy to mention that the coefficients subscribed by the index $N$ are of neutrosophic values.

The objective function coefficients $c\_{1N},c\_{2N},…,c\_{nN}$ have neutrosophic meaning are intervals of possible values:

That is, $c\_{jN}=\left[λ\_{j1},λ\_{j2}\right]$, where $λ\_{j1},λ\_{j2}$ are the upper and the lower bounds of the objective variables $x\_{j}$ respectively, $j=1,2,…,n$. Also, we have the values of the right-hand side of the inequality constraints $b\_{1N},b\_{2N},…,b\_{mN}$ are regarded as neutrosophic interval values:

$b\_{iN}=\left[μ\_{i1},μ\_{i2}\right]$, here, $μ\_{i1},μ\_{i2}$are the upper and the lower bounds of the constraint $i=1,2,…,m$.

Table 1: the available quantities of the raw materials, and the profit returned from one unit of both products in the Classical Context

|  |  |  |
| --- | --- | --- |
| Available quantities of the raw materials | Required quantity per unit | Products Raw Materials  |
| $$B$$ | $$A$$ |
|  |  |  | $$F\_{1}$$ |
|  |  |  | $$F\_{2}$$ |
|  |  |  | $$F\_{3}$$ |
|  |  |  | $$F\_{4}$$ |
|  |  |  | Profit Returned per unit |

Required:

Finding the optimal production plan that makes the company's profit from the producers $A, B$ as large as possible.

We symbolize the quantities produced from the product $A$ with the symbol $x\_{1}$, and from the product $B$ with the symbol $x\_{2}$ , after building the appropriate mathematical model and solving it, we conclude that $x\_{1}=5, x\_{2}=3$ , and hence the maximum profit $Z^{\*}=50$ of monetary unit.

1. **Subsection A**

A company produces two types of products $A, B$ using four raw materials $F\_{1},F\_{2},F\_{3}, F\_{4}$. The quantities needed from each of these materials to produce one unit of each of the two producers $A, B$, the available quantities of the raw materials, and the profit returned from one unit of both products are shown in table 2.

Table 2: the available quantities of the raw materials, and the profit returned from one unit of both products in the Neutrosophic Context

|  |  |  |
| --- | --- | --- |
| Available quantities of the raw materials | Required quantity per unit | Products Raw Materials  |
| $$B$$ | $$A$$ |
| $$[14,20]$$ | $$3$$ | $$2$$ | $$F\_{1}$$ |
| $$[10,16]$$ | $$1$$ | $$2$$ | $$F\_{2}$$ |
| $$[12,18]$$ | $$3$$ | $$0$$ | $$F\_{3}$$ |
| $$[15,21]$$ | $$0$$ | $$3$$ | $$F\_{4}$$ |
|  | $$[3,6]$$ | $$[5,8]$$ | Profit Returned per unit |

For the figures, please use the following format



Figure 1: ASPG logo

**6. Conclusion**

Conclusion should be written in this style and it is highly recommended to add future work direction for your research.

**Funding:** “This research received no external funding”

**Conflicts of Interest:** “The authors declare no conflict of interest.”

**References**

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