The idea is to develop the model which can aggregate the expertise of all decision makers in form of linguistic variables evaluations of a set of experts on certain prefixed criteria. Let $X$ be a set of cardinality $g+1$.

Let $S = \{s_1, s_2, ..., s_g\}$ be the linguistic term set of cardinality $g$.

Let $\sigma \in [0, g]$ be the result of the aggregation operation then, 2 tuple equivalent to $\sigma$ is given by:

$$\Delta \{\sigma, 1\} = S \triangle \{4.5, 0\} \rightarrow \{\sigma, 1\}$$

Numerical equivalent to $(a, n)$ is given by:

$$\Delta^1 \rightarrow S \triangle \{4.5, 0\} \rightarrow \{\sigma, 1\}$$

The interval 2 tuple that expresses the linguistic information to the lower bound $(\sigma, k)$, is given by:

$$\Delta^k \rightarrow S \triangle \{4.5, 0\} \rightarrow \{\sigma, k\}$$

The interval 2 tuple that expresses the linguistic information to the upper bound $(\sigma, k)$, is given by:

$$\Delta^k \rightarrow S \triangle \{4.5, 0\} \rightarrow \{\sigma, k\}$$

**Comparison operator**

Let $X_1, X_2$ be the lower and upper bounds respectively. We use the following operators for comparing linguistic terms:

- $X_1 \leq X_2$ if $X_1$ is more similar to $X_2$ than $X_2$ is to $X_1$.
- $X_1 < X_2$ if $X_1$ is strictly more similar to $X_2$ than $X_2$ is to $X_1$.
- $X_1 > X_2$ if $X_2$ is more similar to $X_1$ than $X_1$ is to $X_2$.
- $X_1 \geq X_2$ if $X_1$ is more similar to $X_2$ than $X_2$ is to $X_1$.

**Arithmetic mean**

Let $X_1, X_2, ..., X_{n-1}, X_n$ be the linguistic terms. Then, the arithmetic mean can be defined as:

$$\mu = \frac{1}{n} \sum_{i=1}^{n} X_i$$

**TOPSIS**

Let $X = \{X_1, X_2, ..., X_n\}$ be a set of alternatives. Then, the TOPSIS method is used to develop a model on the fuzzy linguistic data. It is an extension of pairwise comparisons and is commonly used in diverse ways ranging from military to human studies.