

## Taking decision with the help of black's permutation for imprecise – ordinal data

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### Abstract

In our days one of the basic problems that decision makers face is to take decisions with imprecise data (fuzzy or ordinal data). In this paper we will deal specifically with ordinal data and show how decision makers can take precise decisions in the case of an observer group who have variable preferences among a set of possible state permutations. Our research meets a wide range of applications, since the set of permutations can represent such possible states as political parties, product quality or price etc.

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### 1. Introduction

The ordinal data can be represented in the forms listed below:

- In a numerical scale ( $1 \dots 10$  or  $1 \dots 100$ ).
- In a qualitative scale (excellent, very good, good, mediocre, bad).
- In a special scale (it depends on the characteristics of the object under evaluation, e.g. tall, short, heavy, tiny).

In the above categories the only allowed relationships are 'less than or equal' ( $\leq$ ), and 'bigger than or equal' ( $\geq$ ). The problems we face become

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