

NORMATIVE ANALYSIS AND STATISTICAL TREATMENT/VALIDITY OF THE LIKERT SCALE

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ABSTRACT

The Likert scale is one of the most widely accepted psychometric response scales. Consensus regards the scale as ordinal and the treatment of data as interval is considered improper. This paper proves that there are cases that not only allow the manipulation of data as interval data but require it.

With the Likert scale it is often attempted to display the mental process "feeling" and more specifically emotion emanating from a cognitive process [2]. The variable is considered to be the "feeling of the respondent" and its theoretical range consists of all possible feelings of a person towards a particular stimulus. This variable is continuous [3].

For many stimuli there are several parameters that formulate feeling and these parameters are discrete samples of feelings. From these samples a person is asked to extract a mean (weighed or arithmetic, depending on the weighting factor of each parameter) and to depict this mean in a particular class (bin). The feeling of a human is often the result of multi-criteria analysis [1] that can be modeled as a practical application of sampling theory.

Any stimulus over time is capable to shape each parameter (sample) and the average of these parameters will lead to the formation of a specific emotion and its intensity. The value within the class that is given as an answer will be the average of averages of samples (of a continuous variable) and will thus follow the central limit theorem.

Consequently, there are many circumstances where the treatment of data as interval data and not ordinal data proves necessary. The specific treatment should be elected in the planning stages of the research study.

Keywords: Likert scale, interval data, ordinal data, statistical treatment, normative analysis

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