

Debate around Using and Misusing Likert Scales

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Measuring Social Behaviour

- Measuring traits of character and personality (or social behaviour in general) can be practically important in many research areas.
- Intuitively, everyday aspects of social behaviour have to be considered as *qualitative* data.
- Qualitative data analysis can be highly subjective, descriptive, non-statistical and exploratory in nature.
- This brings an issue when the data are analysed in a mathematical point of view.
- Most “well established” statistical methods are based on *quantitative* data.

Likert Scale

- A Likert scale is used to quantify an underlying qualitative latent construct.
- Introduced by a psychologist, Rensis Likert (1932).
- It is the most widely used method of measuring personality, social, and psychological attitudes in surveys (Hodge and Gillespie, 2003).
- Popularity of Likert scales is due to the ease of construction, intuitive appeal, adaptability, and usually good reliability.
- There is confusion between a Likert scale and a rating scale.
- In short, a Likert scale is a collection of responses measured on a rating scale.
- Usually on the 5-point rating scale (e.g. strongly disagree, disagree, neither agree nor disagree, agree, strongly agree).

Likert Item and Likert Scale

- A *Likert item* is a **single statement** that the respondent answers by giving it a quantitative value on a rating scale.
- Likert (1932) specifies that ideally the response to Likert items should be "symmetric" and "balanced".
- A *Likert scale* is created by **aggregating responses on several Likert items**.
- Proper analysis of Likert type scales has been debated for a long time.

Sample Likert Scale Questions

Social Disorder Questions (SDQ)

SDQ_Q110 In your neighbourhood, how much of a problem are the following?

a. Noisy neighbours or loud parties

1: A big problem

2: A moderate problem

3: A small problem

4: Not a problem at all

SDQ_Q120 B. People hanging around on the streets

1: A big problem

2: A moderate problem

3: A small problem

4: Not a problem at all

SDQ_Q140 C. Garbage or litter lying around

1: A big problem

2: A moderate problem

3: A small problem

4: Not a problem at all

Source: General Social Survey - Canadians' Safety (GSS) (Statistics Canada, 2019)

Arguments Against Likert Scales

Those who maintain ordinalist (Hodge and Gillespie, 2003) and intervalist (Carifio and Perla, 2008; Norman, 2010) views have been debating about analysis for Likert scales.

- Likert *items* are ordinal in character (i.e., produce rank order data).
- Some argue that ordinal data at the *item* level cannot be interval data at the *scale* level.
- Even if it did, the intervals between values cannot be presumed to be equal.
- There is no theoretical basis for assuming that the aggregation of Likert items provides interval data.

Arguments Against Likert Scales

Contd.

- Non-parametric analysis techniques can be used in analysing non-interval data.
- But these can be less sensitive and less powerful than parametric approaches.
- Therefore it is more likely to miss weaker or emerging findings.

Arguments in Favour of Likert Scales

- Though Likert *items* are ordinal, Likert *scales* are interval in nature (given sufficient Likert items).
- Therefore can be analysed using common parametric methods with higher powers.
- Some parametric methods are highly robust for violations in the distributional assumptions (Norman, 2010).
- E.g. Monte Carlo studies have shown the F-test to be extremely robust to violations of its assumptions (Glass et al., 1972).
- There are many empirical studies that show that Likert scales work in practice (Carifio and Perla, 2008).

Conclusions

- Likert scales are popular in surveys which helps to quantify qualitative attributes.
- There are two views on the proper analysis of Likert items/scales.
- Ordinalist argue that Likert scales should be treated as ordinal data.
- Intervalist argue that Likert scales are approximately interval data.
- Some argue that responses to Likert items are subjected to a cross-cultural bias (Heine et al., 2002).
- Due to all these reasons, using Likert scales should be done by carefully evaluating the qualitative construct.

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Thank
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