

8.1: Factor Analysis Definitions

Learning Objectives

At the end of this section you should be able to answer the following questions:

- How would you explain the aim of Factor Analysis?
- How is Factor Analysis related to measure development?

In psychology, we use many measures to capture psychological constructs. Many of you in Psychology would have encountered measures like the Depression Anxiety Stress Scale or the Satisfaction with Life Scale, or other such measures. These measures use many items to capture constructs like depression, well-being, or intelligence. These measures go through a development process, in which a number of items (i.e., test questions) are tested with a population, and the items are tested to see if they cluster together around a construct. For example, questions like ‘I fell down’, ‘I often feel unhappy’ or ‘I find it hard to get excited about life’ could measure depression. An item like ‘I often feel happy’ would not go with such items.

So how do you justify this statistically? Generally, one step is the use of Factor Analysis, which is a form of analysis that aims to “*summarise the interrelationships among the variables in a concise but accurate manner as an aid in conceptualisation*” (Gorsuch, 1983; p2.). This analysis method can be used to help develop scales and measures by removing items and developing factors. Therefore, at the heart of Factor Analysis is the reduction of a set of items, which is based on removing items that do not share a sufficient amount of variability with the other items in the set.

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