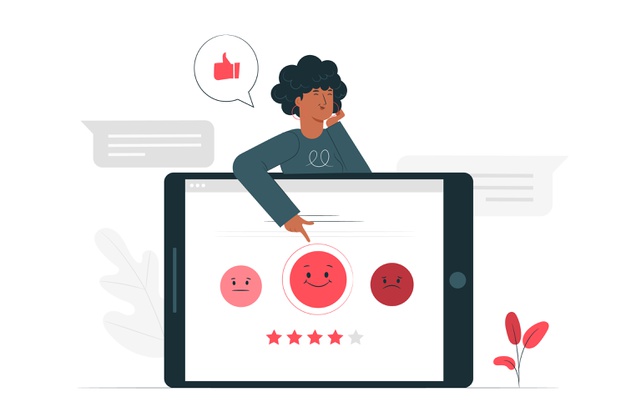
Using Rasch measurement theory to guide consumer product design

The personal opinions and attitudes of consumers towards the products they use are of fundamental importance to manufacturers. Data obtained from consumer surveys are typically employed to aid the development and design of products. However, such data are difficult to interpret. How can people’s emotions regarding products be effectively measured? Using Rasch measurement theory, ordinal level data (i.e. survey responses) are converted into interval measurements. This allows descriptive statistical analyses of consumer data, providing valuable insight into the consumer’s sentiments and attitudes. In particular, Rasch theory enables the relationship between consumer responses and the product features or formulation to be modelled, which is used to inform the design of new products. These models provide rich information about each participant and question in a survey, leading to improvements in the design and administration of consumer research. In this project we are collaborating with Procter and Gamble – one of the largest multinational consumer goods corporations – to analyse their consumer data using Rasch theory. The methods used in this project have the potential to assist manufacturers worldwide in the optimal design of new products.



The attitudes and sentiments of consumers towards products are fundamental in the product design and development. Manufacturers typically use data from consumer surveys to gain valuable insight on consumer opinion, and use this to inform their design procedure. However, the attitudes and sentiments of people are affective responses, which cannot be easily measured. Rasch model theory provides a probabilistic technique in which to convert people’s opinions into interval measurements. The responses of consumers to statements about specific products (such as “I find this product useful”) can be transformed into linear measures for which descriptive statistics can be applied. In this presentation, I will discuss the application of Rasch model theory to consumer data. In particular, I will talk about the research that is currently being undertaken in collaboration with Procter and Gamble – the industrial partner in this project. This research aims to utilise Rasch model theory to aid the design and marketing of future products.