

Sensorveiledning UV9293 - Item Response Theory

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April 23, 2019

1 Learning objectives of the course

Knowledge

- Demonstrate an understanding of the basic principles and models within Item Response Theory (IRT)
- Understand how IRT is used in education and psychology to conduct individual-level and population-level inference
- Recognize the differences between classical and IRT test design approaches

Skills

- Conduct IRT analyses to evaluate assessments and construct scales
- Fit IRT models to test data using the open source statistical software environment R

Competencies

- Outline a research program that can support the development of an assessment within an IRT framework
- Evaluate the appropriateness of assessments for their intended purpose by utilizing IRT techniques and tools

2 Description of the assessment scheme in the course

The assessment is in the form of a paper to be submitted in two stages:

Stage 1 A brief topic description is written and submitted to the responsible teacher. Comments are then provided regarding the selected topic and potential modifications to the topic description are requested.

Stage 2 A full paper consistent with the description in Step 1 is submitted after the conclusion of the lectures in the course. The responsible teacher may ask for revisions before assigning a grade to the paper.

3 Formal requirements of the course

Attendance requirement

To obtain 1 credit, 80% attendance in the course is required. To obtain 5 credits, 80% attendance and a successfully completed paper is required.

Length and format of the paper

The paper should be written in the format of an article in an academic journal and constitute a total of 2500-3500 words, excluding the reference list. The paper should otherwise adhere to the publication manual of the American Psychological Association version 6. The paper should have roughly the following outline:

- Abstract (maximum 200 words)
- Introduction
- Research questions
- Methodology
- Results
- Discussion
- References

4 Assessment criteria

In the paper, how and when the data were obtained must be carefully detailed. In the analysis you should utilize item response theory methods discussed in the course. Be careful to motivate the decisions made in the analysis and refer to the scientific literature when appropriate.

The sections of the paper will be evaluated with basis in the following:

- Abstract
 - The abstract should summarize the study objectives and the main findings of the paper. It should be a stand-alone text that omits non-essential references.
- Introduction

- The topic matter should be introduced in a manner suitable to non-experts in the field and relevant previous research should be summarized.
- Research questions
 - Research questions should be well-grounded and supported by theory.
 - Research questions should be clearly and concisely defined.
- Methodology
 - The methods and procedures that the study will use should be concisely defined and should have appropriate references to the literature.
 - Relevant methods of model fit evaluation and item fit evaluation should be described and employed.
- Results
 - The results should be clearly presented and it should be made clear how the results answer the research questions.
- Discussion
 - The results should be interpreted and the implications of the study should be discussed.
 - It should be discussed how generalizable the results are and what the limitations of the study are.
 - The results should be contextualized in relevant theory.

5 Course description stating the course's learning outcomes

The course description can be found at: <https://www.uio.no/studier/emner/uv/uv/UV9293/index.html>

6 Reading list

The reading list can be found at: <https://www.uio.no/studier/emner/uv/uv/UV9293/v19/pensumliste/index.html>