Course instructions

Questionnaire methods in practice:
Measuring and validating latent and manifest psychological constructs (7,5 p)

HT 2020

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Course instructions

Content
In psychology, theories and hypotheses often refer to latent (not observable) and manifest (directly observable) concepts or constructs. Empirically, these constructs are often studied with questionnaires. Consequently, a good questionnaire design is vital for the reliability and validity and the overall quality of research studies for which questionnaires are used as tools of data collection.

This course teaches basics of measurement theory and questionnaire development in order to provide course students with essential skills to be able to develop, use, and evaluate questionnaire studies. Questionnaire studies are embedded in their research design tailored to answer a research question. The course therefore also includes lectures and exercises about research design and evaluation, as well as ethical considerations.

The course contains both classroom lectures and practical exercises. Classroom lectures contain presentation and discussion of important concepts and methods for survey construction and evaluation. In the practical exercise, each student formulates an own research question to be studied with a self-developed questionnaire for which data is being collected online. Following that, each student evaluates their own questionnaire in terms of evidence for reliability and validity. Finally, data collected with the questionnaire is used for further data analysis to answer the initially formulated research question. Each student presents the process of questionnaire construction and evaluation, as well as the analysis and interpretation of the findings concerning the overall research question in an oral presentation and in a written report. The written report is evaluated and graded as part of the examination.

In order to provide students with the necessary skills to set up their questionnaire online, and do the appropriate statistical analyses to evaluate measurement properties, this course contains three tutorials in which each student needs to bring their own computer (or lease one from the department). These three tutorials include one for questionnaire design with the online tool Qualtrics, and two for getting familiar with statistical analyses of reliability and validity in statistical programs.

Expected learning outcome

After the course, students are expected to be able to design a questionnaire, collect data and evaluate the questionnaire’s quality on their own. In more detail, this means that students are expected to be able to

1. Discuss and evaluate how different research questions relate to the appropriateness of different research designs, sampling and data collection methods and demonstrate their understanding of how these aspects influence the validity of findings and their interpretation
2. Relate the theoretical ideas of psychometry to issues of reliability and validity in data collections done with questionnaires
3. Perform statistical factor-analytic techniques and demonstrate understanding of the theoretical ideas behind these in order to evaluate the measurement properties in a questionnaire
4. Demonstrate their understanding of methodological questions in research studies through critical evaluations of their own and peers’ work spanning from the formulation of a research question, questionnaire construction, research ethics and data collection as well as statistical analysis, to the interpretation of findings

Both the course lectures and practical exercises are designed to enable the students to write their final report and prepare for the written exams, and students are thus expected to attend lectures and exercises. **Students are expected to read the literature before each classroom lecture. Discussions in seminars are based on prepared material.**

**Examination**
The final grade is based on the results of the written examination (test) and the individual research report submitted by each student. Both parts influence the final grade equally. For more details on what the final grade is based on and how it is calculated, see below:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Criteria</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>The expected learning outcomes have been reached to an exceptionally high degree.</td>
<td>9-10 points</td>
</tr>
<tr>
<td>B</td>
<td>The expected learning outcomes have been reached to a very high degree.</td>
<td>7-8 points</td>
</tr>
<tr>
<td>C</td>
<td>The expected learning outcomes have been reached to a high degree.</td>
<td>5-6 points</td>
</tr>
<tr>
<td>D</td>
<td>The expected learning outcomes that have been reached are satisfying.</td>
<td>3-4 points</td>
</tr>
<tr>
<td>E</td>
<td>The expected learning outcomes have been reached even though minor gaps exist.</td>
<td>2 points</td>
</tr>
<tr>
<td>Fx</td>
<td>The expected learning outcomes have not been reached.</td>
<td>0-1 points</td>
</tr>
</tbody>
</table>

**Important note!** To pass the course, at least 1 point has to be given for both the written examination and the individual report.

The written examination tests the students’ knowledge and understanding of theory and its relation to practical aspects in research studies, and in particular with a focus on questionnaire design and method of data collection. **This written test accounts for 50% of the total course grade.** Accordingly, the test can give a maximum of 5 points, and calculation of points is done as follows:

<table>
<thead>
<tr>
<th>Point</th>
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</tr>
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<tbody>
<tr>
<td>5</td>
<td>At least 90 % of the examinations total of points</td>
</tr>
<tr>
<td>4</td>
<td>At least 80 %</td>
</tr>
<tr>
<td>3</td>
<td>At least 70 %</td>
</tr>
<tr>
<td>2</td>
<td>At least 60 %</td>
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</table>
The report contains more of the practical aspects and is examined both orally in a final seminar, and as a written report. This part of the examination accounts for the other 50% in the final course grade.

The report is based on the exercise that students in this course are doing. Each student chooses a research question, identifies and defines the variables (constructs) that need to be measured with a questionnaire to study their research question. They operationalize their constructs by means of items (statements or questions) formulations.

The students set up an online questionnaire that contains these items, and all questionnaires built by students finally form the building blocks of a big course questionnaire. Each student receives a link to the whole questionnaire and distributes the link so that a reasonable amount of data is collected in order to make analysis of measurement properties as well as subsequent analysis of each student’s research question possible. More information about the details on this exercise is given upon course start.

Each student finally formulates their own report, demonstrating and critically discussing the process of work done, starting from the initial research question and the procedure of questionnaire design and evaluation to the final analysis and interpretation to answer the posed research question. As a final part, the report is furthermore supposed to contain a critical discussion of reliability and validity issues and problems that the student met underway. More detailed information will be available upon course start.

The final report must be handed in before the student can take part in the final seminar where all students present their own report, as well as they are expected to actively participate and follow peer students’ presentations. Participation in this final seminar is mandatory.

The report is – at a maximum - giving 5 points to the total grade, points and related criteria, see the follow table:

<table>
<thead>
<tr>
<th>Point</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>The student presents a well-developed line of argumentation for her/his choice of research question and constructs, and the related construction of items for the questionnaire. The description of the work process and analyses is exemplary and correct. The discussion of results reflects rich knowledge about reliability and validity. Own conclusions about the study’s potential to answer the research question are nuanced and well-grounded in the measurement and methods theory. The report contains all parts specified in the instructions and has a clear structure as well as it fulfills form requirements. Correct choice of analysis in relation to research question and task.</td>
</tr>
</tbody>
</table>
| 4     | The student presents arguments for her/his choice of research question and constructs, and the related construction of items for the questionnaire. The description of the work process and analyses is elaborated and correct. The discussion of results reflects knowledge about reliability and validity. Own conclusions about the study’s potential to answer the research question are presented. The report contains all parts specified in the
instructions and has a clear structure as well as it fulfills form requirements. Correct choice of analysis in relation to research question and task.

3 The work process and all analyses are described, and performed at a level that is satisfying basis requirements. The discussion contains a discussion of reliability and validity and presents reflections over problems with the study. The report contains all parts specified in the instructions and has a clear structure as well as it fulfills form requirements. Correct choice of analysis in relation to research question and task.

2 The report contains all parts specified in the instructions and has a clear structure as well as it fulfills form requirements. Correct choice of analysis in relation to research question and task.

1 The report contains all parts specified in the instructions, has for most parts a coherent structure as well as it fulfills form requirements. Correct choice of analysis in relation to research question and task.

0 Report does not fulfill one or more criteria listed for 1 point

Literature

The literature consists of books and research articles. All students read the research articles, for books, there is a choice between a Swedish and two English course books.

For those of you who speak Swedish, the course book is:

For non-Swedish speaking students, the following books are course books, and we also suggest to read one chapter by Kline:

For all students, the following articles/book chapters are course literature:

**On Athena:**
AERA, APA, NCME (2014). *Standards for educational and psychological testing.* Washington, DC. (Validity, 11 pages) *(A)*  
ESOMAR guidelines for online research. *(E)*  
VR: Forskningsetiska principer inom humanistisk-samhällsvetenskaplig forskning. *(VR)*

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