

Poster session – Tuesday April 9

Posters can be pinned Tuesday morning (doors open at 09:00). Poster session will be held during lunch hour (12:20 – 13:20). You are asked to remove your poster from the poster board at the end of the poster session.

Poster Abstracts (*in alphabetic order*)

Need support in the classroom: Is it a two-level phenomenon, and if so, how should it be modelled?

Flunger, B.^{1*}, Hornstra, L.¹

¹ Utrecht University, Netherlands

* Presenting author (PhD)

Briefly Explain Your Question (max. 100 words)

Teachers provide need support to students or classrooms: They grant one student the choice to proceed with another task, or choices between assignments for the class. Is it relevant to assess need support at the class (the teacher shows *us* that math is interesting) and the student level (the teacher shows *me* that math is interesting)? We present results from Multilevel CFAs using data of two samples ($N_1 = 423$ students; $N_2 = 473$), modelling teachers' need support at the student and class level with different conceptualizations.

Should these measures be combined in one measurement model or are there distinct constructs?

Scientific field(s) of the author(s)

Education, Educational Psychology

Relevance to conference theme (max. 50 words)

Need support could be a two-level phenomenon. Results from studies using measures targeting individual and class support ("I/we get choices") are treated as if they assessed the same. Research is missing whether the construct is theoretically an individual or a cluster level construct, or both (Stapleton, Yang, & Hancock, 2016).

Keywords (max. 3)

Need support, Multilevel CFA

What type of multilevel analysis to use for mixed experimental study design with a virtual supermarket?

Hoening, J.^{1*} (PhD-student)

Supervisors:

Mackenbach, JD.¹, Lakerveld, J.¹, Beulens, J.¹

¹ Amsterdam UMC, Vrije Universiteit Medisch Centrum? Amsterdam, Department of Epidemiology and Biostatistics, Amsterdam Public Health research institute, De Boelelaan 1117, Amsterdam, the Netherlands

* Presenting author (also indicate if the presenting author is a PhD-student by adding the text 'PhD-student' and add the name of your supervisor)

Briefly Explain Your Question (max. 100 words)

To answer the research question 'What is the effect of different pricing and nudging strategies on food purchasing behaviour in a virtual supermarket setting?' we have used a mixed study design in which n = 300 completed an experiment in which participants were randomly allocated to three arms (subsidy, tax and subsidy + tax arm) and were asked to do their groceries for five consecutive weeks, in five different supermarket scenario's (baseline, nudging only, pricing only, pricing + price salience, nudging + pricing + price salience). We want to test for moderation by socio-economic status (2 groups).

Scientific field(s) of the author(s)

Epidemiology

Relevance to conference theme (max. 50 words)

We developed a study design using both a within-subject and between-subject design, conducted a sample size calculation and collected our data.

We expect that multilevel analysis will be required to answer our research question, but are looking for the best statistical methodology.

Keywords (max. 3)

Mixed study design; multilevel; RCT

How to include time-varying and time-invariant predictors and their interaction in a multilevel model

Maciejewski, D.F.^{1,2*}, Penninx, B.²

¹ Department of Psychiatry, VU medical center, Amsterdam, the Netherlands

¹ Department of Child and Adolescent Psychology and Psychiatry, Erasmus medical center, Rotterdam, the Netherlands

* Presenting author

Briefly Explain Your Question (max. 100 words)

I have a model with negative life events as a time-varying predictor (6 time-points) and genetic risk as a time-invariant predictor and depressive symptoms as an outcome (6 time-points). I also included the interaction between negative life events and genetic risk (that is my main question). However, I am struggling with a couple of things:

- 1) The interaction term between my time-varying and my time-invariant predictor, shall I treat it as a time-varying or time-invariant predictor?
- 2) Do I need to mean-center my predictor variables? Will I not take away the development of the time-varying predictors by mean-centering?
- 3) How can I do simple slope analyses as a follow-up of a significant interaction effect?
- 4) How can I deal with missing data? Mice package? On all variables?

Scientific field(s) of the author(s)

Psychiatry, Genetics, Longitudinal

Relevance to conference theme (max. 50 words)

Given that this is the multilevel conference, I am hoping to come into contact with other researchers and statisticians who have done similar things as me and who could brainstorm with me about how to continue my

analyses. I am also interested in the keynote about missing data in multilevel models.

Keywords (max. 3)

Multilevel, time-varying & time-invariant predictors, interaction/moderation

Poster Title - How might various approaches to handling clustered data be considered when using discrete-time survival analysis?

Author

Most, DE

School of Education

Colorado State University, United States

Briefly Explain Your Question (max. 100 words)

This project investigates how doctoral student funding is associated with the likelihood of completing the Ph.D. Doctoral students are clustered in departments and institutions. Though the term, multilevel models, seems to have become synonymous with random coefficient models in education research circles, the fixed effects conditional logit model and generalized estimating equations are other examples of multilevel methods that can be applied with a binary outcome. While all multilevel methods produce standard errors that are adjusted for dependence among observations, each approach has its own set of assumptions, opportunities, and limitations. How might these choices be considered?

Scientific field(s) of the author(s)

Applied Statistics, Research Methodology, Education

Relevance to conference theme (max. 50 words)

The purpose of this poster is to explore how one might consider handling clustered data when using discrete-time survival analysis in the context of a substantive project. Questions regarding multilevel analyses with empirical data seem to be in line with the purpose of the posters in this conference.

Keywords (max. 3)

Clustered data, Discrete-time survival analysis

Multilevel design in meta- and pooled-analysis using area-level data collected at various spatial scales across several cohorts, countries and time periods

Motoc, I.^{1*} (PhD-student)

Supervisors:

Deeg, D.¹, Penninx, B.², Huisman, M.^{1,3}

¹ Amsterdam UMC, Vrije Universiteit Medisch Centrum? Amsterdam, Department of Epidemiology and Biostatistics, Amsterdam Public Health research institute, De Boelelaan 1117, Amsterdam, the Netherlands

² Amsterdam UMC, Vrije Universiteit Amsterdam, Department of Psychiatry, Amsterdam Public Health research institute, De Boelelaan 1117, Amsterdam, Netherlands

³ Vrije Universiteit Amsterdam, Department of Sociology, De Boelelaan 1117, Amsterdam, Netherlands

Briefly Explain Your Question (max. 100 words)

Our aim is to investigating the longitudinal association between social environmental characteristics and depression within nine longitudinal-cohorts covering 9 countries/35 cities. Both meta- and pooled-analysis can be done across the multiple cohorts. Area-level data linked to participant data differs across countries in spatial size (neighbourhood-, postal code-, municipality-level) and cohorts have different harmonized data available. Thus what is the best multilevel longitudinal model to apply, in a meta or pooled-analysis? Can different models be developed in each cohort depending on data availability? We also want to test for mediation by social factors (e.g. social support).

Scientific field(s) of the author(s)

Epidemiology

Relevance to conference theme (max. 50 words)

Multilevel analysis is needed to investigate longitudinal data and to take into account independent variables collected at several spatial scales across several cohorts.

Keywords (max. 3)

Multilevel; contextual analysis; cohort studies

How to handle zero-inflation plus uneven distribution over crossed random factors

Quené, H.^{1*}, Nootboom, S.G.¹

¹ Utrecht institute of Linguistics OTS, Utrecht University, the Netherlands

* Presenting author

Briefly Explain Your Question (max. 100 words)

After detecting an error in his/her own speech, a speaker typically cuts off speech and repairs the error. We investigated the cutoff-to-repair times (in ms) observed in two experiments in which speech errors and repairs were elicited. These data are (a) unevenly distributed over subjects and items, and (b) zero-inflated, with 90/768 observations being zero (repair starts immediately after cut-off). Nevertheless, analyses using zero-inflated negative-binomial GLMM (R::glmmTMB) provide sensible estimates. Questions are:

- (1) How can the ZINB GLMM be cross-validated?
- (2) How can the ZINB GLMM be extended to include random slopes, given the uneven distributions over random elements?

Scientific field(s) of the author(s)

Phonetics, Psycholinguistics

Relevance to conference theme (max. 50 words)

This poster attempts to handle zero-inflation, which entails the joint estimation of a fixed zero-inflation part, a fixed conditional (nonzero) part, and a random part of the multilevel model. The poster also addresses uneven (zipfian) distribution of data over random elements. Both complexities typically arise in data observed in natural settings.

Keywords (max. 3)

zero-inflated models, crossed random effects, speech self-monitoring

Longitudinal Approaches to Study Changes In Mood States And Subjective Well-Being: Multilevel Modeling Vs. Latent Growth Curve Analysis

Stogianni, M.^{1*} 'PhD-student'

¹ University of Luxembourg, Luxembourg

Supervisor: Dr. Elke Murdock

* Presenting author (also indicate if the presenting author is a PhD-student by adding the text 'PhD-student' and add the name of your supervisor)

Briefly Explain Your Question (max. 100 words)

An e-diary study was conducted for a period of 10 days on a sample of immigrant adolescents. The aim was to assess short-term fluctuations in mood states and feelings of well-being as a function of perceived discrimination. The sample size was relatively small, also at the higher level (30-40 students per school, 3 schools) and data are not missing at random. We are interested in intraindividual and interindividual changes across different mood dimensions and the role of protective/risk factors that affect these changes. What would be the most appropriate analysis method to investigate directions in change: multilevel modeling or latent growth curve modeling? (Results from both analyses methods will be presented with the aim to identify potential strengths and limitations).

Scientific field(s) of the author(s)

Social Psychology, Cross-Cultural Psychology

Relevance to conference theme (max. 50 words)

I have some questions regarding the applications of Multilevel Modeling on small sample sizes. This methodological conference will help me resolve some issues I have encountered during the data analysis process and identify the most appropriate analysis method to answer my research questions.

Keywords (max. 3)

mood states, longitudinal changes

How to test measurement invariance in cross-classified models within a three levels structure?

Tagliabue, S.^{1*}

Lanz, M.¹

¹ Catholic University, Italy

Briefly Explain Your Question (max. 100 words)

The aim of my research is to test measurement invariance of a relational instrument assessing given and received support within family relationships.

The instrument is composed by 20 items and has been administered to three family members (Perceiver: father, mother, or child) each assessing the given and received support (direction) from the other two family members (targets). Thus, perceivers and targets are level 2 cross-classified clusters, whereas families are level 3 clusters. I would like to test whether perceiver and target could affect the measurement of support, controlling for the family shared variance.

Scientific field(s) of the author(s)

Psychometric

Relevance to conference theme (max. 50 words)

Cross-level measurement invariance is a quite recent issue, and less has been written about measurement invariance in more complex design as the one I have. Moreover, the ways to handle both three level and cross-classified structure can be very useful for researchers investigating families, educational contexts, working teams.

Keywords (max. 3)

Measurement invariance, Cross-classified model, Three levels