

***MIGHEAL***

***HEALTH INEQUALITIES  
AMONG MIGRANT  
POPULATION***

***Subproject 4 / Activity 6:  
Bilateral Cooperation***

***WP Leader: NTNU***

Statistical seminar in  
Advanced social statistics  
- multilevel analysis

November 10-11, 2016

Deliverable No. 7



MINISTRY OF EDUCATION,  
RESEARCH AND RELIGIOUS  
AFFAIRS  
GENERAL SECRETARIAT FOR  
RESEARCH AND TECHNOLOGY  
PROGRAMME OPERATOR



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## ***MIGHEAL***

### ***HEALTH INEQUALITIES AMONG MIGRANT POPULATION***

#### **Statistical seminar in Advanced social statistics and multilevel analysis**

***November 10-11, 2016  
Trondheim, Norway***

#### **Course Syllabus & Educational Material**

<b>Project Title</b>	HEALTH INEQUALITIES AMONG MIGRANT POPULATION
<b>Subject area</b>	Research within Priority Sectors
<b>Funding</b>	Financial Mechanism (FM) of the European Economic Area (EEA)
<b>PROJECT CODE EOX</b>	GR 07/3807
<b>Programme Operator</b>	General Secretariat for Research and Technology – Ministry of Culture, Education and Religious Affairs
<b>Coordinator</b>	National Centre for Social Research (EKKE), Greece
<b>Partner</b>	Norwegian University of Science and Technology (NTNU), Norway
<b>Principal Investigators</b>	Theoni Stathopoulou Research Director, EKKE Terje Andreas Eikemo, Professor, NTNU

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In the context of bilateral co-operation between EKKE and NTNU, the EKKE team attended a two days statistical seminar in multilevel analysis organized by NTNU on November 10-11, 2016 in Trondheim, Norway.

**Tutor:**

*Tor Georg Jakobsen*, Professor in political science at NTNU, Department of Sociology and Political Science & Trondheim Business School. He is lecturer in Advanced Social Statistics at NTNU, and co-author of the forthcoming book *Applied Statistics Using Stata* (SAGE Publishing, Nov 2016).

**Duration & Location**

*Thursday, November 10, 2016: 15:30-18:00h* (NTNU, Dragvoll computer lab 9420, building 9, level 4)

*Friday, November 11, 2016: 10:00-16:00h* (NTNU, Dragvoll computer 10350, building 10, level 3)



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### **Course content**

- Basic principles and background of multilevel analysis  
Using STATA for multilevel modeling
- Random intercept model
- Multilevel analysis with a two level structure
- Logistic multilevel model
- Random coefficient (slope) model
- Cross-level interaction
- Multilevel analysis with a three level structure
- Weighting
- Introduction of time
- Cross-classified multilevel model
- Diagnostics
- More random slope
- Level-2 effects & Level-2 outliers

### **Learning methods:**

The course was comprised of six lectures. Each lecture was followed by a hands-on session, in which participants exercised, using STATA program (See attached Statistical Seminar's Educational Material).



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### **COURSE READING LIST:**

Bryk, A. S. & W. Raudenbush, S. W. (2002). *Hierarchical Linear Models: Applications and Data Analysis Methods* (2nd ed.). Newbury Park, CA: Sage.

[This book introduces the readers to multilevel modeling and issues surrounding its application. The authors make good use of examples to illustrate the methods.]

Goldstein, H. (2011). *Multilevel Statistical Models* (4th ed.). London: Arnold.

[Here, the author gives the reader a step by step guidance through multilevel modeling, starting with the basic ideas and moving on to more complex models.]

Hox, J. (2010). *Multilevel Analysis: Techniques and Applications* (2nd ed.). New York: Routledge.

[One of the classics of multilevel modeling, Hox presents an accessible introduction to the topic and includes advanced extension. Can function as a reference to students and researchers.]

Kreft, I. & de Leeuw, J. (1998). *Introducing Multilevel Modeling*. London: Sage.

[This book represents an accessible and practical guide to using multilevel models in social research. The authors look especially at practical issues and potential problems of multilevel modeling.]



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Mehmetoglu, Mehmet & Tor G. Jakobsen (2016). Applied Statistics Using Stata: A Guide for the Social Sciences. London: Sage.

[This book will be available in November 2016, it is a combination of statistical theory and practice. It focuses on questions that can be answered using statistics and addresses common themes and problems in a straightforward, easy-to-follow manner. Includes a chapter on multilevel analysis.]



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