

## Multivariate Analysis (K001035)

Course size (nominal values; actual values may depend on programme)

Credits 11.0 Study time 330 h Contact hrs 90.0 h

Course offerings and teaching methods in academic year 2018-2019

A (year) Dutch lecture 90.0 h

Lecturers in academic year 2018-2019

Van Rossem, Ronan PS04 lecturer-in-charge

Offered in the following programmes in 2018-2019

	crdts	offering
<a href="#">Bachelor of Science in Sociology</a>	11	A
<a href="#">Master of Science in Criminological Sciences</a>	8	A

Teaching languages

Dutch

Keywords

Factor analysis, cluster analysis, discriminant analysis, linear regression, logistic regression, analysis of variance

Position of the course

Multivariate Analysis fits in with course competences B.1.4. The course is in keeping with various scientific course competences, namely B.2.1., B.2.3 and B.2.4. Intellectual competences like B.3.2 and B.3.3 are practiced in this course, since critical reflection and analysing skills are central.

Finally attention is paid to functioning in a team and to correctly and clearly reporting the results of statistical analysis, which contributes to B.4.1., B.4.3. and B.4.4.

Contents

In this course the most important advanced statistical analysis techniques, used in sociology, are covered, including a discussion of all assumptions. Attention is paid to the link between analysis and sociologically relevant problems. The statistical-mathematical aspects of these methods as well as their use in concrete sociological problems form part of this course. Amongst others, the following topics will be discussed:

- statistical control
- multiple regression
- extensions of the multiple regression model (nominal independent variabelen, interaction-effects)
- analysis of variance.
- logistic regression
- principal component and factor analysis
- discriminant analysis
- cluster analysis
- generalized linear model

Initial competences

The students should have successfully taken the courses 'Sociological research II' and 'Quantitative Analysis' (Ba2) or have gathered the competences, intended in these courses, in some other way. Basic knowledge of algebra and function research is a prerequisite.

Final competences

1 - Have insight in the possibilities and limitations of advanced quantitative analysis techniques (logistic regression, principal components and factor analysis, discriminant analysis, cluster analysis, ...) in social-scientific research.

- 2 --- Klik om te editeren ---- Understand, interpret and critically evaluate complex reported analysis results in sociological literature
- 3 --- Klik om te editeren ---- Make a well-considered choice for a suitable advanced analysis technique
- 4 --- Klik om te editeren ---- Articulate and substantiate the limitations of a choice for a certain advanced analysis technique
- 5 --- Klik om te editeren ---- Soundly design and correctly perform advanced statistical analyses on social-scientific data
- 6 --- Klik om te editeren ---- Interpret and report results of complex statistical analyses
- 7 --- Klik om te editeren ---- Critically reflect upon the choice for and use of advanced analysis techniques

#### Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

#### Conditions for exam contract

This course unit cannot be taken via an exam contract

#### Teaching methods

Lecture

#### Learning materials and price

Van Rossem, Ronan. *Multivariate Analyse voor de Sociale Wetenschappen: Wat Vooraf Komt*. Gent: Academia Press, 2007

Van Rossem, Ronan. *Meervoudige Lineaire Regressie: Een eerste inleiding*. Gent: Academia Press, 2012.

Van Rossem, Ronan. *Multivariate Analyse voor de Sociale Wetenschappen: Variantieanalyse*. Gent: Academia Press, 2008.

Van Rossem, Ronan. *Multivariate analyse voor de sociale wetenschappen: Logistische regressie*. (2de uitgave) Gent: Academia Press, 2010.

Van Rossem, Ronan. *Hoofdcomponenten- en factoranalyse. Een eerste inleiding*. Gent: Academia Press, 2012.

Additional texts and slides are made available through Minerva  
Own notes

#### References

From the series *Quantitative Applications in the Social Sciences*, published by Sage (Newbury Park, CA):

Pampel, Fred C. *Logistic regression: a primer* (# 132)

Dunteman, George H. & Ho, Moon-Ho R. *An introduction to generalized linear models* (#145)

Kim, Jae-On & Mueller, Charles W. *Introduction to factor analysis: What it is and how to do it* (#13)

Klecka, William R. *Discriminant analysis* (#19)

Aldenderfer, Mark S. & Blashfield, Roger K. *Cluster analysis* (#44)

#### Course content-related study coaching

Interactive coaching through Minerva (forums, FAQ, e-mail). Questions in class or during office hours

#### Evaluation methods

end-of-term evaluation and continuous assessment

#### Examination methods in case of periodic evaluation during the first examination period

Written examination

#### Examination methods in case of periodic evaluation during the second examination period

Written examination

Examination methods in case of permanent evaluation

Assignment

Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible in modified form

Extra information on the examination methods

Continuous evaluation:

6 group tasks

1 individual task

Calculation of the examination mark

The group tasks count for 30% of the final score, the individual task for 50% and the written exam for 20%. Students are required to pass both the course as a whole and the individual task.