



Национальный исследовательский университет «Высшая школа экономики»
Программа «Методология и методы исследований в социологии: количественные методы исследований/Methodology and Research methods in Sociology: Quantitative Research methods» магистерской программы «Сравнительные социальные исследования» направления 040100.68 "Социология" подготовки магистра

Правительство Российской Федерации

**Федеральное государственное автономное образовательное учреждение высшего профессионального образования
"Национальный исследовательский университет
"Высшая школа экономики"**

Факультет [Введите название факультета и отделения (если есть), на котором реализуется образовательная программа]

Программа дисциплины

Методология и методы исследований в социологии: количественные методы исследований/Methodology and Research methods in Sociology: Quantitative Research methods

для направления 040100.68 подготовки магистра
для магистерской программы «Сравнительные социальные исследования»

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Одобрена на заседании совета магистерской программы «Сравнительные социальные исследования» «__» _____ 20 г

Руководитель магистерской программы: К.С. Сводер

Рекомендована секцией УМС: Профессиональной коллегией по направлению «Социология» «__» _____ 20 г.

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Настоящая программа не может быть использована другими подразделениями университета и другими вузами без разрешения кафедры-разработчика программы.



1 Field of Application and normative references

The program of the course describes the minimum requirements for the knowledge and skills of a student and determines the content and types of classes and assessment.

The program is designed for lectures of this discipline, learning assistants and students of sociology (“International Master in Comparative Social Research”).

The program is developed according to:

- Educational Program of NRU HSE.
- University Academic Plan of NRU HSE for Master level education, confirmed in 2014.

2 The goal of the course

The course aims to provide students with understanding of key concepts and methods of modern statistical data analysis. It gives an overview and practice of the skills necessary for conducting independent research with quantitative survey data, using SPSS. Skills include downloading data, creating a working dataset; recoding and creating new variables; obtaining univariate or descriptive statistics; working with SPSS graphics; working with bivariate analyses including crosstabulations, correlations, t-tests and anovas; multivariate analyses including factor analysis; and hypothesis testing with bivariate and multivariate regression, both linear and logistic. The course also puts these skills into the broader academic context by reviewing how statistics are used in published scientific journal articles.

3 Competences acquired within the discipline

As a result of this course a student will be able to:

- Know the key concepts of statistics;
- Know the main methods and techniques of statistical data analysis;
- Know the main procedures of data transformation and data analysis using SPSS;
- Know the academic standards of reporting results and professional scientific ethics;
- Be able to choose correct statistical methods and procedures according to the research questions and the level of measurement;
- Be able to use SPSS software for creating and transforming variables and conducting data analyses;
- Be able to interpret and present the results of data analysis in oral and written form;
- Be able to analyze secondary data at the level required for an MA thesis;
- Be able to write a paper following the model of published scientific journal articles;
- Be able to evaluate the quality of data analysis in published scientific research and take part in academic discussions.

The course develops the following competences:

Competences	NRU-HSE Code	Descriptors-the learning outcomes (the indicators of achievement)	Forms and methods of studies that contribute to the development of a competence
The graduate should have such general cultural competences (GC), as:			
The ability to	GC-M2	Students should be able to	Group discussion, readings,



develop new concepts and models and apply them in professional work		create hypotheses from a theory, choose proper statistical models for their testing hypotheses, and interpret results in light of published research. Students should be able to read and analyze published sociological literature.	class and home assignments, presenting to the class, writing a paper
The ability to analyze, verify and assess the completeness of information, fill the gaps if necessary under the condition of uncertainty	GC-M6	Students should be able to formulate a main research question and possible hypotheses from a theory, independently choose correct procedures for creating new variables under investigation and correct methods of data analysis to correspond to a research question and variables' level of measurement. Students should be able to independently find published research using different information resources (journal databases) on their own topics.	Group discussion, readings, class and home assignments, presenting to the class, writing a paper.
The ability of self-learning new methods and changing professional fields	GC-M3	Students should be able to read research articles and choose appropriate theoretical concepts and methods of statistical analysis. Students should be able to independently find published research using different information resources (journal databases) on their own topics.	Group discussion, readings, class and home assignments, presenting to the class, writing a paper.
The ability to organize and manage intercultural communication	GC-M7	Students should be able to communicate in English with other students, discuss class assignments. Students should be able to read academic articles and books in English.	Group discussion, readings, class and home assignments, presenting to the class, writing a paper.
The ability to critically analyze the	GC-M1	Students should be able to find a correct procedure of	Group discussion, readings, class and home assignments,



main methods and their applications		creating new variables under investigation and correct methods of data analysis according to research question and level of measurement.	presenting to the class, writing a paper.
The ability to work including research project at the international labor market	GC-M1	Students should be able to read literature in English, communicate in English discussing their class assignments, write class and home assignments in English, write a paper and complete an exam in English. Students practice skills of reading, writing, analyzing data, which are necessary on the international academic labor market.	Group discussion, readings, class and home assignments, presenting to the class, writing a paper.
The graduate should have such general professional competences (PC) as:			
To be able to use social and cultural differences for solving professional and personal problems	SPC-M2	Students should be able to work in multi-cultural groups to fulfill their class assignments and should cooperate with international classmates in the learning process.	Group discussion, class assignments, presenting in class, writing a paper
To be able to follow professional ethical standards and principles of social responsibility	SPC-M7	Students are expected to avoid plagiarism and unfair behavior. Students will not share answers on exams. Students will follow the ethical standards of the profession in using formal citation format in their writing.	Group discussion, class and home assignments, writing a paper, writing an exam
To be able to create, describe and control professional quality standards.	SPC-M7	Students are expected to learn the main advantages and disadvantages of different methods of data-analysis	Group discussion, class and home assignments, writing a paper, writing an exam

4 The place of the course in the plan of program

The current course relates to the disciplines preparing masters students in sociology. This course is a compulsory course for MA students of Comparative Social research.

The course is based on the following previously covered courses:

- Sociology
- Statistics



- Methods of social research

Skills and information from this course should be the basis for studying the following courses and activities:

- Research design
- Human Empowerment: The Co-Evolution of Rights and Culture
- Contemporary social theory: comparative sociology
- Applied research of subjective well-being
- Measurement invariance
- Multilevel regression analysis
- Gender sociology: comparative approach
- MA thesis workshop

The course is strongly related and complementary to other compulsory courses and provides crucial prerequisites for later courses and research projects as well as skills necessary for the master thesis. The course takes place in the first module of the first year of the program, giving students the important skills in designing and conducting their own research as well as assessing the quality of research projects published in a series of working papers and peer-reviewed journals.

5 Thematic plan of the course

№	Theme	Total Contact Hours	Of which: Lecture hours	Of which: Lab hours	Student Work
1	Introduction & Assessment	2	1	1	-
2	Creating a Database	2	1	1	2
3	Descriptive Statistics	4	1	3	2
4	Creating New Variables	4	1	3	2
5	Tests of Association	4	1	3	2
6	Comparing Group Means	6	2	4	4
7	Factor Analysis	6	2	4	4
8	Linear Regression	6	2	4	4
9	Logistic Regression	6	2	4	4
10	Synthesis and Review	2	1	1	2
	Contact hours	42			
	Student work hours				26

6 Forms of control of students` knowledge

Type of control	Form of control	Detailed explanation
Current (weekly)	Class assignment	Students will be expected to attend lectures and lab hours ("seminar" time). Part of this time they



		will be completing practice exercises which must be delivered to the instructor at the end of the class time.
	Home assignment	Students will be expected to complete written homework assignments outside of class time. All assignments will require using SPSS and the dataset(s) for this course, therefore students should plan to spend time in the computer lab outside of regular class hours. All assignments are due at the beginning of the following class time.
Intermediary	Written paper	Students will turn in a 10 page paper in the last week of the course. This paper will consist of presenting a theory, writing and testing hypotheses and discussion of results, including confirming or rejecting hypotheses, following the model of English-language published scientific journal articles.
	Class presentation	Students will give a formal presentation to the class near the end of the course (using Powerpoint or similar program). This presentation will be a concise summary of the findings from their written paper. This presentation will model best practice of international conference standards.
Final	Written exam	Students will take a final exam in the lab. This exam will consist of conducting SPSS exercises on a new dataset and writing about the output.

6.1 Assessment criteria

Intended learning outcomes At the end of the course students will be able to:	Work in class and class presentation	Home assignments	Written paper	Written exam
% of total grade	25%	25%	25%	25%
Be able to choose correct statistical methods and procedures according to the research questions and the level of measurement;	x	x	x	x
Be able to use SPSS software for creating and transforming variables, conducting data analyses;	x	x	x	x
Be able to interpret and present the results of data analysis in oral and written form	x	x	x	x
Be able to analyze secondary data at the level required for an MA thesis	x	x	x	x
Be able to write a paper following the model of published scientific journal articles	x	x	x	
Be able to evaluate the quality of data analysis in previously published research and take part in	x	x	x	x



academic discussions				
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The final grade consists of:

1. Completing in class assignments, attending lectures and participating in lab hours, including giving a formal presentation at the end of the course (25%);
2. Written homework assignments (25%);
3. Turning in a written paper (25%);
4. Written final exam (25%).

Reexamination policy. Students who fail the course are entitled to retake a final exam. This reexamination option will count only toward the students' final exam grade (25% of the course). Students' reexamination grade will not substitute for poor grades earned prior to the final exam in other aspects of the course (attendance/class participation, paper, or homework). Therefore, students seeking a minimally passing grade must also turn in homework assignments and the paper.

7 Course content

1. Introduction & Assessment

The first session will introduce the main topics of the course. Instructors will assess students' previous experience and skill level with statistical methods.

2. Creating a Database

Students will download the 6th wave of the World Values Study from the WVS official web-site (<http://www.worldvaluessurvey.org/wvs.jsp>) and create their own dataset from an existing dataset. Students will get familiar with SPSS interface main menu options and windows (data-editor, output, syntax editor).

Reading (before class)

- Hanneman, Chapter 1 "Using Statistics" in Basic Statistics for Social Research
- For SPSS Help: Babbie, Chapter 4 SPSS Basics in Adventures in Social Research

3. Descriptive Statistics

Students will practice using SPSS for obtaining various descriptive statistics (mean, mode, median, standard deviation et cet.), both in numerical and graph form, for categorical and numerical variables.

Turn in: Homework #1 (Database)

Reading (before class)

- Hanneman, Chapters 2 through 6 in Basic Statistics for Social Research
- Muijs, Chapter 6, "Univariate Statistics" in Doing Quantitative Research in Education
- For SPSS Help: Babbie, Chapter 5 Describe Data and Chapter 6 Graphic Form in Adventures in Social Research

4. Creating New Variables: Recoding and Computing



Students will practice recoding and computing new variables from existing variables in their datasets, applying the correct procedures to either categorical or numerical variables.

Turn in: Homework #2 (Univariate)

Reading:

- For SPSS Help: Babbie, Chapter 7 Recode and Chapter 8 Composite Measures and Chapter 9 Further Analysis in Adventures in Social Research

5. Tests of Association

Students will practice assessing association between pairs of variables, including but not limited to crosstabulations and correlations and graphs.

Turn in: Homework #3 (Recoding)

Reading (before class)

- Muijs, Chapter 8 “Bivariate Analysis looking at the relationship between two variables” in Doing Quantitative Research in Education
- Hanneman, Chapters 12 and 13 in Basic Statistics for Social Research
- For SPSS Help: Babbie, Chapters 10, 11, 12 in Adventures in Social Research

6. Comparing Group Means

Students will practice comparing group means through t-tests, ANOVA and other tests in SPSS.

Turn in: Homework #4 (Associations)

Reading (before class)

- Muijs, Chapter 7 “Bivariate Analysis Comparing Two Groups” in Doing Quantitative Research in Education
- Muijs, Chapter 10 “Using Analysis of Variance to Compare More than Two Groups” in Doing Quantitative Research in Education
- For SPSS Help: Babbie, Chapters 13, 14, 15 in Adventures in Social Research

7. Factor Analysis

Students will practice factor analysis techniques in SPSS.

Turn in: Homework #5 (Group Means)

Reading:

- Foster, Chapter 20, “Factor Analysis” in Data Analysis Using SPSS for Windows
- Bryman, Chapter 11 “Aggregating Variables” in Quantitative Data Analysis with SPSS
- For SPSS Help: Babbie, Chapters 16, 17, 18 in Adventures in Social Research

8. Linear Regression: Bivariate and Multivariate

Students will practice using bivariate and multivariate linear regression for the purpose of hypothesis testing. Students will be expected to test various hypotheses using their dataset.

Turn in: Homework #6 (Factor Analysis)

Reading:

- Muijs, Chapter 9 “Multivariate analysis Relationship between several predictors and one dependent variable” in Doing Quantitative Research in Education
- Hanneman, Chapter 14 in Basic Statistics for Social Research



- Recommended: Orme, Multiple Regression with Discrete Dependent Variables

9. Logistic Regression: Bivariate and Multivariate

Students will practice using bivariate and multivariate logistic regression for the purpose of hypothesis testing. Students will be expected to test various hypotheses using their dataset.

Turn in: Homework #7 (Linear Regression)

Reading:

- Hanneman, Chapter 15 in Basic Statistics for Social Research
- Recommended: Kleinbaum, Logistic Regression: A Self-Learning Text

10. Synthesis and Review

Students will review all the skills practiced in this course and prepare for the final exam.

Turn in: Homework #8 (Logistic Regression)

Turn in: Paper on last day of class

8 Educational techniques

Lectures, group discussions, home readings, work on individual written paper, independent use of SPSS software for data analysis in seminar hours and home work, writing home assignments, giving presentation of results in class.

9 Core readings

1. Babbie, Earl, and Fred Hallye, Jeanne Zaino. 2007. Adventures in Social Research: Data Analysis Using SPSS 14.0 and 15.0 for Windows, 6th edition, [paper copy Library 31B11]
2. Bryman, Alan. 1999. Quantitative Data Analysis with SPSS For Windows: For Social Scientists. Routledge. [ebook 9780203459621, <http://site.ebrary.com/>]
3. Foster, Jeremy. 2001. Data Analysis for SPSS Using Windows Version 8-10: A Beginner's Guide. Sage Publications. [ebook 9781847876409, <http://site.ebrary.com/>]
4. Hanneman, Robert A. Kposowa, Augustine J. Riddle, Mark D. 2012. Research Methods for the Social Sciences: Basic Statistics for Social Research. John Wiley & Sons. [ebook 9781118220559, <http://site.ebrary.com/>]
5. Kleinbaum, David G. and Mitchel Klein. 2010. Logistic Regression: A Self-Learning Text, Springer. [ebook e-ISBN 978-1-4419-1742-3, <http://site.ebrary.com/>]
6. Muijs, Daniel. 2004. Doing Quantitative Research in Education with SPSS. Sage Publications. [ebook 9781412933018, <http://site.ebrary.com/>]
7. Orme, John G. and Terri Combs-Orme. 2009. Multiple Regression with Discrete Dependent Variables. Oxford University Press. [ebook 9780199716296, <http://site.ebrary.com/>]

10 Supplementary readings

1. Agresti, A., Finlay, B. 2009. Statistical Methods for the Social Sciences. Pearson Prentice Hall.
2. Brown, T. A. 2006. Confirmatory Factor Analysis for Applied Research. Guilford Press.
3. Healey J. F. 2009 The essentials of statistics: A tool for social research. Cengage Learning.
4. Jacoby, W. G. 1991. Data theory and dimensional analysis. Sage.
5. Long, J. Scott. 1997. Regression Models for Categorical and Limited Dependent Variables. Thousand Oaks, CA: Sage. Hereafter



6. Moore D. S., Notz W., Fligner M. A. 2007. The basic practice of statistics. –New York : WH Freeman and Company.
7. Fox, J. 2008. Applied regression analysis and generalized linear models. Sage Publications.
8. Gujarati, D. N. 2012. Basic econometrics. Tata McGraw-Hill Education.

11 Software and distance support of discipline

The course requires installed SPSS software and regular access to Internet resources including but not limited to: 1) the source of data used for this course on the official site of the World Values Survey (<http://www.worldvaluessurvey.org/wvs.jsp>); 2) the electronic resources of HSE library (<http://site.ebrary.com/>), and the LMS system at HSE for readings and assignments (<http://lms.hse.ru>).

12 Examples of current and final control

Example Statistics Exercise:

In Class #3: Univariate Statistics from the World Values Survey

Open your renamed copy of the WVS Wave 6 data file which you downloaded. Look up the following variables and answer the questions by filling in the blanks on this page. Turn in this page at the end of class. You may cooperate with others but each person must turn in a page. Make sure your name is on your page. If we have time, we will continue this exercise with other variables.

- 1) “Most serious problem in the world” V80.
 - a. What are the value labels for this variable and what are the corresponding numeric values?

 - b. What numbers represent missing data, and what kind of missing data are they?

 - c. What kind of variable is this? _____
 - d. Which is the appropriate test for univariate statistics on this variable?

 - e. Run this test, and describe your results. Choose two countries to compare. Write two sentences, including numbers about this test on the back of this page. If time allows, you may compare a third country.

- 2) “Trust in people you meet for the first time” V105
 - a. What are the value labels for this variable and what are the corresponding numeric values?

 - b. What numbers represent missing data, and what kind of missing data are they?



- c. What kind of variable is this? _____
- d. Which is the appropriate test for univariate statistics on this variable?

- e. Run this test, and describe your results. Choose two countries to compare. Write two sentences, including numbers about this test on the back of this page. If time allows, you may compare a third country.
- 3) “Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair?” V56
- a. What are the value labels for this variable and what are the corresponding numeric values?

- b. What numbers represent missing data, and what kind of missing data are they?

- c. What kind of variable is this? _____
- d. Which is the appropriate test for univariate statistics on this variable?

- e. Run this test, and describe your results. Choose two countries to compare. Write two sentences, including numbers about this test on the back of this page. If time allows, you may compare a third country.

Example Reading Published Research Exercise:

Reading Published Research (RPR)

Article: Haggard et al 2011

Please look at the following article to answer the questions below (you do NOT need to read the entire article). Type your answers to these questions on this form, print it out, and bring it to class next week. When giving answers, include quotes or summaries and include the page numbers.

Haggard, Stephan, Robert R. Kaufman and James D. Long. 2013. “Income, Occupation and Preferences for Redistribution in the Developing World,” *Studies in Comparative and International Development*, 48: 113-140.

1. What is/are the authors’ main research question(s)? (include page numbers)
2. What are the two major theoretical models (“theoretical expectations”) which the authors are going to test? (include page numbers)
3. Are the authors testing any hypotheses? (Hint—sometimes authors say “we expect that..”) If so, what are they? (include page numbers)
4. What **concepts** are being measured in their main independent and dependent variables? (include page numbers)
5. Describe the **data** which these authors use.
6. How do they **operationalize** (or measure) their concepts? What variable (name and number) are they using for measuring their dependent variable? what variables are they using to measure their independent variables? (include page numbers)
7. What are the authors’ conclusions? (include page numbers)



Example Final Paper Guidelines:

Final Paper Rules

For your final paper, you will be writing a research report using variables from Wave 6 of the World Values Survey dataset which we have been using in class. This paper represents 25% of your final grade. Material which you prepare for your research paper will also be used for your in class presentation. This paper will be approximately 10 pages long, typed, double-spaced, standard margins, not including abstract and appendices of tables.

PURPOSE:

This paper is an academic research paper presenting the results of your secondary data analysis. This paper should demonstrate your 1) logical reasoning, 2) your skill at interpreting statistics, and 3) your ability to communicate in academic writing style.

CONTENT:

This paper, like all academic research papers, must contain the following sections: ABSTRACT, INTRODUCTION, LITERATURE REVIEW, METHODS, FINDINGS, DISCUSSION/CONCLUSION, REFERENCES. The content is as follows:

ABSTRACT: A one-paragraph summary of the research question and (only) main findings. (on a separate page, not counted in the page count).

INTRODUCTION: Contains the research question and establishes sociological relevance (ie the “why”, may also include social or policy relevance) of the topic. (this is brief!)

LITERATURE REVIEW: Examines research question in terms of the theory that generated it, and reviews existing sociological research on the research question, including research that may be only partially related. If the specific topic is less studied, this section should address what is available on related topics. The literature review generally includes a mention of how the current research replicates previous research, contradicts previous research, or somehow modifies or extends previous research. At the end of this section, you must clearly list the hypothesis or hypotheses to be tested. It should be obvious how the hypotheses fit with the themes written in the literature review.

For the length of this paper, your literature review must make reference to at least five (5) recent academic peer-reviewed journal articles about your topic.

DATA & METHODS: This section briefly describes the dataset. This section should explain how the research question is operationalized into testable hypotheses. This section should clearly state the concepts to be tested in the hypotheses, as well as clearly label the independent variables, the dependent variable, and any intervening or control variables also to be included. This section should describe which variables are measuring which concepts. Lists of descriptive statistics on all variables will be included in Tables in the Appendix.

FINDINGS: This is the section in which you present your findings and explain which tests were conducted in SPSS. This is where written sentences report and discuss the most interesting findings. Name the test or procedure used to obtain each result (ie, this is a linear regression coefficient or a correlation coefficient). This section should address whether the analysis of data confirms your hypotheses. Remember: Never state that your hypotheses are “true” or “proven.” With results of regression tests you can “confirm” or “reject” your hypotheses. Tables which you create should be included in the appendix and be referred to in this section. There must be no output di-



rectly from SPSS attached to or included in this paper. All results must be in tables inside the Word document (from Excel).

DISCUSSION/CONCLUSION: This section should BRIEFLY summarize the findings. It should also explain how your findings represent a contribution to the literature reviewed at the beginning of the paper. Discuss whether your findings support or contradict some previous research. This section should briefly discuss limitations of the findings, especially in terms of your methods. Evaluate whether the concepts could have been measured differently or different tests run. This section may include suggestions for future research or implications for policy or both, but future research or policy implications are not required.

REFERENCES: All references cited in the text must be listed in the bibliography according to ASA Format. Reread the handout about ASA format. Journal articles are print sources, not electronic sources. This paper must contain 5 peer-reviewed journal articles but may also contain additional sources.

APPENDIX: This section contains tables as referenced in the text. This must include Table 1 (frequencies for categorical variables), Table 2 (means for numerical variables), then Tables for the most important crosstabs and correlations, then tables of linear and logistic regressions. Templates for these tables will be provided.

GRADING CRITERIA OF FINAL PAPER

The final paper will be graded on the following criteria. That is, the readers will look for the elements of a good research paper in the following respects.

1) Content

A) Logical Reasoning (Does the paper demonstrate understanding of key ideas, illustrated but not limited to the ideas below? Can the reader easily see the answers to these questions in the paper?)

What concepts are being measured?

How are concepts being measured?

Why are these measures chosen?

What hypotheses are being tested?

Where do these hypotheses come from? (ie connection to literature)

How will these hypotheses be tested?

Does testing these hypotheses address the research question as stated?

Do variables chosen measure the hypotheses as stated?

Are the hypotheses confirmed or rejected?

B) Skill at interpreting statistics (Does the paper demonstrate understanding of key ideas, such as, including but not limited to the questions below?)

What does r squared mean?

Are results statistically significant?

What do linear regression results mean?

What do logistic regression results mean?

2) Form

Does the paper follow the paper sections and content described in the assignment?

Does the paper follow ASA format for in-text citations (including page numbers where needed)

Does the paper follow ASA format for bibliography?