Post Graduate Diploma in
Survey Data Analysis for Development

A new qualification coming in 2016

Whether it is eliminating poverty; reducing inequality; improving education or health outcomes: the key development challenges of our time all require accurate survey measures.

As the United Nations notes:

> "Data are the lifeblood of decision-making and the raw material for accountability. Without high-quality data providing the right information on the right things at the right time; designing, monitoring and evaluating effective policies becomes almost impossible."

> (*A world that counts*, Independent Expert Advisory Group on a Data Revolution for Sustainable Development, November 2014, p.2)

A SALDRU/DataFirst/School of Economics training initiative supported by Statistics South Africa

Why this qualification?

The international context

Many commentators are talking about a "data revolution" that is sweeping the globe. The greater availability of data could enable governments and development agencies to improve the implementation and assessment of their programmes – but only if there are individuals skilled enough to analyse the output. This requires individuals who have both the data skills and an understanding of the policy context.

Furthermore many development organisations are calling for a more fine-grained set of development targets. The World Bank, for example, has recently adopted the twin goals of:

- Reducing poverty
  i.e. reducing the share of people living in extreme poverty to 3 percent of the global population by 2030
- Boosting shared prosperity
  i.e. increasing the average incomes of the bottom 40 percent of the population in each country

This requires detailed information on incomes of all members of the population. A World Bank paper notes that *"data and measurement are pivotal to the assessment of the World Bank's new goals and, thereby, their achievement."* (A Measured Approach to Ending Poverty and Boosting Shared Prosperity, World Bank Policy Research Report, 2015).

The national context

South Africa's development priorities are encapsulated in the National Development Plan. The main objectives are listed as
"By 2030
- Eliminate income poverty – Reduce the proportion of households with a monthly income below R419 per person (in 2009 prices) from 39 percent to zero.
- Reduce inequality – The Gini coefficient should fall from 0.69 to 0.6."

Similar to the World Bank's objectives this requires good survey data. But it also requires the ability to analyse the data appropriately. Most of the "enabling milestones" listed in the NDP also require good data and appropriate analysis.

Who will do the measurement and the analysis?

National Statistics Offices (like Statistics South Africa), academic research organisations (like SALDRU) and international agencies (like the World Bank) are beginning to collect the data that is needed. But the capacity to analyse and to think about the quality of the data that emerges is very thinly spread in developing countries. *This qualification is designed to increase the capacity for the collection and analysis of the appropriate development data*.

Where will this qualification take you?

This qualification is obviously relevant to individuals wanting to work in a National Statistics Office or a government department dealing with service delivery or a development agency.

Aims, Structure and Deadlines

Programme Aims

This diploma is intended to equip participants with the survey and data skills to contribute to the policy debates in South Africa and the world. Both the practical data skills as well as the theoretical understanding of the development and policy context will be emphasised.

Structure

The course is structured around six modules and a research project. The provisional timetable for 2016 is:

- Cross sectional econometric methods (3rd and 4th week January 2016)
- Panel data methods (1st and 2nd week February 2016)
    - Examinations – (2nd week June 2016)
- Complex Survey Methods (3rd and 4th week June 2016)
- Social Welfare Measurement (1st and 2nd week July 2016)
    - Examinations – (1st week November 2016)
- Applied Labour Economics (2nd and 3rd week November 2016)
- Consumption and microeconomic theory (4th week November and 1st week December 2016)
    - Examinations – (2nd week January 2017)
- Research Project workshop (2nd week January 2017)

If students want to finish within one year they will need to hand in their project before re-registration day in 2017 (± 2nd week of February). More details on the modules is given below.

Who is eligible?

People with a degree in Economics, Statistics, Demography or some other tertiary qualification. In the latter case we will want evidence of being familiar with data analysis or econometric software. Note that SALDRU runs a free course every January "An Introduction to Household Survey Analysis using Stata" which can provide some of the background.

Deadlines

Applications need to be made via the UCT website and will close at the end of October.

Background on the organisations presenting the qualification

SALDRU and DataFirst will be running this programme under the auspices of the School of Economics at the University of Cape Town. Much of the material has been successfully presented in the past as short courses.

- SALDRU (The Southern Africa Labour and Development Research Unit) is the premier research unit analysing poverty and inequality in South Africa. SALDRU managed the first nationally representative survey run in South Africa in 1993 and is currently managing the National Income Dynamics Study on behalf of the Presidency.
- DataFirst is South Africa's premier data service, disseminating over 200 studies to researchers throughout the world. It has run workshops on data curation and data quality for many African national statistics agencies.
- The School of Economics at UCT is the top-rated Economics Department in Africa, with a particularly strong record in applied work through research units like SALDRU.
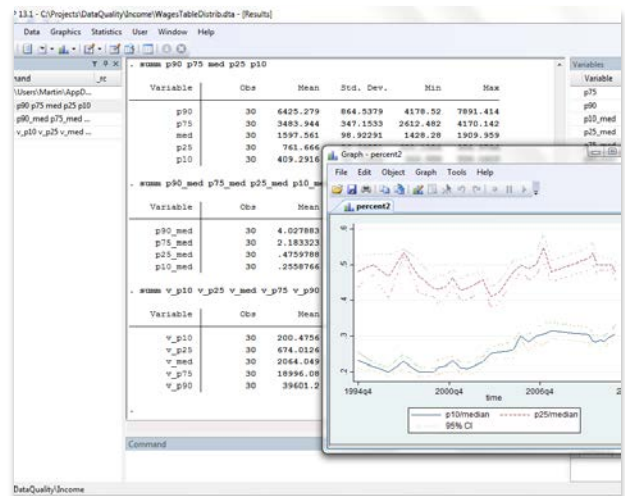
Cross-sectional econometric methods

Course Overview

This course covers the basic data and statistical techniques that will be used in the following modules.

Course content

- The Classical Linear Regression Model;
- Violations of the classical linear regression model;
- Instrumental variables;
- Limited dependent variables.

Panel Data Methods

Course Overview

In order to track well-being of households and individuals over time it is essential to use panel data. This course provides the basic tool-kit for analysing "cross-sectional" panel datasets like the National Income Dynamics Survey (NIDS).

Course content

The course covers:

- First differencing;
- Fixed effects and random effects estimation;
- Transition matrices;
- The problem of non-random attrition.

Prerequisites

Course participants should be familiar with Stata and with the basic statistical tools taught in the "Cross-sectional econometric methods" course.

Participant Comments

"The material is relevant as I am going to use it for our surveys, especially the QLFS panel. I believe there is a lot to gain from this course and I know that I will be using the skills I have acquired in my work. The quality of teaching was high and lecturers were very good at interacting with the class."
(Phanuel Moroe, Statistics South Africa)

"I feel my knowledge of panel data analysis has been expanded by this course. I know I will use the material in the future. I thought both that the teachers could explain concepts well and that the help I received during the tutorials was excellent."
(Ntombezinhle Nzama, Statistics South Africa)

Complex Survey Methods

Course Overview

The information on which we base our analyses comes from surveys which typically have a complex design. This means that we need to take care to analyse them to ensure that we get accurate, nationally representative results.

Course content

The course will

- Outline the theory of weighting, clustering and stratification;
- Discuss how social surveys are practically implemented in South Africa;
- Introduce the survey analysis tools available in Stata;
- Explain how to get estimates from sample surveys that are representative of the population;
- Show how to calculate the correct standard errors for such estimates.

Prerequisites

Course participants should be familiar with Stata and with the basic statistical tools taught in the "Cross-sectional econometric methods" course.

Group work in the 2014 course

Participant comments

"This is a very relevant course for students, researchers as well as policy makers. This course would not have come at a better time for me." (anonymous)

"It is an informative course that's gives insight into complex surveys. It enables us to understand the importance of sample design when performing an analysis and even though you may not deal with the methodology part you get to understand all that goes in to data cleaning." (anonymous)

"Very valuable material transferred in an interactive setting that promoted critical engagement and learning." (anonymous)

Social Welfare Measurement

Course Overview

This course will introduce the key concepts in measuring income, expenditure, poverty and inequality. There will also be a strong practical component where participants will use survey data to undertake welfare measurement and analysis.

Course content

- Introduction to the measurement of income and expenditure;
- Measuring poverty and poverty lines;
- Practical issues in measuring poverty;
- Measuring Inequality;
- Practical issues in measuring inequality;
- Asset indices as alternative measures of well-being;
- Practical issues in creating and using asset indices.

Prerequisites

Course participants should be familiar with Stata and with the basic statistical tools taught in the "Cross-sectional econometric methods" course.

Participant Comments

"The course was excellent. While the pace is quite fast, mainly because a lot of material is compressed into two weeks, I found that it was delivered in a manner that made it easy for me to grasp the concepts. This is mainly a reflection of the high quality of teaching. Since I come from the Poverty and Inequality division of Statistics South Africa, I will definitely use the material covered in the course. Actually, I recommend it for everyone in the division."
(Sandile Simelane, Statistics South Africa)

"I found the course very interesting and I have acquired new data analysis skills. The lectures were well structured and the content was detailed. I am interested in pursuing a PhD related to labour economics and poverty reduction and, as a result, the entire course was very useful. Of special mention was the lecture on asset indices as well as other non-money metric measures of well-being. The quality of teaching was superb. I think that this course was well executed and I wouldn't change anything."
(Rejoice Mabhena, Masters student UKZN)

Applied Labour Economics

Course Overview

Unemployment, low wages, low skills and discrimination are key development challenges in building a more inclusive society. In this course we focus specifically on labour market surveys and how to analyse them.
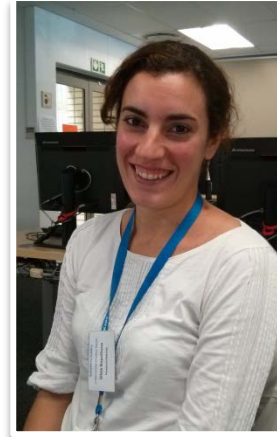
Course Content

- The theory of labour demand and supply;
- The role of education and human capital in wage determination and employment outcomes;
- The role of trade unions;
- Discrimination in the labour market;
- The public sector;
- Transport to work;
- The impact of minimum wages.

Prerequisites

Course participants should be familiar with Stata and with the basic statistical tools taught in the "Cross-sectional econometric methods" course.

.

Participant comments

"This is a good overview on labour market issues in South Africa. Beginning with the theory of labour demand and supply, and human capital, specific South African issues such as discrimination, transport costs and the role of unions are addressed. We had the opportunity to analyse data so that we were able to improve our Stata skills while finding statistical evidence of what we are studying!" (Silvia Napolitana, PhD student, Sapienza University of Rome)

"The practicals were useful as it allowed me to work with real data, and gave me good insight into the theory. I also liked the models that Vimal did on labour demand, labour supply and minimum wage. I would have liked more focus on the topics covered in the first two days - Labour Demand, Labour Supply and Human Capital; they were very useful. The search frictions module was the most interesting. I would recommend this course because the content is relevant and is pitched at the appropriate level for people in the field with work experience." (Teboho Qholosha, Eastern Cape Socioeconomic Consultative Council)

Consumption and Microeconomic Theory

Course Overview

Consumption data (as collected in Income and Expenditure Surveys or Living Conditions Surveys) is central to the measurement of poverty and inequality. In this course we also consider how to compare well-being across different types of households and individuals.

Course Content

- Measuring Consumption;
- The consumer demand model;
- Engel curves;
- Demand systems;
- Social influences on consumer choice, e.g. conspicuous consumption;
- Life-cycle considerations;
- Puzzles in the relationship between micro- and macro-aggregates.

Prerequisites

Course participants should be familiar with Stata and with the basic statistical tools taught in the "Cross-sectional econometric methods" course.

Participant comments

"It was helpful to learn how to use both non-parametric and parametric methods to measure consumption. On a personal level it was interesting to learn about conspicuous consumption and whether it occurs in my own life. I concluded "Nope, definitely not" as I am investing in the education of 3 dependants! At the end of it all, I feel I have learnt enough from the course to write a research paper." (Patricia Koka, Statistics South Africa)

"The course provided new knowledge but it also refreshed my memory of some of the theories (such as the Engel and Rothbarth methods) that I learned during my undergraduate studies. Proving these theories using real life data – The Living Conditions Survey - and understanding why the National Accounts differ from the LCS was fascinating for me. I am looking forward to applying my knowledge in analyzing the LCS 2014/15 data and producing detailed and informative reports for our Statistics South Africa data users." (Thapelo Tshabadira, Statistics South Africa

Survey Data Analysis for Development

About the organisations presenting the post graduate diploma

SALDRU (The Southern Africa Labour and Development Research Unit) is the premier research unit analysing poverty and inequality in South Africa. SALDRU managed the first nationally representative survey run in South Africa in 1993 and is currently managing the National Income Dynamics Study on behalf of the Presidency.

DataFirst is South Africa's premier data service, disseminating over 200 studies to researchers throughout the world. It has run workshops on data curation and data quality for many African national statistics agencies.

The **School of Economics** at UCT is the top-rated Economics Department in Africa, with a particularly strong record in applied work through research units like SALDRU.