

**Department of Science and Technology Research Seminar**  
***Spatial measures of socio-economic inequality in South Africa***

**The Human Sciences Research Council (HSRC)**  
**Southern African Social Policy Research Institute (SASPRI)**  
**Institute of Social and Economic Research (ISER) Rhodes University**

**Date:** 3<sup>rd</sup> March 2015  
**Venue:** 12<sup>th</sup> floor, Video Conference Room, HSRC, Cape Town  
Video Conference Room, HSRC, Pretoria  
Video Conference Room, HSRC, Durban

**Purpose**

Drawing upon recent and ongoing research in South Africa, this workshop seeks to share knowledge about the development of new measures of spatial inequality and their application as explanatory variables in order to better understand outcomes at both the individual level (e.g. people's attitudes towards inequality and options for redress) and the area level (e.g. hotspots of social unrest and violent crime).

**Background**

Almost two decades after the end of apartheid, South Africa continues to be characterised by very high levels of poverty, deprivation and inequality (Leibbrandt, Woolard, Finn, & Argent, 2010). It has been shown that poverty and deprivation are spatially differentiated, with the highest levels of both occurring in the former homelands and, to a lesser but still significant extent, in urban informal settlements (Noble & Wright, 2013). In terms of income inequality, South Africa's Gini coefficient of 0.7 is one of the highest in the world (Alexander, 2010; Leibbrandt et al., 2010; UNDP, 2013) and, in contrast to some countries in South America where the Gini coefficient has been falling in recent years (Gasparini, Cruces, Tornarolli, & Marchionni, 2008; Gasparini & Lustig, 2011; Lustig, Lopez-Calva, & Ortiz-Juarez, 2012), South Africa's has remained persistently high (Leibbrandt et al., 2010).

Internationally, persistent inequality, rather than poverty per se, is increasingly regarded as a major correlate of various social ills (Kaufmann D, Kraay A, & M., 2010; Wilkinson R & Pickett K, 2010). In South Africa this is particularly the case in respect of social unrest and violent crime. For example, the escalating service delivery protests (particularly in urban informal settlements) have been attributed to, among other things, stark socio-economic inequalities between different sections of the population and between different geographical areas (Alexander, 2010). However, this assertion has so far only limited empirical validation (Noble & Wright, 2013). Similarly, although there is a growing body of international evidence that supports the contention that inequality is an important factor in crime causation (e.g. Bourguignon, 1999; Leigh, Jencks, & Smeeding, 2009; Lynch et al., 2001; Sampson, 2006; Sampson & Wilson, 1995; UNODC, 2011; Wikstrom, 2006a; Wikstrom & Treiber, 2009), there is very little empirical evidence from within South Africa, the main exception being a study based upon data for the year 1996 (Demombynes & Ozler, 2006).

The lack of empirical evidence linking socio-economic inequality to social unrest and violent crime in South Africa should not be read as a rejection of such relationships, but rather as an outcome of the lack of adequate data on what one might term the "lived experience of inequality".

The mechanisms through which a person's lived experience of socio-economic inequality may serve to encourage particular forms of action, whether this be involvement in violent crime, participation in (peaceful or non-peaceful) public protests, or other forms of demonstration, are indeed complex. It could be argued that people's experience of inequality plays an important role in shaping their beliefs as to the sort of society in which they may wish to live, and the means through which they aim to achieve that goal. Given that people's experience of inequality is likely to influence their attitudes towards inequality and subsequently their propensity to engage in (legal or illegal) 'action responses' to inequality (Wikstrom, 2004, 2006b), there is a pressing need for research that investigates the extent to which individuals experience socio-economic inequality as they go about their daily lives. People may be exposed to inequality in a variety of ways and settings. Inequality may be apparent between different broad sectors of the population, such as between gender groups, racial groups or age groups. It may be apparent at a very local level, such as between different members of the same household, immediate family, extended family or friendship network, and may be apparent between neighbours living in the same street or village, or between different geographic communities. In a globalising world characterised by mass media, inequality may be apparent between different provinces, countries or even continents.

An individual's first-hand experience of inequality may be shaped both by the degree to which they come into personal contact with those from the opposite ends of the socio-economic spectrum, and also by the stark visual signs of inequality that do not involve direct personal contact. For example, a wealthy person driving along a highway may observe the highly deprived informal settlements without actually coming into personal contact with the residents of those settlements. Similarly, a poor person may travel through or spend time in affluent neighbourhoods whilst seeking work and thus observe the stark visual signs of affluence, but with little or no personal interaction with the affluent residents of those neighbourhoods. People's first-hand experience of inequality is therefore contoured by the geographical settings in which they live, work, socialise and travel.

Given that people generally carry out their routine daily activities within fairly limited geographical spaces (Johnston & Pattie, 2011), a measure of the lived experience of inequality must reflect the context of *place*. By overlaying the spatial patterning of people's routine daily activities upon the spatial configuration of poverty and affluence in the areas that they inhabit or may visit, a measure of spatial inequality has been developed that is described as a geographical measure of the 'lived experience of inequality'. This new measure is currently being used as a neighbourhood level explanatory variable for investigations into people's attitudes and into the drivers for various social problems.

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## PROGRAMME

Rapporteur: *Prof. John Seager, Freelancer*

Chair: Dr Gemma Wright, Research Director, Southern African Social Policy Research Institute (SASPRI)

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08:00 - 09:00 Registration, Tea & Coffee

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09:00 - 09:10 Introduction

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09:00-09:10 ***Welcome and Introductions***

Dr Temba Masilela, HSRC and Prof Robert van Niekerk Rhodes University

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09:10 – 10:30 Session 1

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09:10 - 09:30 ***Setting the Scene – the spatial patterning of poverty and multiple deprivation in South Africa***

Prof. Michael Noble, Executive Director of SASPRI, Honorary Research Fellow HSRC, Visiting Professor Rhodes University

Dr Wanga Zembe Director and Research Fellow SASPRI

This session will begin by introducing the concept of spatial inequality and its potential importance as an explanatory variable for understanding various outcomes at both the individual level (e.g. people's attitudes) and the area level (e.g. violent crime rates). An overview of the uneven spatial configuration of poverty and deprivation will then be provided based upon the results of the South African Index of Multiple Deprivation 2011 (SAIMD 2011). Through the use of colour-coded thematic maps, the analyses of the SAIMD 2011 will provide a clear *visual* picture of spatial inequality in South Africa, which will set the foundations for the *statistical* analyses presented in the following sessions of this workshop.

9.30 – 10.10 ***Measuring Spatial Inequality – An international perspective***

Dr. Chis Lloyd, Department of Geography and Planning University of Liverpool UK

Maps of deprivation indices and individual variables such as unemployment or health status provide a means of assessing the geography of inequality. In some societies, spatial inequalities may be greater in urban areas than in rural areas and the spatial scales over which these inequalities are found may change through time. Statistical measures of spatial inequalities can be used to summarise the spatial scale (e.g., how clustered are deprived areas?) and the magnitude of these inequalities (how large are differences between neighbourhoods?); such measures allow the assessment of how far spatial inequalities have increased or decreased as well as the ways in which they have changed. The paper will draw on research on spatial inequalities in Northern Ireland and England and Wales, with some comparative elements for South Africa and the United States. The analyses presented will show some of the ways in which spatial inequalities can be characterised using case studies to illustrate the methods. The paper will conclude by considering the value of comparative studies of spatial inequalities.

10.10 -10.30 **Q&A**

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10:30 -10:50 Tea break

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10:50 – 12:30 Session 2

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10:50 – 11:20 ***Developing a new spatial measure of exposure to socio-economic inequality in South Africa***  
Mr David McLennan, CASASP, University of Oxford

This presentation will commence with an overview of the various methodological approaches to measuring spatial inequality developed and applied internationally. The presentation will then focus on a particular statistical measure of spatial inequality that has been applied and further refined for the South African context which reflects people's *exposure* to socio-economic inequality as they go about their daily lives. The key components of the methodology underpinning this statistical measure of exposure to inequality will each be discussed in turn.

11:20 – 11:40 **Q&A**

11:40 – 12:10 ***The Results: how does a person's exposure to socio-economic inequality vary spatially according to where they live?***

Mr David McLennan, CASASP, University of Oxford

This presentation will focus specifically upon the results of the statistical measure of exposure to inequality discussed in the previous session. Analyses will be presented to demonstrate how people's exposure to inequality varies spatially according to where within South Africa they live. Case study maps will be used to highlight how people's exposure to inequality varies according to the type of municipality they live within, but also according to where *within* the municipality they live.

12:10 – 12:30 **Q&A**

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12:30 – 13:30 LUNCH

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13:30 – 14:30 Session 3

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13:30 – 14:10 ***Are people's attitudes towards inequality and options for redress influenced by their exposure to inequality?***

Mr Ben Roberts, HSRC & Mr David McLennan, CASASP.

This presentation will highlight how the new statistical measures of exposure to inequality can be used to better understand people's attitudes towards inequality and their attitudes towards potential options for redress. A linked dataset consisting of individual level attitudinal data from the South African Social Attitudes Survey (SASAS) and the area-level exposure to inequality measures has been created and a series of statistical models developed to test for significant effects on a selection of dependent attitudinal variables. This presentation will provide an overview of the data linkage and model development phases, before turning to present and discuss the headline results from the modelling output.

14:10 – 14:30 **Q&A**

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14:30 – 16:00 Session 4

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14:30 – 15:50 ***Are neighbourhood crime rates influenced by residents' exposure to inequality?***  
**An brief presentation followed by a panel discussion**

**Panel: Chris Lloyd; Hangwelani Hope Magidimisha; David McLennan; Ben Roberts; Robert van Niekerk**

The presentation will introduce the potential value of the exposure to inequality measures for better understanding neighbourhood vulnerability to violent crime. Drawing upon emerging results from an ongoing research project, the presentation will present an initial descriptive account of the commonalities and differences in spatial configurations of violent crime rates, poverty rates, and levels of exposure to inequality across South Africa.

*Panel and Audience discussion on the way forward*

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15:50 – 16:00 Closure

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15:50 – 16:00 Dr Gemma Wright, Research Director, Southern African Social Policy Research Institute (SASPRI)

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## **Biographies**

### **Dr Temba Masilela**

*Dr Temba Sipho B. Masilela* is the Deputy CEO of Research at the Human Science Research Council (HSRC), South Africa. His wide-ranging research interests include social policy, public management reform, social innovation, research communication, the research-policy nexus, and stakeholder engagement. He was the founding director of the Policy Analysis Unit at the HSRC and was previously the executive director of the Policy Analysis and Capacity Enhancement cross-cutting programme at the HSRC.

### **Dr Chris Lloyd**

*Dr Chris Lloyd* is a Senior Lecturer in Human Geography. His research focus is on spatial data analysis, and in particular on local spatial statistics and the exploration of spatial scale. He has a particular interest in the conceptualisation and measurement of residential segregation, and in the analysis of spatial inequalities more generally.

### **Ms Hangwelani Hope Magidimisha**

*Ms Hangwelani Hope Magidimisha* is a registered professional planner who is based in the HSRC's Democracy, Governance and Service Delivery research programme. She has recently submitted her doctoral thesis in Town and Regional Planning at the University of KwaZulu-Natal on the topic of spatial inequality in service delivery in Vhembe District Municipality, Limpopo. She was also part of the ESRC Pathfinder project that was recently completed by Oxford University and the HSRC on spatial inequality and attitudes to inequality in contemporary South Africa.

### **Mr David McLennan**

*Mr David McLennan* is a senior research fellow at the Centre for the Analysis of South African Social Policy (CASASP), University of Oxford. His primary research interest is in the spatial distribution of poverty and deprivation at small area level within South Africa and the UK. He has extensive experience of working with large national individual-level administrative and Census datasets.

### **Prof. Michael Noble**

*Prof Michael Noble* is executive director of the Southern African Social Policy Research Institute (SASPRI), a visiting professor at Rhodes University and an honorary fellow at the Human Sciences Research Council. He is also emeritus professor of Social Policy at the University of Oxford in the UK. His main research interests are in poverty, deprivation, inequality and income maintenance policy particularly in sub-Saharan Africa. He specialises in quantitative research methods and is committed to evidence-informed policy making.

### **Mr Ben Roberts**

*Mr Ben Roberts* is a research specialist in the Democracy, Governance and Service Delivery unit at the HSRC. He has a BSc in town and regional planning (*cum laude*) from the University of the Witwatersrand and an MSc in urban and regional planning (development) (*cum laude*) from the University of Natal. Before joining the HSRC, he was research fellow in the Population and Poverty Studies Programme at the School of Development Studies at the University of Natal. His areas of research interest include the analysis of poverty and inequality dynamics, sustainable livelihood development, poverty reduction strategy papers (PRSPs), and monitoring progress towards the Millennium Development Goals (MDGs). More recently, he has conducted poverty and inequality analysis for Namibia's MDGR, run training on national poverty line specification in Zimbabwe, and participated in a scoping exercise to help inform the design of DFID's envisaged regional hunger and vulnerability programme for Southern Africa.

### **Prof. John Seager**

*John Seager* is a freelance research consultant with over 30 years public health research experience in Africa. His research has covered AIDS and development, tuberculosis, diabetes care, urban health systems, and social determinants of health. He obtained a PhD in Ecology and Population Dynamics at the University of Wales and holds positions as an extraordinary professor at the University of the Western Cape and the University of Stellenbosch. His main research interest is social determinants of health among the poor in developing countries. Recent work includes health systems evaluation, HIV and AIDS, homeless populations and social aspects of climate change. Prof. Seager serves on the editorial advisory board of Development Southern Africa and is a reviewer for local and international journals. His publication record spans the authoring and co-authoring of more than 60 journal articles, 50 research reports and 100 presentations at scientific meetings.

**Prof. Robert van Niekerk**

*Robert van Niekerk* is the director of the Institute of Social and Economic Research and associate professor of Social Policy at Rhodes University. His research, teaching and publication cover the institutional history, ideologies and understandings of social policy and social change in South Africa. Prof. van Niekerk is currently the project lead researcher (or co-leader) on several research projects, including a multi-country large-scale study on the developmental state and social policy; a research programme on health policy and private medical practitioners; and a research study on the social policy positions of political parties and the views of social citizenship and the post-apartheid good society that those social policy positions reflect.

**Dr Gemma Wright**

*Gemma Wright* is SASPRI's research director. She is also a professor extraordinarius at the Archie Mafeje Research Institute at the University of South Africa (UNISA), a research associate at Rhodes University, and a research fellow at the Centre for International Education at the University of Sussex in the UK. Her research interests include poverty, child poverty, and social security policy.

**Dr Wanga Zembe**

*Dr Wanga Zembe* is a director and research fellow of SASPRI. She is also a senior scientist at the Medical Research Council and has research experience in child poverty and child health. Her main interests are research and teaching in social policy, specifically as these relate to poverty and inequality.