SOCIAL WELFARE POLICIES AND CHILD POVERTY IN SOUTH AFRICA: A MICROSIMULATION MODEL ON THE CHILD SUPPORT GRANT.

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DECLARATION

I declare that Social Welfare Policies and Child Poverty in South Africa: a Microsimulation Model on the Child Support Grant, has not been submitted before for any degree or examination in any university, and that all the sources I have used or quoted haven been indicated and acknowledged by complete list of references.

Mulugeta Fitamo Dinbabo

Signature ________________

September 2011.

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KEY WORDS

- Child
- Distribution
- Grant
- Justice
- Means test
- Microsimulation
- Modelling
- Policies
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- South Africa
- Universalising
- Welfare

ABSTRACT

Understanding and explaining the relationship between social welfare policies and poverty across the world remains a significant challenge that has raised intense scholarly debate. A number of suggestions have been offered on how to measure poverty in its variety of guises, ranging from absolute poverty to relative poverty to multidimensional models.

In line with Rawls' theory of justice and the conceptual framework of a rights-based approach, this research study seeks to analyse the extent to which social welfare policies, in particular the Child Support Grant, has an impact on poverty and the inequalities of people living in households with children in South Africa.

Quantitative methods of research have been applied throughout the study and measurement of poverty has been made using an absolute poverty line of R450 per capita per month. The South African microsimulation model (SAMOD) was used to analyse the various scenarios of the social policies. In addition to the generally used social and demographic variables, the SAMOD database contains detailed information on households related to five areas: income, consumption, taxation, participation in various social transfers and job market position. It is also based on the statistical data from the South African 2000 and 2005/6 SA Income and Expenditure Surveys and the 2000 and 2006 Labour Force Surveys. The range of possible social and economic changes that can be modelled is defined by the information available on the microsimulation units in the database. In general, data entry and analysis has been done using statistical software STATA version 10.1.

The study assessed the extent of child poverty in South Africa using five different policy scenarios, and modelled the impact on poverty and inequalities of people living in households with children using the Foster-Greer-Thorbecke (FGT) index of poverty measurement, including poverty rate P0, (headcount index ratio), poverty gap index P1, (the depth of poverty), and the severity of poverty P2 (squared poverty gap index). Societal welfare inequalities have been measured using the Gini co-efficient. In general, the scenario analysis was based on the 2007 population baseline and 2008 government policy rules.

The results of the study clearly indicate that there is a positive correlation between cash transfer (Child Support Grant) and a reduction in poverty and the inequalities of people living in households with children in South Africa. An increase in the Child Support Grant *amount and the number of child beneficiaries, in modelling, produced a positive effect in addressing increasing child poverty and vulnerability. In addition, the research process identified four interrelated gaps that hinder the successful implementation of the social welfare policies underlying the Child Support Grant to reduce the poverty and inequality profile of people living in households with children in South Africa. First, inadequate understanding of the constitutional rights of the child exists. Second, failure to use proven best practice of institutional arrangements and implementation modalities was identified. Third, lack of political will for the championship of a universal basic income grant (UBIG) is present. Fourth, insufficient research, monitoring and evaluation (M&E) and dissemination of best practices is done. Within the context of the abovementioned analysis, the study finally brings into focus general observations gained from the investigation and provides recommendations to policy makers and other stakeholders.*

CHAPTER-1: INTRODUCTION

The day will come when nations will be judged not by their military or economic strength, nor by the splendour of their capital cities and public buildings, but by the well-being of their peoples: … by the provision that is made for those who are vulnerable and disadvantaged; and by the protection that is afforded to … children. (UNICEF, 1998:1)

1.1. Background

Understanding and explaining the relationship between social welfare policies and poverty across the world remains a significant challenge that has raised intense scholarly debate. A number of suggestions have been offered on how to measure poverty in its variety of guises, ranging from absolute poverty to relative poverty to multidimensional models (Atkinson, 1991; Bigsten, 1983; Sen, 1999; Sen, 2000; Townsend, 1979; World Bank, 1998; World Bank, 2000). The declaration of the United Nations World Summit on Social Development, in Copenhagen, also led to extensive discussions about how social welfare policies help to reduce poverty and thereby lead to social transformation and sustainable development (Midgley, 2001).

The impact of social welfare policies on child poverty, inequity and social transformation has also in recent years become a higher priority on the policy agenda since the declaration of the United Nations Convention on the Rights of the Child. This is because children are regarded as the most vulnerable in society (September, 2006; UNICEF; 1998 UNICEF, 2009; WHO, 2003). In this regard, Ray (1998) argued that child welfare in a society is an index of the social and economic development of that society. According to Ray, the more important reason why child welfare has to be monitored is because children's contribution to the society in adulthood is determined to a large extent by their treatment during their childhood.

A number of South African researchers in the field (Barnes et al., 2009; Bray & Dawes, 2007; Coetzee & Streak, 2004; Dawes, 2005, 2006; Lund et al., 2008; Noble et al., 2007; September, 2006; Sloth-Nielsen, 2004, Wright et al., 2009a, 2009b) have proposed that poverty reduction, equality and social transformation strategies should focus strongly on ensuring children's rights by addressing the key issues of deprivation and the protection of children and their families. These researchers maintained that many of the most serious problems facing contemporary South Africa have their roots in child poverty

This research, using a South African microsimulation model (SAMOD), seeks to explore the relationships between social welfare policies and child poverty in South Africa. The overall aim of the research is to analyse the extent to which social welfare policies, and in particular the child support grant and hypothetical variants of this grant, have an impact on child poverty in South in order to better inform the policy debate on how child welfare can be improved.

This chapter offers an overview of social welfare policies and child poverty in the context of South Africa. In the following sections of the chapter, the study presents (a) contextualisation of the situation of children in South Africa; (b) background/rationale of the study and logical explanations for the research; and (c) a discussion of the problem statement, hypothesis, research questions, and aim and objectives of the research. The chapter concludes with a set of outlines of the chapters of the current thesis, and contains the topics which will be addressed within this research.

1.2. Contextualisation

South Africa is characterised by extremes of wealth and poverty and has one of the most unequal income distributions in the world (Angus. 2003; Simkins, 2005; Terreblanche, 2002, World Development Indicators, 2006). According to the latest survey of the Organisation for

Economic Co-operation and Development (OECD), both inequality and poverty in South Africa have increased between 1993 and 2008. The survey indicates that SA's Gini co-efficient has increased from 0.66 in 1993 to 0.70 in 2008 (OECD, 2009). According to the recent OECD report, Africans are very much poorer than Coloured[1] people, who are very much poorer than Indians and others, who are poorer than Whites. The country is classified as a middle-income developing country (World Bank, 2006). Many researchers have argued that, in a very unequal society like South Africa, the development and implementation of a social welfare system can play a stabilising role and is also a mechanism for distribution of national income (Le Roux, 2003; Makino, 2004, OECD, 2009; Thurlow, 2002).

The total population of South Africa is estimated at 49.32 million, of whom approximately 48% are male and 52% are female. Population groups comprise African (79.3%), Whites (9.6%), Coloureds (9.1%) and Indians (2.6%). The rate of population growth of the country is 1.07% per annum and significantly lower than that of the rest of sub-Saharan Africa

In the past few years of the post-apartheid regime, profound political and social changes have been seen in South Africa, with the government taking the lead in introducing significant social welfare policy changes (Makino, 2004; September, 2006). Major objectives of social welfare policies in South Africa are alleviating poverty and enabling the previously disadvantaged communities to have access to basic social services (Van der Berg, 1998; White Paper for Social Welfare, 1997). So far, many social welfare policies have been developed and the overall view of these is very positive (September & Dinbabo, 2008). These include the 1997 White Paper for Social Welfare; the Financing Policy for Developmental Social Welfare Services of 1999; the 2004 Policy on Financial Awards to

[1] In South Africa during the apartheid era, the population was classified into four groups: African, White, Coloured and Indian. The Coloured definition occupied an intermediary position between the African and White definitions in South Africa

Service Providers and the Service Delivery Model for Developmental Social Services. However, in spite of the gains that have been made, South Africa still remains one of the most unequal societies in the world in terms of income (World Bank, 2006).

In 2008, the post-apartheid government undertook a detailed assessment, titled the Fifteen Years Review, on governance, the social sector, the economy, justice, crime prevention, security, and so on. The main purpose of the review process was to assess progress since the attainment of democracy. Through transformed institutions and new polices, the government sought to align the country's development with the new democratic constitution, dealing with the legacy of apartheid and integrating the country in a challenging global environment (Fifteen Years Review, 2008).

Bhorat and van der Westhuizen (2008) noted that in the post-apartheid government there had been a reduction in both absolute income poverty (the income of poor people) and relative income poverty (the poverty gap, that is, the gap between the average income of poor people and the poverty line). According to Bhorat and van der Westhuizen, post-apartheid government's 15 year review document indicates that Coloureds saw a significant and substantial decline in mean poverty gap levels. For Africans, relative poverty levels declined by 6% to 7% points for both poverty lines. Africans, however, also account for a disproportionate share of poverty – although 77% of the population in 1995 and 79% in 2005, they accounted for 93% of those living on less than R322 a month. Bhorat and van der Westhuizen (2008) further indicated that Indian poverty increased, although the numbers were small. In general, huge differences in provincial levels of poverty as well as different rates of change between 1995 and 2005 were apparent. In both years, the Western Cape and Gauteng headcount rates were lower than the national averages. Gauteng and KwaZulu-Natal experienced significant increases in both poverty headcount levels and the poverty gap, and there was a small increase in Limpopo. All other provinces experienced a decline in poverty headcount rates, with the Free State experiencing the largest decline, more than 23%.

A number of studies have indicated that child poverty in South Africa is exceedingly high (Barnes et al., 2009; Coetzee & Streak, 2004; Lim, 2006; Noble et al., 2007; Streak, 2003; UNICEF South Africa, 2005; Wright et al., 2009b). In 2005, two thirds (11.9 million) of children in South Africa lived in households that had an income of R1, 200 per month or less. This measure takes into account all sources of income, including social grants. Rates of child poverty differed across the country. In 2005, the Limpopo Province had the highest rate of child poverty, estimated at 83%. The Eastern Cape Province followed closely at 80%. KwaZulu-Natal, Mpumalanga, and the North West Province also had higher rates of child poverty than the national average. Nearly all poor children (95%) in South Africa are Africans (Meintjes, Leatt, & Berry, 2006). A 2006 empirical study on the level of child poverty clearly indicated that poverty was deepening in various parts of South Africa. According to Lim (2006), over 13 million children lived on under R430 per month. Of these, 9.7 million lived, in 'dire' poverty, on under R215 per month. Lim further argued that the high prevalence of HIV/AIDS among caregivers had worsened the challenges of child poverty.

As part of its social welfare policy and poverty reduction strategy, the government is presently implementing a social security system. The types of social assistance provided include an old- age grant, a disability grant, a war veterans' grant, a foster-child grant, a care dependency grant, a child support grant and a "grant in aid" (Department of Social Development, 2006). According to the South African Social Security (SASSA, 2009), there has been an increase in social security grants in the past few years and more than 13 million South Africans are receiving social grants in one way or another.

Even though the system of social grants continues to expand, some researchers argue that, as a poverty reduction strategy, means testing is inefficient and costly to administer; they often fail to reach those in need, due to low 'take-up' as a result of ignorance or fear of stigma. In addition, means testing creates a 'poverty trap', creating disincentives to work. People who have an increase in earnings suffer from the withdrawal of benefits as their earnings increase (Budlender et al., 2005; De La Briere & Rawlings, 2006; Hall, 2005; Le Roux, 2002). Considering the limitation of the means testing, a basic income grant (BIG) was proposed by the Committee for a Comprehensive Social Security (Taylor, 2002). The estimated net cost for a BIG was R15 billion per year. In order to close the gaps, the Taylor Committee recommended the introduction of a basic income grant (BIG), that is, a grant of R100 per person per month for every South African citizen and permanent residents regardless of age or income level (Taylor, 2002). However, it was vetoed by the government, apparently because it was assumed that it might create dependency and become unsustainable because of high costs (Desai, 2005).

All this shows that, when it comes to social welfare policy implementation, many challenges still face the legislators, the judiciary, the executive branches of the government and South African society as a whole. The need for continuing social welfare policy reform processes and providing mechanisms for responding to child poverty in South Africa are critical for policy makers. In relation to the contextual factors discussed above, the following section reviews the critical points of current knowledge on social welfare policies and child poverty.

1.3. Situation of children in South Africa

***Demographic profile of children*:** According to Statistics South Africa (2009), children under 18 years constitute two fifths of the population in South Africa, that is, 18 292 million. Children therefore represent 40% of the population. Meintjes and Hall, (2009) indicated that there was a 4% growth in the child population from 2002 to 2007 (an increase of 760 000 children). The majority of children live in Kwazulu-Natal (22.4%), Gauteng (16%), Eastern Cape (16%) and Limpopo (13.3%). These are also the provinces with the largest rural populations. Boys (9 446 000 or 52%) and girls (8 846 000 or 48%) were almost equal in number (Statistics SA, 2009). Most children in the country are between 10 and 17 years of age. Children between 0 and 4 years represent 28% of the child population.

Care and protection profiles: Meintjes and Hall (2009) noted that the General Household Survey in 2007 identified approximately 3.7 million orphans (children without both parents) living in South Africa. The General Household Survey also indicated that the number of children who had lost both parents had increased over the previous five years (2002-2006), with approximately 700 000 more orphaned children in 2007 than in 2002. In 2002, amongst children between 10 and 17 years old, 3% had lost both parents. In 2006, this percentage had doubled to almost 6%. The results of the survey further indicated that in 2006 most of the orphans lived in the Eastern Cape and KwaZulu-Natal. Orphans were disproportionately represented among children (in 2006, 4% of African children had lost both parents, compared with 2% of Coloured children, and less than 0.5% of White children. Of further interest, during 2006, is that 77% of all orphans were of school-going age – seven years and above.

September and Dinbabo (2008) argued that poverty and unemployment are key concerns that impact on a family's capacity to care for their children. September (2006) noted that previous inequalities in education, health care and basic infrastructure have also contributed to the backlog in present services. The vulnerability of children, especially those living in poor areas, is compounded by HIV and AIDS. The following are some of the key reasons why children are at risk in South Africa.

***Poverty*:** Child poverty has been described as situations where children have insufficient resources to grow healthy and strong, obtain an education, and live in a healthy and safe environment in order to fulfill their potential. Where children are deprived of resources that are needed to help them become economically active citizens, they are living in poverty (Monson et al., 2006). High levels of unemployment also contribute towards children finding themselves in poverty-stricken situations.

The South African Constitution, 1996 Section 28(1) (b), provides that *"Every child has the right to family care or parental care or to appropriate alternative care when removed from the family environment"*. The new Children's Act of 2005 also seeks to provide services that primarily support families and communities to care for and protect children at risk. Where families and communities are unable or unwilling to take care of children, the Act provides for alternative care.

UNICEF (2007) indicated that children affected by HIV and AIDS are at an increased risk of losing the care of parents. They are more likely to be placed within their extended family. They also face several threats from HIV/AIDS itself, such as becoming infected or orphaned, and suffer the consequences that the illness brings to their families and communities (UNICEF, 2007). Some 4.7 million South Africans were estimated to be HIV-positive in 2001, according to figures released by the Department of Health in 2002. Of significance for children is that an estimated 3.2 million women (aged 15 to 49 years old) were living with HIV/AIDS. As a result, 89,000 children (about 7.5 % of children born in the year 2002) were infected with HIV. Because of the complex and dynamic inter-relationship between poverty, HIV/AIDS, and malnutrition, most of the 89,000 children who had contracted HIV in 2002 -- through mother-to-child transmission -- would have died before their fifth birthday

(Children's Institute, 2003). The report of the Children's Institute (2003) also added that during July 2002, an estimated total of 885,000 children in South Africa had lost a mother.

With regard to the birth registration in South Africa, Section 28(1) (a) of the Constitution provides that *"Every child has the right to a name and a nationality from birth"*. Parents and caregivers have a legal obligation to register the birth of a child so as to provide that child with an identity and a citizen's rights. However, birth registration is also regarded as an essential part of accessing social services and, in particular, social grants. According to UNICEF's State of the World's Children (SOWC) 2006 report, at the global level, millions of children are faced with "invisibility" and may be likely to disappear from official view if their existence and identity is not legally recorded by the state.

Section 29(1) of the Constitution provides that *"Everyone has the right to a basic education"* and that the state must make such education *"progressively available and accessible*". According to the 2006 General Household Survey report cited in Pendlebury and Rudolph, (2008) approximately 96% of children of school-going age (aged 7 to 17 years old) were attending some form of school or educational facility during the 2006 General Household Survey. In this regard, Chisholm (2007) argued that although this is a positive step in the right to education being realised, challenges in terms of infrastructural provisions, lack of safety in schools and the poor quality of educators frequently violate the realisation of this right.

A number of researchers (Haacker, 2002; Kirby, Laris, & Rolleri, 2007; UNAIDS, 2008) have indicated that the HIV/AIDS pandemic is one of the greatest threats to the realisation of child rights in South Africa and sub-Saharan Africa. Research by the Children's Institute demonstrates some of the multiple vulnerabilities faced by children before the death of caregivers. Children often take on the responsibility of caring for sick adults and are unable to attend school or study because of the difficulties at home. In short, children's experiences of orphanhood and its compounded vulnerabilities begin long before the death of a significant adult. Unsurprisingly, many of the subsequent experiences of children who have been orphaned are poverty-related – such as an inability to afford school fees and school uniforms, prolonged experiences of hunger, inadequate housing and poor access to water (Children's Institute, 2009). On the other hand, Meintjes et al. (2008) reported that although the government and civil society have expressed concern about the growing number of children living in child-headed households, there is little evidence to support this fear.

While lack of data makes it hard to give an accurate national picture of children in residential care, a sample study of 28 facilities in four provinces (Gauteng, KwaZulu-Natal, Limpopo and the Western Cape) by the Children's Institute (2007) revealed that 81% of children in these homes were between 6 and 18 years old; 2% of people over 18 years old continued to live at the homes; 17% of children under 2 years made up the remaining proportion; in most homes, children between 6 and 12 years old made up a little more than a third of the resident children; babies and toddlers predominated in homes providing residential care through foster-care or private-place-of-safety legislation. In these facilities, 89% of the resident children were under 5 years old, 53% of the children had at least one living parent and 34% of children were HIV positive (information was dependant on status being known and the completion of data by the facility).

All these factors show that, when it comes to social welfare policy implementation, many challenges still face the legislators, the judiciary, the executive branches of the government and South African society as a whole. The need for continuing social welfare policy reform processes and providing mechanisms for responding to child poverty in South Africa are critical for policy makers.

1.4. Rationale of the study

Different schools of thought have emerged in the past few decades and, accordingly, a range of views regarding social welfare policies and poverty are reflected by social science researchers. A great deal of literature exists on social welfare polices and poverty in the context of both developed and developing countries. The majority of South African authors of literature on the topic have examined socio-economic rights (Alston, 1998; Dews, 2006; Dutschke, 2006; Thomas, 2005), child poverty (Barnes et al., 2009; Bulender, Rosa, & Hall, 2005; Lund et al., 2008; Noble et al., 2007; Streak et al., 2009; Streak & Poggenpoel, 2005; Wright et al., 2009b); social welfare policies (Crook, 1997; Kenworthy, 1999; Lee, 1987; Lindbeck et al., 1994), and social security/basic income grant (Le Roux, 2002, 2003; Makino, 2004; Samson et al, 2002; Taylor et al., 2002).

The issue of social welfare policies in terms of responding to poverty has been subject to increasingly heated debate. On the one hand, analysts (Crook, 1997; Lee, 1987; Lindbeck et al., 1994) argued that social policy programmes do not, in fact, reduce poverty. According to Crook (1997), this is due to the fact that too little of the money reaches the poor. Lee (1987) argued that redistributive programmes foster dependency on benefits and thereby increase the poverty rate. Lindbeck et al. (1994) claimed that social welfare programmes undermine economic growth and thereby fail to reduce the number of poor in the long run. On the other hand, others have argued that social welfare policies lead to increased earnings and income, thereby decreasing poverty and inequity and bringing about social transformation (Gates, 1980; Le Roux, 2003; Makino, 2004; Samson, 2002; Samson et al., 2002; Seekings & Matisonn, 2003; Taylor et al., 2002).

Internationally, many research studies have been undertaken in the field of social welfare and poverty. For example, Kenworthy (1999) assessed the effects and extent of social welfare policy on poverty rates across 15 affluent industrialised nations over the period 1960-1991, using both absolute and relative measures of poverty. The analysis consisted of cross-sectional ordinary least squares (OLS) regressions of 1991 post-tax and pre-tax/pre-transfer poverty rates on three causal variables. These included social welfare policy extensiveness during 1960-1991, national wealth (GDP per capita) in 1960, and pre-tax/pre-transfer poverty rates in 1991. Kenworthy's empirical research results strongly supported the view that social welfare programmes reduce poverty.

In the African context, Tostensen (2004) undertook a study on the feasibility of social security systems in sub-Saharan Africa. Tostensen's research results show various social security arrangements in place in sub-Saharan African countries to mitigate the contingencies of their citizens, with emphasis on the masses of poor people, including the ways in which the poor themselves try to tackle unexpected adversity. Tostensen argued that, for a social security system to be feasible in the current circumstances of widespread economic crisis, formal and informal mechanisms will have to be combined. Benjamin et al. (2006) examined the relationship between poverty and child welfare in Nigeria, using the child labour survey. The results of the study indicate that the incidence of street children, lack of parental interest and regional differences are responses to poverty.

In South Africa, a number of researchers have also undertaken studies in the field of social welfare policies and poverty (Case et al., 2005; Lund et al., 2009; Meintjies et al., 2003; Samson et al., 2002, 2004). Grantham-McGregor et al. (2007) also undertook research on an intergenerational transmission of poverty in the context of South Africa. Regarding the Basic Income Grant (BIG), different studies have been done by Le Roux (2002, 2003) and Makino

(2004). Analysts in the field (Aguero et al., 2007; Faber & Wenhold, 2007) have undertaken studies on the impact of cash transfers on child nutrition. However, Makino (2004) observed that, except for a few studies, the issue of South African social security has been predominately dealt with from the economic/technical point of view, where main concerns are poverty alleviation effects or the fiscal impact of various policy options. Hence, Makino (2004) undertook a research project that aimed at understanding the political aspects of the BIG debate by looking at the process of "alternative specification". From the above analysis, it can be argued that that there is broad consensus among policy makers that expanding social assistance should be at the centre of policy intervention to address poverty.

Empirical studies on social welfare services for all vulnerable children have been done by Streak and Poggenpoel (2005). The result of their study indicates the importance of designing norms and standards for different social welfare service areas; the significance of quantification of various social welfare services that are needed by children and their respective families and provides a rationale for government in funding statutory children's services. Lim (2006) assessed child poverty in the context of the socio-economic rights enshrined in the South African Constitution. Lim concluded that all poor children in South Africa are denied human rights and the support to which they are constitutionally entitled. Therefore, he suggested that a reform of the current social assistance system is necessary to ensure that all poor children have access to social assistance grants. Streak et al. (2009), in a study using the Income and Expenditure Survey 2005/06, showed that child poverty is more extensive than adult poverty. Recently, various studies have also been conducted in the area of child deprivation by experts drawn from the University of Oxford's Centre for the Analysis of South African Social Policy (CASASP), the Human Sciences Research Council (HSRC) and Statistics South Africa (StatsSA). This includes The South African Index of Multiple Deprivation for Children 2001 at Datazone level and The South African Index of

Multiple Deprivation for Children 2007 at municipality level (Barnes et al., 2007, 2009; Noble et al., 2009; Wright et al., 2009a, 2009b).

Even though the aforementioned studies give some insight into the notion of social welfare policies and poverty, they rarely provide systematic analyses of existing social welfare policies, for instance, the Child Support Grant in terms of responding to child poverty. In addition, there have been very few studies that employ microsimulation techniques to analyse the impact of tax and benefit arrangements on child poverty. The literature on the Child Support Grant, child poverty and microsimulation is limited. In general, in South African research literature, there is little discussion on the relationship between the social welfare policies of the Child Support Grant and child poverty, using a microsimulation model. Therefore, a need exists for researchers to assess the interplay between the social welfare policies of the Child Support Grant and child poverty in South Africa in order to put an end to non-evidence-based policy development and give a new impetus to South African social sciences research. The existing studies rarely explain the problems of social welfare policies in terms of responding to child poverty. This weakness has made itself manifest in a wider research gap and demand a greater effort in investigation and analysis with a view to achieving a more accurate interpretation of these rapidly changing realities of social welfare policies and child poverty in South Africa.

This research goes beyond the scope of the aforementioned studies as it examines the relationship between social welfare policies of the Child Support Grant in terms of responding to the poverty and inequality profile of households living with or without children, through a microsimulation model and detailed case study of South Africa. SAMOD enables the simulation of reforms to tax and transfer policy and is a key tool to aid in the development of child-related policies in South Africa. It also helps to examine the impact of social grants on the poverty and the inequality profile of people living in households with children and the redistributive impact of the entire tax and transfer system. By simulating different policy scenarios, SAMOD helps to determine the most efficient policy to reduce child poverty and the cost and impact of policy reforms. The current study is relevant in the African context, in general, and South Africa, in particular, for at least three reasons. First, it provides a scientific explanation of social welfare policies and child poverty in terms of social transformation, using a microsimualtion model. Second, it is different from previous studies in that it has been based on five policy scenarios ariseing from various ideological bases. Third**,** the selected case study area, that is, South Africa, represents, to a large degree, the typical socio-economic and political problems facing other parts of the continent.

In line with the aforementioned Rawls' theory of justice and conceptual arguments, the relationship between social welfare policies, for instance, the Child Support Grant and child poverty, is examined in Chapter-7. The analytical tool of SAMOD was used in this study to analyse child poverty using different policy scenarios.

1.5. Problem statement

Despite the fact that the relevance of social welfare policies are indicated in the international and national human rights instruments such as the Universal Declaration of Human Rights (UDHR), adopted in 1948[2], the International Covenant on Economic, Social and Cultural Rights (ICESCR)[3] (1994), the UN Convention on the Rights of the Child (1989)[4], the African Charter on the Rights and Welfare of the Child (1990)[5] and the 1996 South African

[2] The Universal Declaration of Human Rights (UDHR) adopted in 1948.
[3] South Africa, which signed in 1994 but has not ratified, has a general clause on the right to "Social security, including social insurance" Article 9. Whereas, Article 10 (3) of the ICESCR requires state parties to undertake special measures of protection and assistance for children and young persons.
[4] The SA government signed and ratified in 1995, places the responsibility for the material well-being of the child primarily with his or her parents. Article 26 recognizes for every child the right to benefit from social security, including social insurance.
[5] State to provide financial support to parents in order to realise children's rights to nutrition, health, education, clothing and housing.

Constitution[6], and the Children's Act 2005, social welfare policy implementation has been a lot more challenging in terms of alleviating deep-rooted social problems in South Africa (September, 2006).

The government has implemented many policies to reduce widespread poverty, significant levels of income disparity, high levels of unemployment and crime, as well as HIV/AIDS (Niekerk, 2003; September & Dinbabo, 2008). As part of social welfare policies, the government of South Africa has defined four key policy documents developed since 1994. These include the 1997 White Paper for Social Welfare, the Financing Policy for Developmental Social Welfare Services of 1999, the Policy on Financial Awards to Service Providers 2004, and the Service Delivery Model for Developmental Social Services (Streak & Poggenpoel, 2005). The government also enacted a new comprehensive Children's Act 38 of 2005 and Act 42 of 2007. The primary purpose of the Act is to give effect to the rights of children as contained in section 28 of the Constitution as well as other international child rights instruments ratified by South Africa. The Children's Act includes a set of objectives which promotes the preservation and strengthening of families, constitutional rights and the well-being of children in line with the international instruments, and the strengthening and development of community structures which can assist in providing care and protection for children. It also provides for a comprehensive and co-ordinated approach to address poverty and current social problems, to protect children from discrimination, exploitation and any other physical, emotional or moral harm, and to recognise the special needs of children with disabilities. In general, the Children's Act addresses current social problems, especially alleviation of poverty and inequality, and promotes social transformation of children in South Africa (Children's Act 38 of 2005 and Act 42 of 2007).

[76] The SA Constitution includes the rights of everyone "to have access to Social Security, including if they are unable to support themselves and their dependants, appropriate social assistance.

Although social scientists have differing views about the nature of social welfare policies in terms of responding to poverty, a great number of authors (Haarman, 2000; Haarmann & Haarmann, 1998, 2006; Le Roux, 2003; Makino, 2004; Noble et al., 2007; Samson et al., 2002; Samson et al., 2004; Taylor et al., 2002) believe that social welfare policies play a critical role in addressing the basic survival of children living in poverty. The South African Constitution (Section 27 (1) (c), Section 27 (2), Section 28 (1), (b) and (c)) also ensures social security as a basic socio-economic right for all citizens in South Africa. However, the social security programme implementation excludes a large portion of society in South Africa. From the socio-economic rights perspective, exclusion often implies a right violated or not realised.

When it comes to the implementation of social welfare policies, particularly the Child Support Grant and child poverty reduction, clearly many challenges still face the legislators, the judiciary, executive branches of the government and South African society as a whole. The need for continuing the policy reform processes and providing sustainable mechanisms for implementation of these also constitute major challenges for social welfare policy makers. In sum, understanding the relationship between these policies and child poverty is not only of academic interest but also of critical importance for policy makers and requires empirical testing through scientific research. It is also imperative to ensure that the sectors on which the programme will impact are adequately prepared and ready for the extensive changes implied.

1.6. Research questions and hypothesis

1.6.1. Specific research questions

In the context of the research problem identified above, the main purpose of this research framework was to establish an interpretive theoretical and conceptual framework for a PhD thesis and provide an answer to the following general research questions:

- How does the Child Support Grant impact on the poverty and inequalities of households living with or without children (i.e. poverty rate (P0), poverty gap (P1), poverty severity (P2) and Gini co-efficient) in South Africa?

- What are the critical gaps in terms of implementing the social welfare policies of the Child Support Grant in response to the poverty and inequalities of people living in households with children in South Africa?

With the objective of ensuring a clear understanding throughout the research process, the following aim and objectives have been used throughout the research processes.

1.6.2. Aim and objectives

The overall aim of this study was to analyse the effectiveness and the extent to which social welfare policies, and particularly the Child Support Grant, deal with poverty and inequalities of people living in households with children in South Africa, in order to better inform the policy debate on how child welfare policies can be improved.

The study had the following objectives:

- To broaden the current knowledge on social welfare policies and to provide an adequate theoretical and conceptual framework for the research.

- To assess the various perspectives presented in the literature on the current knowledge on child poverty and cash transfers as well as outline the key framework of the Child Support Grant in South Africa.

- To present the concept and application of microsimulation in general, and SAMOD in particular, in assessing child poverty.

- To simulate and estimate the extent to which the different social policy scenarios pertaining to the Child Support Grant deal with poverty and inequalities of people living in households with children in South Africa.

- To provide recommendations regarding policy implications resulting from the research analysis.

1.6.3. Hypothesis

In the course of this research, the relationships between various policy scenarios of the Child Support Grant and the poverty and inequalities of people living in households with children in South Africa were analysed. Therefore, the following hypothesis was tested:

- The existing social welfare policies of the Child Support Grant are not optimal in responding to child poverty in South Africa.

1.7. Outlines of chapters

This study is divided into eight main chapters. The chapter progression for this study is presented here below and includes the following chapters:

Chapter I introduces the study and makes clear the gap between social welfare policies and child poverty. Thus, it highlights the contextualisation and rationale of the study. It also provides the problem statement, research questions, hypothesis, aims and objectives of the study.

Chapter II provides the theoretical and conceptual framework of the study. Its aim is to give a background to the study and build a logical framework for the research. This chapter will provide various perspectives of Rawls' theory of justice, social welfare policies and a rights-based approach framework for the research. This will help to launch the study by analysing applicable social welfare policies and child poverty in South Africa.

Chapter III gives the various perspectives of the literature consulted on the current knowledge on child poverty and cash transfers and presents a discussion of these perspectives. This helps in reducing the ambiguity and confusion in the literature and serves as the basis on which social welfare polices and child poverty is examined in the context of South Africa. Its aim is to give a background to the study and build a logical framework for the research. The review also provides an insightful exploration of related literature, exposes the underlying assumptions behind research questions, displays the research paradigm undergirding the study and guides the researcher towards identifying the research gaps.

Chapter IV presents an overview of background information about microsimulation. This chapter explores and provides important analyses of the dynamics, nature and application of the microsimulation model in the analysis of child poverty in general and in South Africa in particular. It also outlines, analytically and historically, the importance of microsimulation, which is being practiced in different parts of the world. This will help to analyse and understand the historical nature as well as the magnitude of child poverty in a more detailed way, using microsimulation in South Africa. The chapter also includes a discussion on the nature of, and gives an overview of key areas in, the use of SAMOD in the context of South Africa.

Chapter V provides a discussion about the research design and the analytical tools that have been employed throughout the thesis. The research philosophy, research strategy, and scenario settings are presented. In general, Chapter V presents the method and the analytical tools that have been used for determining the analysis of data, interpreting of results of data analysis, answering the various research questions and testing the research hypothesis in the study. The list of variables of the study, and their relevance in terms of measuring the various research questions and the hypothesis are provided in this chapter and different statistical tools are also discussed.

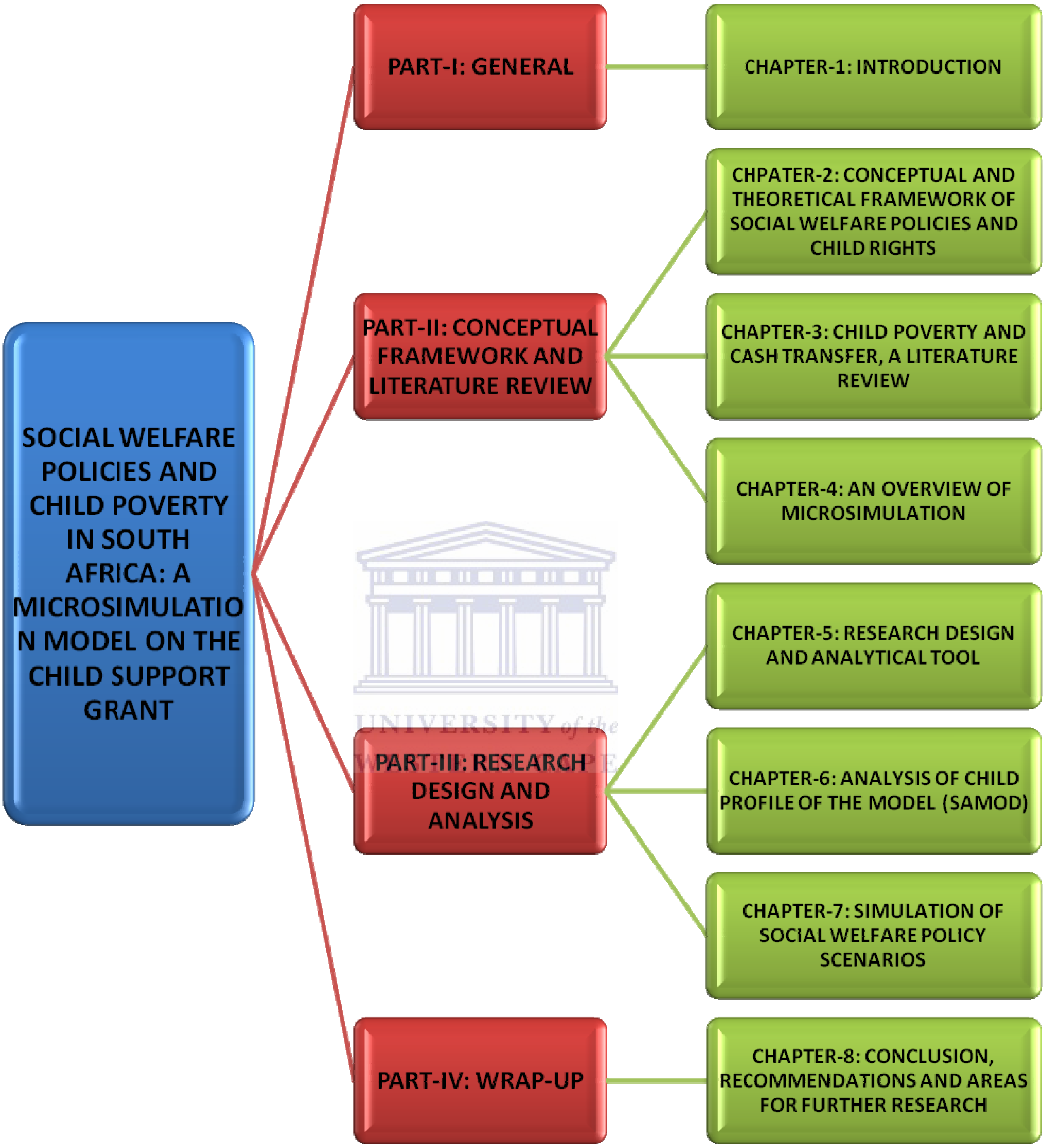
Chapter VI provides detailed demographical analysis of the child profile in SAMOD and estimates the reliability and plausibility of data used in the model. The chapter offers comparative and analytical information on the related social grants in South Africa as well. Chapter VI also gives analytical information on the types of child-related social assistance provided in South Africa, which includes the Foster Child Grant, the Care Dependency Grant and the Child Support Grant.

Chapter VII using SAMOD and various scenario options, it presents the result of simulation of the Child Support Grant in South Africa in terms of its contribution and response to the poverty and inequalities profile of people living in households with children. In this chapter, microsimulation that has been undertaken is described, and the results for five scenarios of possible Child Support Grant reform have been presented. Scenario I provides the modelling result of the poverty and inequalities profile of people living in households with or without children in the absence of a Child Support Grant. Scenario II offers the modelling result of the poverty and inequalities profile of people living in households with children under the 2007 population baseline and 2008 government policy rules, that is, the Child Support Grant given up to the age of 13 years and the policy rule that provides R210 per child per month. Scenario III presents the modelling result of the poverty and inequalities profile of people living in households with children under the 2007 population baseline and 2008 government policy rules, but with the Child Support Grant given up to the age of 15 years and the policy rule that provides R210 per child per month. Scenario IV analyses the result of changes in the poverty and inequalities profile of people living in households with children under the 2007 population baseline and 2008 government policy rules, but with the Child Support Grant given up to the age of 18 years and the policy rule that provides R210 per child per month. Scenario V gives the result of changes in the poverty and inequalities profile of people living in households with children by universalising the Child Support Grant up to the age of 18 years and applying the policy rule that provides R210 per child per month.

In this chapter, application of the Foster-Greer-Thorbecke (FGT) index of poverty measurement, including poverty rate P0 (headcount ratio), poverty gap P1 (the depth of poverty), and the severity of poverty P2 (squared poverty gap), is described. Societal welfare inequalities were measured using the Gini co-efficient. Statistical analysis software, called STATA, was used for the statistical analysis. In general, Chapter VII presents the detailed results of research that was done in the course of this study. Chapter VII also gives the result of simulation modelling exercise for funding for a universal child support grant.

Chapter VIII provides recommendations concerning policy implications emanating from this social science research in South Africa. It also suggests possible measures that should be taken by the policy makers and all stakeholders to eradicate the constraints of social welfare policies and child poverty in South Africa. In addition, possible further potential research areas will be suggested. The logical relationship between various chapters of the thesis is presented in Figure 1:1 below.

Figure 2:1 Outline of the chapters and subtopics of this thesis.



CHAPTER-2: CONCEPTUAL AND THEORETICAL FRAMEWORK

Everyone has the right to have access to … social security including, if they are unable to support themselves and their dependants, appropriate social assistance (South African Constitution, 1996: Section 27 (1) (c) of the Bill of Rights).

2.1. Introduction

A great diversity of traditions contributed to the development of social welfare theories and policy implementation modalities. On the basis of these diverse approaches, different arguments have been provided and different methodological perspectives developed. In the context of this research, the Rawls' (1971) theory of justice is relevant and will act as the basis of the theoretical framework. The following section presents analyses of the main understandings of the Rawls' theory of justice, distributive justice and theory of relative deprivation, traces their main characteristics and practical applications, and indicates the relationship between social welfare policies and child poverty.

Major objectives of social policies in South Africa are alleviating poverty and enabling the previously disadvantaged communities to have access to basic social services. September and Dinbabo (2008) noted that, so far, many social policies have been developed and the overall view of these is very positive. They further argued that most of South Africa's social policies are also considered progressive and are aligned to international standards. However, as opposed to policy formulation in South Africa, social policy implementation has been a lot more challenging in terms of alleviating deep-rooted social problems such as widespread poverty, significant levels of income disparity, weak educational and health systems, high levels of unemployment and crime as well as HIV/AIDS and the large number of orphans this pandemic is leaving in its wake.

As part of its social welfare policy development strategy, the government enacted a new comprehensive children's legislation. The primary purpose of the Act is to give effect to the rights of children as contained in section 28 of the Constitution as well as other international child rights instruments ratified by South Africa. Within the holistic notion of social policy implementation in South Africa, the Children's Act aims to satisfy the rights of the children in South Africa, focusing particularly on the needs of marginalised children.

This part of the research provides the theoretical and conceptual framework of the study. Its aim is to give a background to the study and build a logical framework for the research. Different types of social welfare policy models in the context of a rights-based approach to the research are considered. This will help to launch the study by analysing applicable social welfare policies and child poverty in South Africa.

Using an explorative and descriptive design, the research study develops a theoretical and conceptual framework to demonstrate the interconnectivity of social welfare policies and the rights of the child. In the following sections of the thesis, the author provides (a) a description of Rawls' theory of justice and builds logical explanations and key arguments for the implementation of social welfare policies; (b) conceptualises and analyses social welfare policies; (c) discusses social welfare policy implementation models; and (d) presents children's legislative framework and legal rights in terms of social welfare.

2.2. Rawls' theory of justice

The concept of justice is very broad and encompasses values such as fairness, equity, right and mercy. In general, as different scholars have defined justice (Bix, 2003; Elkins, 2007; Gorovitz, 2001; Halpin, 1997; Julian, 2002; Rawls, 1971; Sarkar, 2006; Walzer, 1983), it includes the state of being fair, moral rightness, and a schema or a system of law in which every person is treated equally.

The Rawls' theory of justice provides a philosophical underpinning for the bureaucratic welfare state (Bix, 2003; Halpin, 1997; Julian, 2002). Rawls was the first to provide a reasoned argument for why it was right for the state to redistribute wealth in order to help the poor and disadvantaged (Gorovitz, 2001; Sarkar, 2006). The basic objective of Rawls' theory of justice is to provide a coherent theoretical foundation for the utilitarian point of view that has been dominant (Gorovitz, 2001).

Rawls' theory of justice explains two fundamental principles of justice which would, in turn, guarantee a just and morally acceptable society. The first principle guarantees the right of each person to have the most extensive basic liberty, equal to the liberty of others. The second principle states that social and economic positions are to be (a) to everyone's advantage and (b) open to all. Rawls' theory of justice thus explains the principles of how society should be structured, how basic rights and duties should be assigned to individuals, and how social and economic advantages should be distributed to all members of society (Julian, 2002).

According to Rawls, utilitarianism is the principle of utility which provides the greatest happiness to the greatest number of people, ranging from the conduct of individuals to the organisation of society as a whole (Rawls, 1971). Rawls argued that utilitarianism is applicable to the theory of justice. According to him, the theory of justice conveys equal rights for all individuals and denies that injustice toward any particular group of individuals is justifiable unless this injustice is necessary to prevent an even greater injustice. Rawls' primary objective, in a theory of justice, is to provide a solution to the problem of political obligation and to explain under what circumstances citizens are obligated to obey the laws that the state creates. He does this by devising a hypothetical agreement, made under conditions of equality, freedom and state-coercive use of power. Rawls called this theory "justice as fairness" (Rawls, 1971:11). Rawls argued that the term *justice as fairness* does not imply that justice and fairness are identical, but that the principles of justice are agreed to under fair conditions by individuals who are in a situation of equality. "Justice as fairness" also conveys the idea that the principles of justice are agreed to in an initial situation that is fair (Rawls, 1971: 12). He further analysed the societal function of creating a community within which everyone lives in peace, and within which resources must be distributed with an eye to feeding, clothing and providing for dwellings for all members of that society, keeping an acceptable standard of living within the particular society. That same distribution of basic resources is what permits the individual to pursue his or her own more ambitious goals.

Rawls' theory raised many questions and critical commentary. Scholars from several disciplines have contributed to the debate. For example, Nozick (1974) wrote a defence of libertarian justice in the aftermath of *A Theory of Justice* called *Anarchy, State, and Utopia*, which was critical of Rawls' work. Walzer (1983) also wrote a defence of communitarian political philosophy from a liberal perspective, entitled *Spheres of Justice*, while Wolff (1977) wrote *Understanding Rawls: A Critique and Reconstruction of a Theory of Justice* immediately following the publication of *A Theory of Justice*, which criticised Rawls from a roughly Marxist perspective.

There is a wide range of consensus among researchers that income alone is a poor indicator of how goods and services produce happiness or life satisfaction. For example, Dasgupta (1993) suggested that any measure of well-being or life quality related to consumption should also include health and education, where income contributes to the enjoyment of this freedom. This perspective is in line with the theoretical work of Anand and Sen (1997), who advocated multi-dimensional approaches to measurement of human and gender-specific advancement or quality of life. Emerging from the historical context of South Africa, Noble, Wright and Cluver (2007) proposed a multi-dimensional model of child poverty. The model illustrates eight deprivation categories as examples of the dimensions of poverty. These include health deprivation, material deprivation, human capital deprivation, social capital deprivation, living environment deprivation, adequate care deprivation, abuse, and physical safety deprivation.

Gorvoitz (2001) also noted that Rawls provided a powerful new instrument for illuminating social problems. Rawls' theory provides a framework, in a society assumed to consist of free and equal persons that explains the significance of political and personal liberties, of equal opportunity, and of co-operative arrangements that benefit the more and the less advantaged members of society. In this regard, I (the author of this research study) argue that a number of international conventions exist that deal with the legal rights of disadvantaged groups of the society. These include the Universal Declaration of Human Rights (UDHR), the United Nations Convention on the Rights of the Child (UNCRC), the African Charter on the Rights and Welfare of the Child (ACRWC), the 1996 South African Constitution and the new Children's Act in South Africa (2005). These international and national legal instruments provide equal opportunities to children.

As part of the theoretical and conceptual framework of the study, the theory of distributive justice is also appropriate and applicable in terms of analysing social welfare policies and child poverty in South Africa. Rawls (1971:274) defined the theory of distributive justice as "*a set of standards, procedures and rules by which the distribution system of goods within a society can be judged*". Distributive justice is concerned with the question of how benefits and burdens, and, in particular, how economic resources should be allocated (Bix, 2003). According to Elkins (2007), distributive justice is concerned with the fair allocation of resources among diverse members of a community, by taking into account the total amount of goods to be distributed, the distributing procedure, and the pattern of distribution that results. Bix (2003:103) also noted that distributive justice "*entails the proper distribution of goods among a group*". He further maintained that modern discussions of justice, which usually treat justice primarily as about the proper structuring of government and society, are basically discussions of distributive justice. Julian (2002) observed that principles of distributive justice are normative principles designed to allocate goods in limited supply relative to demand. He further noted that the principles vary in numerous dimensions. These include factors such as the goods subject to distribution (income, wealth, opportunities, etc.); the nature of the subjects of the distribution (natural persons, groups of persons, reference classes, etc.); and the basis on which goods should be distributed (equality, according to individual characteristics, according to free market transactions, etc.).

In his theory of justice, Rawls claimed that one's place of birth, social status, and family influences are matters of luck that should not unjustifiably influence the amount of benefits one receives in life. He maintained that "*the job of distributive justice is to limit the influence of luck so that goods might be distributed more fairly and to everyone's advantage*" (Rawls, 1971: 274). Because societies have a limited amount of wealth and resources, a question arises as to how those benefits ought to be distributed. The common answer is that public assets should be distributed in a reasonable manner so that each individual receives a fair share (Maiese, 2003). Nozick (1974) believed that distributive justice is a matter of setting down rules that individuals should follow in acquiring and transferring resources and benefits. The aim of distributive justice is not to achieve any particular outcome of distribution, but rather to ensure a fair process of exchange (Nozick, 1974).

In the this research, I argue that the theory of distributive justice helps to examine a set of standards, procedures, models and rules developed by the South African government to implement the social welfare policies and reduction of child poverty. In addition, understanding the concept of relative deprivation is also an important point that deserves attention in the process of examining the relationship between social welfare policies and child poverty in South Africa.

As different scholars have noted (Runciman, 1966; Vanneman & Pettigrew; 1972; Walker & Pettigrew, 1984; Walker & Smith, 2001), the concept of relative deprivation is very broad and encompasses values such as a sense of justice, unfairness, disadvantage, challenging the system and others.

According to the concept of relative deprivation, a sense of injustice is aroused when individuals come to believe that their benefits are not in balance with the benefits received by people like themselves in similar situations (Runciman, 1966). It occurs when individuals or groups subjectively perceive themselves as unfairly disadvantaged compared to others perceived as having similar attributes and deserving similar rewards (Walker & Smith, 2001). When people have a sense that they are at an unfair disadvantage relative to others, or that they have not received their fair share, they may wish to challenge the system that has given rise to this state of affairs. This is especially likely to happen if a person's or group's fundamental needs are not met, or if there are large income disparities between the rich and the poor (Vanneman & Pettigrew, 1972). In this regard, Walker and Pettigrew (1984) claimed that societies in which resources are distributed unfairly can become quite prone to social unrest. In this situation, redistribution of benefits, on the other hand, can sometimes help to relieve tensions and allow for a more stable society. Such redistribution can be an important component of social structural changes to remedy injustice

From the above theoretical arguments, it is clear that the Rawls' theory of justice, the principle of redistributive justice and the concept of relative deprivation have links with social welfare policies, in particular the Child Support Grant and child poverty in South Africa. Rawls is clearly a redistributionist in that he takes the proper function of government to include not merely the maintenance of a social order, but also the achievement of distributive justice by placing the highest social value on the needs of the neediest. These principles must be decided upon in such a way as to benefit all individuals, and must not be merely designed to favour the interests of a particular group of individuals over another group of individuals. Rawls' theory of justice can be used to illustrate most of the main characteristics of welfare-based principles and provides the context for examining the effectiveness of and the extent to which the social welfare policies of the Child Support Grant help in terms of responding to child poverty. Given the discrimination of the past in South Africa and the current levels of inequality, the need for a comprehensive approach to redress this through the design of acceptable standards, norms, models and implementation strategy is crucial. In this regard, Rawls' theory of distributive justice helps to assess the usefulness of existing child support grant models, procedures and rules in South Africa. Hence, understanding the concept of social welfare policy and implementation models is also another important point that helps to justify a discussion of the relationship of the above theoretical arguments.

2.3. Social welfare policies

Various authors (Baldock et al, 1999; Gates, 1980; Osei-Hwedie & Bar-on, 1999; Patel, 2005; Titmuss, 1963) defined the concept of social welfare policy in different ways. According to Titmuss (1963:16), social welfare policy is a series of collective interventions that raise the general welfare of a society by assigning claims from one set of people who are said to produce or earn the national income to another set of people who may merit compassion. Osei-Hwedie and Bar-on (1999) indicated that social policies are the collective efforts of a nation's people to address their basic welfare needs related to health, education, employment, occupational training, housing, income security and personal social services at the local or national levels. Gates (1980:8) defined social policy as manifest in any authoritative decision or set of decisions that explicitly addresses some specific aspect of individual and societal well-being by ensuring the redistribution of benefits among various classes of individuals.

Baldock et al. (1999:6) defined social policy as "*a deliberate intervention by the state to redistribute resources amongst its citizens so as to achieve a welfare objective*". Baldock et al., indicated that the major element in defining the social policy field is the idea of social welfare. They argued that social policy must seek to enhance welfare and will be used to guarantee the minimum levels of income and access to resources at or above what are judged to be the minimum and acceptable standard. They also suggested that social policy must be designed adequately and people should not be allowed to fall into destitution, homelessness, or avoidable illness as a result of accident, social forces, or indeed their own inadequacy. According to Baldock et al., social policy is largely concerned with meeting social need, and need is largely defined in terms of social inequalities and differences. For Patel (2005: 20), "*social welfare policies is an integrated system of social services, benefits, programmes and social justice and social functioning in a caring and enabling environment*". She further argued that the goal of social welfare is to achieve the wider societal and global goal of human well-being and human security. Patel observed that welfare policies and programmes are considered as the management of social problems, the maximisation of opportunities, and the promotion of human empowerment and social inclusion.

Alcock et al., (2003) defined social policy as a discipline in the social sciences, as a field of study, or as social action in the real world. Hall and Midgley (2004) described social policy as measures that affect people's well-being, whether through the provision of welfare services or by means of polices that impact upon livelihoods more generally.

In the context of this research, the term *social welfare policy* refers to any kind of deliberate and authoritative intervention by the state in terms of addressing social problems and redistributing resources as well as benefits with the objective to empower disadvantaged groups of people.

Globalisation and social welfare policies

Globalisation has led to the openness of national economies to international trade and investment as well as the interdependence of these economies (Velasquez & Boulet, 1999). One of the basic notions of globalisation is deregulation of domestic markets and the liberalisation of international trade (Bhagwati, 2004). Increased investment and competition also lead to economic growth and development. However, there is an argument that globalisation creates inequality between nations that eventually marginalises the world's poor (Finnegan, 2000). Several commentators believe that social welfare and globalisation are complementary rather than contradictory (Reiger & Leibfried, 2003). They have argued that globalisation flourished only because of governments' efforts to protect those affected adversely by it. In other words, social protection is an essential condition for the liberalisation of trade and investment on which globalisation is built. For example, Finnegan (2000: 42) noted the following:

> *Global free trade promotes global economic growth. It creates jobs, makes companies more competitive, and lowers prices for consumers. It also provides poor countries, through infusions of foreign capital and technology, with the chance to develop economically and, by spreading prosperity, creates the conditions in which democracy and respect for human rights may flourish.*

However, some authors have claimed that the development of a global economy has implications for national welfare policies. Mishra (2000) argued that globalisation limits the capacity of nation-states to act for social protection. Global trends have been associated with a strong neoliberal ideology, promoting inequality and representing social protection as the source of "rigidity" in the labour market. The World Bank and the International Monetary Fund have been selling a particular brand of economic and social policy to developing countries and encouraging limited government expenditure. Kiely (1998) also noted that the global strategy of development produces casualties. It makes poor people vulnerable, it uproots traditional lifestyles, and it can lead to social polarisation. The "'structural adjustment" favoured by international organisations -- moving developing countries towards a formal market economy -- has been criticised for pushing developing countries into a situation where their poor will be unprotected. The changes demanded by the new reality of having to access markets in a free and competitive way is leaving many in a position of great vulnerability.

There is a growing recognition by researchers and the academic community that China is playing a great role in the world economy as a result of globalisation (Goyal, 2006; Lardy, 2002). It can also be argued that China's successes are associated with liberalisation and globalisation of the world economy (Yongzheng, 2003). Analysts in the field argue that each aspect of globalisation has brought China further successes. In contrast, evidence indicates that developing nations are not fully benefiting from the different features of globalisation (Goldberg & Pavcnik, 2007; Quattara, 1997).

Social welfare policies in developed countries

According to United Nations, (2002) and European Commission, (2005), there has been significant decline in the economically active population of the European Union and longer term projections indicate that the trend is likely to continue. This rapid and dramatic change in Europe's demography, together with changes in family structures, has implications for changes in social welfare policies. Not only are total numbers dropping but the age structure of the population is also changing. United Nations, (2002) indicated that the possibility of increased life expectancy could resulting many of the population in Europe being above the age of 80 years in the second half of the 21st century. The change in the" support ratio" that this will produce will have a significant impact on social policies.

Considering the current situation, most European countries are revising their social policy and designing strategy of implementation. For example, the Council of Europe's approach to social welfare policy issues is based on the concept of social cohesion. In terms of their strategy, social cohesion is defined as the capacity of a society to ensure the welfare of all its members, minimising disparities and avoiding polarization (Sidorenko and Walker 2004). This strategy is designed deliberately to stress social cohesion rather than social inclusion or social exclusion. According to the council, this strategy helps to create solidarity in society and will minimise social exclusion (Murray, 2004). The Council of Europe's approach to social welfare policy issues is enabling children to grow up in secure families. The council, however, believes that only looking at the support of families is not sufficient and those who design policies to protect the rights of the child have to look at what children themselves need and want (European Commission, (2005).

On the other hand, the American culture of conservatism (free market economic model) has left private institutions to shoulder more of the social welfare burden. The United States of America does not, however, have a unified welfare system (Karger & Stoesz, 2005). In comparison to other developed countries, central government has had a limited role in social welfare provision. The American culture is democratic and capitalistic; entrepreneurs are free to establish social welfare services in the private sector, both as non-profit agencies and also as for-profit corporations. In general, Karger & Stoesz, indicated that the inadequacy of social welfare policy provision in the context of the United States of America.

Social welfare policies in sub-Saharan Africa

Dixon, (1987) and Osei-Hwedie and Bar-on, (1999) argued that in most sub-Saharan African countries, successive governments have, under diverse political-economic frameworks, set their social policy development objectives based on ideological definitions of their national problems. Hence, the process of change of social policy in Africa has been dominated, led, and at times held to ransom by ideology. In general, for the analysis of social policies in Africa, Osei-Hwedie and Bar-on (1999) identified three distinctive periods, namely, the colonial period, the first decades of independence, and the more recent era of structural adjustment.

According to Osei-Hwedie and Bar-on (1999), the three distinctive historical-ideological periods are each associated with particular social policy welfare orientations. For example, in the colonial period, the European powers managed all economic, social and political activities to the benefit of their interests, whereas, independence was a period of rising expectations and African socialism became a vehicle to completely eradicate the colonial social policy and its related structures by most sub-Saharan African countries. Osei-Hwedie and Bar-on further noted that, recently, the International Monetary Fund (IMF) intervened, introducing a new period in the history of African social policy: the era of structural adjustment. According to them, the essence of the IMF's approach to structural adjustment is the neoliberal notion that the state must divest itself of direct participation in the economy and the provision of social services to make way for free-market exchange.

Dixon (1987) observed that in the context of sub-Saharan Africa, social welfare programmes are mostly based on employers' contributions for pensions. Palacios and Sluchynsky (2006) also noted that in most sub-Saharan African countries, social welfare programmes, especially pension schemes, largely serve the wealthiest people, who reside in towns and have protected professions in the public sector. However, Thulo (2006) showed that on the African continent, numerous initiatives have been made by the African Union and regional organisations in supporting efforts to promote the development and implementation of social welfare programmes, encouraging the social protection systems, mainly to protect children, women and elderly people. Thulo (2006) further noted that over the last decade, a growing number of countries have expanded or developed new programmes in an effort to reduce poverty and invest in social and economic development. For example, South Africa, Namibia, Ghana, Mali and Senegal have mainstreamed social protection into their Poverty Reduction Strategy papers and some have developed specific national social protection plans.

2.4. Social welfare policies in SA

Social welfare policy under apartheid: Van der Berg, (1997) and Midgley, (2001) noted that under apartheid, the trappings of a welfare state were crafted for the White racial group. Van der Berg, (1997) further indicated that the minority (White South Africans) were given special protection against poverty and vulnerability in the form of social pensions, while the majority (black South Africans) was denied their rights through discriminatory social and economic policies. Patel (2008) observed that social welfare policy was modelled on Western European institutional social policies for the White minority, whilst a residual system of social welfare prevailed for the black majority. Social work services were oriented toward a remedial social treatment approach which included institutional care, statutory social work services and case work services. Access to service delivery was racially differentiated and organised. The model of service delivery was staff intensive, costly, fragmented and had a limited reach. According to Sagner (2000), the 1928 Old Age Pensions

Act provided pensions for White and Coloured people, but excluded African people and Asians. In this regard, Triegaardt, (2006) argued that social policy during the apartheid regime was designed and implemented under a "residual model" of social welfare and it was allocated on the basis of race and class, as well as internal politics. However, in 1944, old age pensions were extended to African and Indian people with more stringent means. Midgley, (2001) argued that the apartheid regime provided relatively generous social services and benefits to needy Whites, but had neglected the pressing needs of the black majority. However, Vorster, Rossouw and Muller, (2000: 8) noted that the "*drafting of the Social Assistance Act of 1992 made provision for the extension of all social security measures to all South African citizens on an equal scale*".

Post-apartheid social welfare policy: South Africa's transition from a racist and apartheid society that denied basic human rights to a majority of its population to a fully democratic nation is one of the more celebrated transitions of recent times (Chopra & Sanders, 2006). Following the democratic election in 1994, the South African government moved from apartheid to majority rule and designed a national strategy for social development, which was accompanied by the declaration of a White Paper on Developmental Social Welfare (Midgley, 2001). In this regard, considering the limitations of the apartheid regime's welfare strategy, the South African government undertook extensive discussions with diverse constituencies at various levels and made changes to align with international standards of the United Nations World Summit on Social Development in Copenhagen. Midgley (2001) further noted that the White Paper on Developmental Social Welfare was clearly compatible with the social development approach and consistent with people-centered values. Patel (2008) also remarked that since the beginning of a democracy in South Africa in 1994, the social welfare system was refashioned in a wide-ranging consultative process to meet the country's constitutional mandate to promote social and economic justice, democracy, human dignity and freedom. Patel concludes that the welfare system inherited from apartheid was inequitable, discriminatory and relied on inappropriate methods of service delivery.

The White paper on Developmental Social Welfare (1997) indicated that the goal of developmental welfare is a caring society which will uphold welfare rights, facilitate the meeting of basic human needs, release people's creative energies, helping them to achieve their aspirations, build human capacity and self-reliance, and to participate fully in all spheres of social, economic and political life. (Midgley, 2001) observed that the new government adopted a developmental strategy that focused on meeting basic needs, eradicating poverty and investing in human capacities. To this effect, the government announced a programme called the Reconstruction and Development Programme (RDP) that would form the basis for the country's post-apartheid economic and social development. The RDP document showed that the new South African government was committed to an integrated and sustained process of social development propelled by the notion of a participatory and humanistic approach. According to Cpher and Diethz (1997) and Fussell (1996), this approach stresses the participation of the majority of the population (especially the previously disadvantaged groups such as community based organisations (CBOs), women, children, youth and the illiterate) in the process of social development. This approach views development as a process which focuses on the community's involvement in their own development, using available resources and guiding the future development of their own community. The wishes of an individual never override those of a group. This approach emphasises concepts such as capacity building, empowerment, sustainability and self-reliance (community based participatory programme).

The new democratic government, under the umbrella of the RDP, designed five key programmatic components, which revealed the extent to which social objectives were given prominence. These included meeting basic needs, human resource development, economic stability, democratisation, effective planning and monitoring. The RDP advocates popular participation and developmental social welfare (White Paper, 1997). According to Dutschke (2006), the White Paper basically designed strategy on how to fight a poverty.

As has been indicated in the White Paper (1997), and considering the political and social changes, the White Paper places special emphasis on the promotion of the family, children and youth, using the developmental approach to social welfare. The well-being of children mainly depends on the capacity of families to function effectively and efficiently. This is because children are vulnerable and they need to grow up in a nurturing and secure family that can ensure their survival, development, protection and participation in family and social life. Not only do families give their members a sense of belonging, they are also responsible for imparting values and life skills. All these factors are essential for the healthy development of the family and of any society.

Government commitment and public expenditure for social development form one of the key sectors that have been growing very fast. For example, government expenditure allocated for social grants in the 2010 budget year amounts to R89 billion a year (Finance Minster, Pravin Gordhan, 2010). According to the Minster, so far, the programme has reached more than 13 million beneficiaries and social grants contributed to more than half of the income of the poorest 20% of households and have doubled in real terms over the past five years. The report indicated that the state old age pension and the disability grant have risen by R70 to R1080 a month. The Minster indicated the Child Support Grant has been increased by R10 to R250 a month.

With regard to children, the Child Care Act 74 of 1983 was designed during the apartheid regime and is considered as narrow and insufficient in terms of protecting and promoting of the rights of children in South Africa. After having detailed all the necessary adjustments, the government enacted a new Act called the Children's Act 38 of 2005 (later amended by Act 41 of 2007). It is one of the most important pieces of legislation passed by the first democratic government in South Africa. The Act promotes the objective of providing a comprehensive and co-ordinated approach to addressing current social problems and a brighter future for children in South Africa. The Children's Act and a full set of regulations came into operation on 1 April 2010 (Budlender & Proudlock, 2010). The provincial departments of social development are responsible for approximately 83% of the costs of implementing the Children's Act.

2.5. Social welfare policy implementation models

Social problems exist both in wealthy as well as in poor societies and the degree to which social problems are managed determines the extent to which the needs of society are met and the opportunities for advancement provided. Different approaches to social welfare have emerged in the past few decades and, accordingly, a range of views are reflected by authors (Booysens & Erasmus, 2001; Lambord, 1996; Midgley, 1995; Patel, 2005). Some of the approaches, namely, the residual, institutional and developmental social welfare approaches, are discussed below

The residual model of social welfare implementation was one of the most popular social welfare approaches in 18th century Europe. Spicker (2005) observed that the term *residual welfare* was initially coined by Wilensky and Lebeaux to indicate distinction from the idea of institutional welfare. It refers in the main to services provided as a safety net for those who have no other kind of income available. According to them, it is ‘residual’ because it deals with those who are left over.

Residual welfare is based on the concept that people should not fall under a basic minimum standard. This concept equates residual welfare with the idea of a safety net, or a guarantee of protection (Spicker, 2005). The model stems from the idea that the community and the family must provide the care and support for the individual's social welfare. This philosophy is based on competition, where the emphasis is on work ethic and individual responsibility as a way of meeting needs (Midgley, 1995). According to Lombard (1996), the residual model is associated with the minimal and selective involvement of state in the provision of social welfare services, social benefits, social assistance and social security and a high degree of individual responsibilities. It encourages broad participation of non-profit organisations and sees the family, individuals and private market as the natural mechanisms for meeting needs. Lombard also argued that, according to the residual model, causes and solutions for problems lie with the individual. Hence, the model requires limited and selective intervention by the government and a high degree of individual involvement in solving social problems.

Midgley (1995:25) summarised the residual model as a "*limited, remedial and stigmatizing*" approach. This is because it sees social welfare as being focused on targeting, selectivity, conditionality, residual welfare, and rationing. In the context of the residual model, selectivity is used to refer specifically to selection on the basis of low income. In general, the residual model considers social welfare as charitable activities. Midgley (1995) argued that the residual model provides a limited solution to social problems. He considered social problems as very complex and not necessarily the result of individual disobedience or malfunction. According to him, social problems are rather caused by larger structural, political and economic situations.

The institutional model: As the shortcomings of the residual model became more apparent, the institutional model offered a different school of thought in order to explain the weakness of the residual model in terms of solving the social problems that existed in developed and underdeveloped countries.

Dutschke (2006) noted that, in contrast to the residual model of social welfare, the institutional model focuses on large-scale and active involvement of the state in addressing the basic welfare needs of the society related to health, education, employment, occupational training, housing, income security, and so on, at local or national levels. Bean (cited in Koteze, 1995) pointed out that the institutional model of social welfare is applied in practice in the welfare state, in which the government takes positive steps to establish minimum living standards. The main idea in the institutional model is that the government should take responsibility for the welfare of its citizens. The government is directly concerned with the distribution of income, the creation of human resources and the improvement of the physical and social environment. According to Midgley (1995) and Patel (2005), the institutional model sees social welfare as universalistic and an integral part of the society. This model seeks to promote welfare by creating governmental social programmes and projects to enhance the well-being of all the people. This model recognises that there are social costs arising from the process of industrialisation and the limited ability of market mechanisms to meet needs. Accordingly, the state is under obligation to meet all needs, and welfare is considered as a mainstream function of the state.

Even though the residual and institutional social welfare models provide insight into the notion of social welfare, both fail to provide an all-encompassing explanation of the concept of social welfare with the objective of alleviating social problems and bringing about social development.

The developmental approach: Disenchantment with the above models led to a re-examining of the purpose of social welfare development and a search for alternative conceptual explanations. Current debates and social welfare development efforts focus on a developmental social welfare model. This model encourages the integration of social and economic development.

Social development cannot take place without economic development, and, at the same time, economic development is worthless unless it is accompanied by improvements in social welfare for all citizens (Midgley, 1995). Developmental social welfare approaches combine social and economic policies as special tools to enhance the dynamics of social development processes (Lombard, 1996: Midgley, 1995; Patel, 2005). The developmental approaches to social welfare formulate social policy as people-centred and investment-oriented. International organisations such as the United Nations and some scholars have promoted social development as an alternative to welfare strategies (Midgley, 1995). In this regard, an important milestone is the World Summit for Social Development (Midgley, 2001). The model advocated at this Summit took the view that ordinary people have the capacity to participate in and manage their own productive economy (Midgley, 1996; Patel, 2005). In general, the developmental welfare model has three primary axioms: a strong emphasis on people-centred development; the adoption of macro-economic policies that promote employment and attain people-centred development outcomes; and the implementation of investment-oriented social programmes.

Several authors (Midgley, 2001; Niekerk, 2003; Sagner, 2000; Triegaardt, 2006) have agreed that the social welfare policy under apartheid was based on the doctrine of apartheid, which favoured and gave special protection against poverty and vulnerability in the form of social pensions to the minority group of White South Africans, while the majority group, who were black South Africans, were denied their rights through discriminatory social and economic policies. For example, Kotze (1995) reported that the apartheid government in South Africa introduced social security measures for the support of poor people. Initially, these were introduced for the benefit of the White minority and were gradually extended to include all South Africans, although there was racial discrimination in the scope and levels of benefits. Patel (2005) maintained that the welfare model inherited from colonialism and apartheid was inequitable, discriminatory and relied on inappropriate and unsustainable methods of service delivery. Midgley (2001) argued that the system was devised and led by bureaucrats and imposed upon the citizens of South Africa without consultation and without reference to their real needs.

Since the inception of a democracy in South Africa in 1994, the South African government has moved from apartheid to majority rule and designed a national strategy for social development, which was accompanied by the declaration of a White Paper on Developmental Welfare (Midgley, 2001; Patel, 2005). The White Paper on Social Welfare (1997) marks a fundamental shift in South Africa's welfare strategy, from the inherited system, which was unequal, unjust, divisive, inefficient and fragmented, to a new, integrated system which is equitable, sustainable, accessible, people-centred and developmental. In this regard, considering the limitations of the apartheid regime welfare strategy, the South African government has undertaken extensive discussions with diverse constituencies at various levels and made changes to align with international standards of the United Nations World Summit on Social Development in Copenhagen (1995).

The end of apartheid in South Africa brought with it the need to reform the system of social welfare for poorer people. The welfare system was re-designed in a wide-ranging consultative process to meet the country's constitutional mandate to promote social and economic justices, democracy, human dignity and freedom (Patel, 2005). Patel further indicated that, following the abolition of the apartheid welfare system, a new social welfare system was designed in line with a new constitutional mandate. In the area dealing with support to children, which is one of the key aspects of social welfare that concerns this research, the Department of Social Development started introducing the Child Support Grant (CSG), in April 1998, with a means-tested approach. The main purpose of CSG is to reduce child poverty and promote social development. To clarify specific concepts related to this research, basic concept of Gates's model of social policy implementation are briefly explained below.

Gates's model of social policy implementation

Gates's (1980) model of social policy implementation presents the general logical-flow framework within an open system model of a typical social program. His model provides a deeper understanding and analysis of the implementation of social policies and the logical relationship of policy environment, planning environment and management environment. Gates's conceptual framework also shows cause-effect relationships among various variables which determine the effective and successful implementation of social policies. In his model, Gates demonstrated that social programme implementation requires a perspective that is inherently multi-organisational in nature, one in which different sources of authority exert varying degrees of control over different aspects of programme implementation (Gates, 1980).

Gates claimed that the logic of a programme's implementation is governed by specific decisions of programming. He called these the "*parameters of programming*". These include eligibility criteria and procedures, the amount and type of allocation provided the mode of delivery, and the type and level of programme resources. He stated that each of these parameters is assumed to be the object of three general sources of control during the implementation process. These include the following: all parameters are logically interrelated, and without resources, there can be no allocations; the parameters force the external policy environment; and internal forces will be generated by programme personnel. From the elements in a circular model, one can conclude that policy implementation is an ongoing process, with no logical beginning and no logical end. In general, social policy implementation is related to the achievement of broad social goals and the specific nature of achieving these objectives will be determined by a number of success factors, as discussed below.

Success factors for social policy implementation

Most authors agree that there are two major factors for successful social policy implementation, namely, planning and programming. In general, these groupings provide a reasonable way of examining success factors influencing the implementation of social policies

Gates's (1980) argued that plans reflect the fundamental strategies for achieving social policy goals and can be either substantive or procedural plans. A substantive plan is a conceptual instrument by which broad, often vague and open-ended policy goals are divided into more concrete, measurable objectives and activities. Procedural plans are the principal mechanisms for ensuring programme accountability and exert a stronger influence over the conduct of programme activities. These include various administrative mechanisms such as rules, guidelines, standards, operating procedures and reporting requirements. Procedural plans give direction to staff members and guide day-to-day decision making as well as help to achieve the intended substance of a plan. According to Gates, in order to have successful social policy implementation, it is crucial that the substantive and procedural plans must be compatible. In this regard, the control mechanisms exerted through the provisions embodied in the procedural plan are decisive factors for the achievement of substantive objectives.

Clearly identified problems, well-formulated policy goals, objectives and strategies, and well-defined patterns of organised control mechanisms show the compatibility between the substantive and procedural plans. If problems, goals, objectives, strategies and patterns of control are unknown or unclear, the substantive and procedural plans may be in conflict (Gates, 1980). In general, effective planning is a key for successful social policy implementation and requires comprehensiveness, systematic integration, participation, accountability, service integration, a multidimensional process, an effective information system, institutional arrangements, and monitoring and evaluation (M&E). Brief descriptions of these success factors are presented below.

Successful and effective social policy implementation is mainly characterised by integration of service users. Gates (1980:54) noted that "*effective and systematic integration then can only occur if all dimensions are treated as a system of highly interdependent variables and the key to this approach is a comprehensive view of social policy implementation. In general, systematic integration of service delivery is an important attribute for successful social policy implementation*".

Paul (1987) suggested that comprehensiveness can be ensured by bringing all stakeholders together to participate in the process of planning and harnessing the existing physical and social resources of people in order to attain the objectives of policy implementation. Involving people, mainly in the decision-making process and analysis of problems that affect them, is a good way to achieve successful policy implementation. A participatory policy implementation approach generally leads to public policies that are sustainable over the long term because people themselves have a stake in their success.

Several authors have also agreed that successful social policy implementation demands clear and accountable relationships at different levels among departments, groups and individuals.

On this topic, Gates (1980:53) maintained that *"the service network is accountable if it is responsive to the user's problems and needs"*. According to him, the term *accountability* explains the relationship between the people and the service-delivering body. With regard to accountability, Shende and Tonny (2004) raised the following questions: Who is accountable? For what is she or he accountable? To whom is she or he accountable? How is that accountability assessed?

To ensure accountability, a well-organised information system is also very important. According to Gates (1980), information systems are formal organisational structures used to gather, store, and translate a wide variety of data into useful information. He claimed that the establishment of information systems has two separate paths. These are systems designed to improve internal operations and generate information about programme users. Information systems design is mainly concerned with the matching of information needs with organisational data processing capability. The establishment of a proper and effective information system is thus an important element for successful social policy implementation.

As part of planning, institutional arrangement is also an important element for the successful implementation of policies. According to Baye et al. (2002), institutions are governance structures which include a range of rules, regulations, procedures, guidelines and administrative steps imposed through formal arrangements that regulate the way public and private organisations operate. Similarly, Furubotn and Richter (1998) described institutional arrangements as a set of formal or informal rules including the enforcement of such arrangements. The development of relevant institutional arrangements is very important for the successful implementation of social policy.

Gates (1980) stated that the purpose of these rules and procedures is to limit agency discretion which, in the context of administrative law, may be seen to have two sources.

First, the legislature grants to the implementing organisations the statutory authority to issue specific kinds of rules. Second, legislature also affords organisations the right to retain law-making authority to issue statutory directives that limit agency discretions in certain areas. Rules are key elements in the implementation of social policies through state and local government operations. The formulation of clear and concise rules is vital to control the behaviour of state and local implementing organisations and helps to ensure M&E processes in any organisation.

M&E refers to the process of overseeing and assessing the progress and accomplishments of social policy implementation. Successful implementation of social policy requires the design of appropriate M&E tools to assess implementation processes in an ongoing manner. Anderson (1997) noted that systematic M&E seeks information on the effects of a policy or program on the public need or problem at which it is directed. Furthermore, there is an ongoing need to consistently check on additional learning requirements such as how various new regulations should be used and the technical tasks accompanying those. Other examples include compliance with the regulations and procedures to be followed and the administrative support systems involved, such as completing new recording forms. In other words, key aspects of systematic evaluation include effectiveness, efficiency, impact and sustainability.

Successful social policy implementation also depends on effective programming. Gates, (1980:10) defined the term *programming* as the "*decision about the nature, size and optimal mix of programmes to be implemented*". Programming provides decision makers with a tool for identifying the need for new programmes, assessing sources for programme duplication and overlap, and identifying clusters of programmes whose activities require co-ordination. Gates indicated that a comprehensive view of organisations can be gained if one considers the social program not solely as an instrument for the achievement of a singular, stated goal but also as an open system. Thus, social programme implementation requires the support of a coalition of often contending interests, each of which is engaged in the promotion of its goals. In addition, the success of a social programme requires interconnectedness among various institutions or organisations within an open system. This emphasises the interactions of the different components of a system and the non-linearity of those interactions (Gates, 1980). In broad terms, programming in the context of social policy implementation includes a competent work force, capacity building training, infrastructural capacity and organisational structure. The above key elements of programming can lead to successful social policy implementation. A further brief discussion of these elements follows below.

Social policy implementation can be ensured by the existence of a competent and committed work force. Changes in the global economy and social development strategies have significantly altered the nature of the work programmes of many development institutions whose staff may need to master new knowledge and skills for the implementation of social policies. Consequently, training and staff development have now become important components for the successful implementation of social policy. In this regard, Orme and Reuven (2002) emphasised that emotional intelligence is very important. According to them, emotional intelligence is the ability to be sufficiently optimistic, positive and self-motivated in order to set and achieve goals. Goleman (1998) also observed that emotional intelligence is managing feelings so that they are expressed appropriately and effectively, enabling people to work together smoothly toward their common goals. He described emotional competencies as job skills that can, and indeed must, be learnt. Goleman further explained that, although emotional intelligence determines one's potential for learning practical skills, one's emotional competence shows how much of that potential has been realised by learning. In recent years, researchers have shown that employee participation, empowerment, job redesigns, extensive employee training; staff development, performance-contingent incentives and compensation are widely believed to improve the performance of organisations (Pfeffer, 1994).

Successful social policy implementation requires strong infrastructural capacity of the organisation. The concept *infrastructural capacity* refers to establishing and furnishing offices with relevant and basic office equipment, classification schemes, accounting systems, and communication and network standards in order to meet the basic requirements for proper social policy implementation. Hogwood and Gunn (1984) pointed out that policy implementation is a resource-intensive process. Policies which are physically or politically feasible may still fail to achieve stated goals. A common reason is that budget cut-off may starve statutory programmes of adequate resources. This situation affects both national and local government performance in determining whether they can continue in policy implementation. In this regard, it is important to raise the following questions: Is the allocated budget timeously available? Is the allocated budget less than the amount required for civil servant salaries and routine bureaucratic and administrative expenses? What is the likely impact of this on the policy implementation climate? With regard to resources, Hogwood and Gunn (1984) further noted that the fear of having to return the unspent portion of funding at the end of the financial year often sends public agencies into a flurry of expenditure, sometimes on relatively trivial items.

Organisational structure is also one of the key issues in the implementation process of social policy. Organisational design is the creation of an organisation's structure, which could be conceptualised as functional, divisional, and/or as a matrix. The establishment of proper organisational structure creates a good working environment.

Against the background of this literature review and conceptual framework, an exploration of barriers for successful social policy implementation will be discussed in the next section.

Barriers to successful social policy implementation

A barrier factor is any significant inhibitor that hinders effective and successful social policy implementation. The recognition of such barriers is, therefore, critical for effective social policy implementation. Once barriers are identified within a social policy delivery system, they may be mitigated. This section describes vague policy and lack of co-ordination as such barriers to social policy implementation.

According to Gates (1980), *vague policy* blurs the traditional distinction and separation of powers among the legislative, administrative and judicial branches of government. Most of the time, social policy goals and programme purposes are rarely stated clearly and are subject to wide degrees of explanation by diverse groups of policy makers; hence, the final objectives of the programme may be uncertain. The results of social programmes are seldom amenable to accurate verification; in even the simplest of programmes, there may be a large degree of disagreement regarding the nature of programme results. This is because policy makers often lack understanding of the theoretical relationship linking actions with results and the knowledge that forms the basis for determining what specific set of actions and decisions is preferred. Even when the preferred set of responses may be known, policy makers often do not design the necessary controls to ensure the actual responses are in compliance with those that are preferred.

Considering all these points, Gates (1980:62) noted that social welfare programme implementation occurs by a centrally co-ordinated "remote control" and is determined by central authorities in pursuit of national goals. However, he also indicated that programme implementation actually occurs in the local community. Conceptually and organisationally, the circuit channel from central policy to decentralised implementation is frequently packed with ambiguity and uncertainty. This is one of the huge challenges in the implementation process of social policy. The most convincing reasons behind vague social policy rest in the simple fact that legislators find it politically good to intentionally avoid clear statements of policy. According to Gates, the legislative adoption of written policy often requires the establishment of coalitions with different and conflicting interests; vague written polices offer the advantage of allowing each actor in the coalition to interpret the policy in a manner that promotes self-interest. He adds that, at some point, however, vague intentions must be translated into concrete actions, which often have to be discretionary actions undertaken by persons responsible for policy and programme implementation. However, the exercise of such discretion leaves the implementing organisations vulnerable to scrutiny and challenge by interested parties who claim that individuals' discretionary decisions are not consistent with their interpretation of policy intent. Gates argued that written policy and implementing procedure may be altered as a result and challenged by another group, and the result is that policy is not made but rather emerges through the process of implementation.

The effective and successful implementation of the social policy can be affected by *lack of co-ordination* and partnerships among all stakeholders. As a result of the fragmented and compartmentalised nature of planning and programming, past efforts have not been very successful in building connections between government provisions that could lead to more sustained and comprehensive service delivery. As argued by Barberton (2006), co-ordination among all is essential for the effective implementation of the Act. All these factors indicate that there is a need to move away from the existing ways of organising people, money, institutions, infrastructure and technical resources in silos and separate compartments.

2.6. Child rights to social welfare

In recent years, a human rights-based approach has become an important and unifying concept for people from a range of disciplines interested in poverty reduction, equality and social transformation (Jonsson, 2003; Nyamu-Musembi & Cornwall, 2004; Piron, 2004; Thomas, 2005; UNHCR, 2002). It has also become part of an international agenda to deal with the rights of children who are living in chronic poverty all over the world.

A rights-based approach is a conceptual framework for the process of social development that is normatively based on international human rights standards and operationally directed to promoting and protecting human rights (Alston, 1998; Dawes, 2006; Piron, 2004). It seeks to analyse inequalities which lie at the heart of development problems and to redress discriminatory practices and unjust distributions of power that impede development progress (Nyamu-Musembi & Cornwall, 2004; UNHCR, 2002). In a rights-based approach, the plans, policies and processes of development are attached in a system of rights and corresponding obligations established by international law. This helps to promote equality and social transformation, and the sustainability of development work, empowering people themselves, especially the most marginalised, to participate in policy formulation, and also holds accountable those who have a duty to act (Jonsson, 2003; Nyamu-Musembi & Cornwall, 2004).

This approach ensures the involvement and participation of all stakeholders, transparency and accountability, monitoring, sustained social development and the realisation of the rights of the excluded. It seeks to analyse inequalities which lie at the heart of social development problems and injustices that hinders development progress (Nyamu-Musembi & Cornwall, 2004). The rationale for a rights-based approach is usually a blend of two major points. First, the intrinsic rationale is acknowledging that a right-based approach is the right thing to do, morally or legally. Second, the instrumental rationale is recognising that a human rights-based approach leads to better and more sustainable social development outcomes (Jonsson, 2003; UNHCR, 2002).

Overview of children's legal rights

Several international conventions have dealt with children's legal rights. These include the UN Universal Declaration of Human Rights (1948); the UN Convention on the Rights of the Child (1989); the UN Optional Protocol to the Convention on the Rights of the Child on Involvement of Children in Armed Conflict (1996); the UN Optional Protocol to the Convention on the Rights of the Child on the Sale of Children (2000); the UN International Convention on Civil and Political Rights (1994); the UN International Convention on Economic, Social and Cultural Rights (1966); the African Charter on Human and Peoples' Rights, OAU (1981); the African Charter on the Rights and Welfare of the African Child, OAU (1990), the South African Constitution, (1996); the UN Convention on the Rights of the Child, with special reference to foster placement and adoption nationally and internationally (1989); the UN Declaration on the Protection of Women and Children in Emergency and Armed Conflict (1984); and the UN Declaration on the Promotion among Youth of the Ideas of Peace, Mutual Respect and Understanding between Peoples (1965). The following section considers the most relevant legal instruments on the rights of the child for the purposes of this thesis.

Convention on the Rights of the Child (CRC)**:** The rights of the child in the global and universal context received serious attention after the declaration by the General Assembly of the United Nations on CRC (1989). The basic premise of the convention is that children (all human beings below the age of 18) are born with fundamental freedoms and the inherent rights of all human beings. A child enjoys all the human rights laid down or proclaimed in the constitutions of the individual countries, and particularly in international conventions or declarations. The CRC establishes, in international law, that governments must ensure that all children – without discrimination in any form – benefit from special protection and assistance (CRC, 1989).

According to Lopatka (1992: 48), the rights of the child are only those human rights that are granted to the child because *"the child by reason of his or her physical and mental immaturity needs special safeguards and care including appropriate legal protection, before as well as after birth"*. The establishment of this global framework of human rights and normative standards was intended to set the basis for a peaceful, tolerant future. This landmark work has been steadily built upon, first by strengthening the initial declaration of rights into binding agreements and, more recently, by developing focused international instruments dealing with specific emerging challenges. Most recently, this convergence of human rights and development has gained prominence through a rights-based approach to programming.

Following this international convention and declarations, at the global level, most governments enacted legislation, created mechanisms and put into place a range of creative measures to ensure the protection and realisation of the rights of those under the age of 18. Only two countries have failed to ratify the United Nations Convention for the Rights of the Child that is, Somalia and the United States of America. The government of Somalia, which until recently did not have an internationally recognised government, signed the convention in May 2002 but has not yet ratified it. The United States has also signed the convention, but has failed to ratify it. This may be because some US states want to continue to be able to execute their juveniles -- an action expressly forbidden by the convention (UNICEF, 2005).

The United Nations Convention on the Rights of the Child contains 54 articles, covering almost every aspect of the human rights and well-being of children. It is a comprehensive legal document negotiated over 10 years and agreed to by 192 governments all over the world. Above all, it is a commitment made to the children of the world. Upon ratification of the UN Convention on the Rights of the Child (1989), countries formally committed themselves to ensuring the effective realisation of children's civil, political, economic, social and cultural rights without discrimination of any kind. Some articles reinforce the laws of the respective state government in order to take action. To cite a few:

> Article 4 notes that these rights shall be fulfilled by each nation "*to the maximum extent of available resources*."
>
> Article 12 requires that
>
> *1. State parties shall assure to the child who is capable of forming his or her own views the right to express those views freely in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child.*
>
> *2. For this purpose, the child shall in particular be provided the opportunity to be heard in any judicial and administrative proceedings affecting the child, either directly, or through a representative or an appropriate body, in a manner consistent with the procedural rules of national law.*
>
> Article 27 requires that the government
>
> *recognises the right of every child to a standard of living adequate for the child's physical, mental, spiritual, moral and social development*." … *have the primary responsibility to secure … the conditions of living necessary for the child's development, … but implement this right and shall in case of need provide material assistance and support programmes, particularly with regard to nutrition, clothing and housing*.

With regard to the implementation and reporting on the progress of the United Nations Convention on the Rights of the Child, Article 44, paragraphs 1 and 2 clearly indicate that

> *States' parties undertake to submit to the Committee, through the Secretary-General of the United Nations, reports on the measures they have adopted which give effect to the rights recognized therein and on the progress made in the enjoyment of those rights: (a) Within two years of the entry into force of the Convention for the State party concerned, (b) Thereafter every five years. (CRC, 1990)*
>
> *Reports submitted to the Committee on the Rights of the Child shall indicate factors and difficulties, if any, affecting the fulfilment of the obligations under the Convention and shall also contain sufficient information to*

provide the Committee with a comprehensive understanding of the implementation of the Convention in the country concerned. (CRC, 1990)

The African Charter on the Rights and Welfare of the Child, which was adopted by the Assembly of Heads of State and Government of the Organisation of African Unity (OAU) in 1990 and came into force in 1999, brought a new breakthrough in the context of Africa (The African Charter on the Rights and Welfare of the Child, 1990). It is one of the first continental normative instruments that signalled the beginning of an era of concrete efforts by nations of the modern world to give legal recognition and protection to the rights of children (Chirwa, 2002). The Charter makes several provisions that have not been articulated in any human rights instrument before, apart from making several improvements on the CRC (Chirwa, 2002). The Charter defines a *child* as a human being below the age of 18 years. It recognises the child's unique and privileged place in African society and that African children need protection and special care. It also acknowledges that children are entitled to the enjoyment of freedom of expression, association, peaceful assembly, thought, religion, and conscience. The Charter is not just a list of rights; rather, it represents a different way of viewing children and the relations between children and the society. African children should no longer be seen as mere beneficiaries, but as subjects with rights and as social agents (Olowu, 2002:127-136). For example, Olowu (2002:127-136) cites the following extracts:

Article 4: Best Interests of the Child:

> *1. In all actions concerning the child undertaken by any person or authority the best interests of the child shall be the primary consideration.*
>
> *2. In all judicial or administrative proceedings affecting a child who is capable of communicating his/her own views, an opportunity shall be provided for the views of the child to be heard either directly or through an impartial representative as a party to the proceedings, and those views shall be taken into consideration by the relevant authority in accordance with the provisions of appropriate law.*

Article 7: Freedom of Expression

> *Every child who is capable of communicating his or her own views shall be assured the rights to express his opinions freely in all matters and to disseminate his opinions subject to such restrictions as are prescribed by laws.*

The charter aims to protect the private life of the child and safeguard the child against all forms of economic exploitation and against work that is hazardous, interferes with the child's education, or compromises his or her health or physical, social, mental, spiritual, and moral development. It calls for protection against abuse and bad treatment, negative social and cultural practices, all forms of exploitation or sexual abuse, including commercial sexual exploitation, and illegal drug use. It aims to prevent the sale and trafficking of children, kidnapping, and begging by children. In many respects, its provisions are modelled on the provisions of the UN Convention on the Rights of the Child.

The African Charter on the Welfare and the Rights of the Child (ACWRC) (1990), Chapter 1, Article 1, obliges member states of the organisation to recognise the Charter and to undertake to perform the necessary steps, in accordance with their constitutional processes and with the provisions of the present Charter, to adopt such legislative or other measures as may be necessary to give effect to the provisions of the Charter.

***The South African Constitution, 1996*:** After nearly two years of intensive consultations among different levels and organs, the Constitution of the Republic of South Africa, 1996 was approved by the Constitutional Court (CC) on 4 December 1996 and took effect on 4 February 1997 (Constitution of the Republic of South Africa, 1996). It is the foremost and best-known source of human rights in South Africa, is considered as one of the most progressive constitutions in the world, and enjoys high acclaim internationally (Moran, 1998). Moran also observed that, in the context of children, it is the first source that practitioners in child and youth development should engage with when they need to discover the rights of children as they apply within the context of the South African Constitution. For example, Section 28 deals with children's basic rights:

> *Every child has the right to a name and a nationality from birth; to family care or parental care, or to appropriate alternative care when removed from the family environment; the basic nutrition, shelter, basic health care services and social services; to be protected from maltreatment, neglect, abuse or degradation; to be protected from exploitative labor practices; not to be required or permitted to perform work or provide services that are inappropriate for a person of that child's age or place at risk the child's well-being, education, physical or mental health or spiritual, moral or social development; not to be detained except as a measure of last resort; to have a legal practitioner assigned to the child by the state and at state expense, a child's best interests are of paramount importance in every matter concerning the child.* (South African Constitution, Chapter 2: Bill of Rights, 1996: 13-14)

All these constitutional rights provide special protection to children because of their vulnerability and physical and mental immaturity.

The New Children's Act in South Africa**:** The Child Care Act 74 of 1983 (hereafter the 1983 Act) was designed during the apartheid regime and was therefore considered to be too narrow and insufficient to protect and promote the rights of all children in South Africa. Considering the limitations of the 1983 Act, the South African Law Reform Commission undertook an extensive and long consultative process at national, provincial, district and municipality levels. This included workshops, seminars and conferences with different role players such as civil societies, government representatives and the children themselves as the basis for law reform. The Commission also considered a range of issues arising from the limitations of the 1983 Act, including, among others, a stronger focus on the principles of the best interests of children and greater parental responsibility towards children. Furthermore, the South African Law Reform Commission made changes to align the new Act with international standards (South African Law Reform Commission, 2001).

The Children's Act includes a set of objectives which promote the preservation and strengthening of families; ensure constitutional rights and the well-being of children, in line with the international instruments; and strengthen and develop community structures which can assist in providing care and protection for children. It also provides for a comprehensive and co-ordinated approach to address current social problems, to protect children from discrimination, exploitation and any other physical, emotional or moral harm, and to recognize the special needs of children with disabilities. In general, the Children's Act addresses current social problems and promotes the protection, development and well-being of children in South Africa.

September and Dinbabo (2008) noted that the primary objectives, as set out in Section 2 of the Act, are to give effect to children's constitutional rights to social services; to family and parental care or to alternative care when removed from the family environment; to protection from maltreatment, neglect, abuse and degradation; and to promotion of the best interests of the child. The Act also contains a number of key values and principles to set the ideological perspectives and to guide decision-making professionals, implementers, and the courts on interpreting the meaning of the different provisions of the Act. These are to promote the preservation and strengthening of families, to strengthen and develop community structures to assist in providing care and protection to children, to protect children from discrimination, exploitation and physical, emotional or moral harm or hazards, to provide care and protection to children in need of care and protection, to recognise the special needs that children with disabilities may have, and generally, to promote the well-being of children.

One further key objective of note, which is central to the objectives of this study, deals with the implementation mechanisms of the Act. Section 2(d) reads that the object of the Act is to "*Make provision for structures, services and means for promoting and monitoring the sound physical, psychological, intellectual, emotional and social development of children*". Sections 4 and 5 of the Children's Act are significant in this regard, in that they go some way towards defining the issues of implementation. Three aspects of the implementation mechanisms are especially essential to achieve the objectives of the Act.

First, section 4 requires the Act to be implemented by national, provincial and (where appropriate) local organs of government "*in an integrated, co-ordinated and uniform manner*". This creates a duty for organs of state in all three spheres of government (national, provincial and local) to work together to implement the provisions and objectives of the Act. This section implies that the regulations of the Act will provide the detail on the allocation of specific responsibilities the various tiers of government. Although the competencies of these tiers are constitutionally directed, there are service implementation overlaps and new mandates for municipalities.

Second, regarding the appropriation of resources, section 4(2), while recognising that competing social and economic needs exist, requires that the different tiers of government "*take reasonable measures to the maximum extent of their available resources to achieve the realisation of the objects of this Act*". The Act therefore places certain fiscal obligations upon the state in respect of the fulfillment of the children's rights set out in this Act. This section appears to make it harder than usual for the state to argue that money is not available for the implementation of the Act, since it must be able to show that it has devoted the 'maximum' of available resources to implementing the provisions of the Act. Although it cannot be predicted how a court might interpret this in future, it may be that the maximum extent of resources includes all resources, not only those dedicated to welfare spending by the government. The use of the word *maximum* seems to indicate that a 'reasonable' allocation will not be sufficient to ensure overall compliance with the Act, and that this may be a step forward in securing resources for the care and protection of children (Sloth-Nielsen, 2004).

Third, another important benchmark is to be found in Section 5, which is titled "Inter-sectoral implementation of Act". It requires all organs of state involved with the care and protection of children, at whatever level, to co-operate in developing a uniform approach aimed at co-ordinating and integrating the services delivered to children. Although this may be quite difficult to enforce legally, it nevertheless sets the tone for better co-ordination and integration at the services delivery level.

In the light of the new philosophical approach underlying the objectives of the Act, as well as the country's social development strategies, it is expected that the Act will face a number of key challenges. These challenges hold significant implications for policy makers and implementers. For example, it is expected that there will be considerable demand placed upon the child welfare service sector in particular – a sector that has already long been described as under-resourced and fragmented (September, 2006). On the other hand, the Department of Social Development (DSD) has recently undergone important policy changes that provide the department with extensive opportunities to integrate the new Act with its transformed vision. One of these policy shifts was the decision to separate social welfare grants and social welfare services to accelerate the administration of social welfare grants as a key strategy of poverty alleviation. The seven types of cash grants payable to the most vulnerable (25% of the population) constitute more than 80% of the budget of the DSD. The new Act provides the legal framework for the bulk of social welfare services

The Department of Social Development is the custodian of the Act and therefore will be expected to take on the bulk of the responsibility for implementation. However, in line with the objectives of the Act, and especially with regard to the imperatives of realising these through a comprehensive and integrated delivery system, it is clear that all the relevant government departments, designated civil society organisations, communities, parents and children have crucial responsibilities.

***The best interest of the child*:** Since the adoption of the United Nations Declaration on Human Rights in 1948, a considerable number of human rights conventions have followed which conferred rights upon the individual and created state obligations to respect and guarantee those rights. One of the key concepts in the UN Convention on the Rights of the Child is the concept of the best interest of the child. According to Lopatka (1992:49), *"the best interest demands that all children should receive equal; treatment without discrimination of any kind such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status*". Wolf (1992) argued that one may only speak to some extent of the best interest concept as a coherent legal concept shaped by contextual relations and different categories of individual human rights and state obligations. He further claimed that the best interest of the child would give the government practical requirements to exercise their discretion in matters relating to the well-being of children.

***Millennium development goals versus children's rights*:** The largest gathering of world leaders in human history met for the Millennium Summit at the United Nations headquarters in New York and agreed on eight millennium development goals for making the right to development a reality for everyone by the year 2015. The objective of this declaration is to promote a comprehensive approach and a co-ordinated strategy, tackling many problems across a broad front (Save the Children, 2005). The millennium development goals aim to eradicate extreme poverty and hunger; achieve universal primary education; promote gender equality and empower women; reduce child mortality; improve maternal health; combat HIV/AIDS, malaria and other diseases; ensure environmental sustainability; and develop a global partnership for development (UN Annual Report, 2000). Although the goals are for all humankind, they are primarily concerned with children. Following further meetings, the millennium development goals were also developed by the leaders who pledged that the world would achieve improvements in the most critical areas of human development by 2015 (UNICEF, 2002).

The millennium development goals have become the principal global guiding document for development. In September 2005, the United Nations World Summit reaffirmed the principles in the 2000 Millennium Declaration and recognised the need for ambitious national development strategies backed by increased international support (World Development Indicators, 2006). However, some have argued that there is no simple, universally accepted blueprint for implementing this strategy. Developing countries need to prepare their own mix of policies to reduce poverty, reflecting national priorities. Choices will depend on the economic, socio-political, structural, and cultural context of individual countries.

2.7. Conclusion

A great diversity of traditions contributed to the development of social welfare theories and policy implementation modalities. On the basis of these diverse approaches, different arguments have been provided and different methodological perspectives developed. In the context of this research, the Rawls' theory of justice is highly relevant and will act as the basis of the theoretical framework. Chapter 2 analysed the main understandings of the Rawls' theory of justice, distributive justice and concept of relative deprivation, traced their main characteristics and practical applications, and indicated the relationship between social welfare policies and child poverty.

The proper implementation of the social welfare polices has the potential to bring about significant improvement in the lives of children in particular and family and the community in South Africa in general. Successful implementation of the social welfare polices depends mainly on the proper functioning and interconnectedness within i.e. targeted beneficiaries, the workforce, as well as the institutional and infrastructural capacity of the organisations. In this regard, the conceptual framework of a social welfare implementation model provides a guide for the analysis of social welfare policies and child poverty in South Africa. The basic essence of the New Children's Act in South Africa was provided in Chapter 2 and the link with a rights-based approach explained. The following chapter provides a literature review on child poverty and cash transfers.

CHAPTER-3: CHILD POVERTY AND CASH TRANSFERS

There is now significant evidence that social protection -- in combination with other policies and interventions -- can enable persistently poor people to escape poverty. (Chronic Poverty Report, 2004: 51)

3.1. Introduction

Researchers generally agree that there is no general consensus about the definition and measurement of child poverty (Atkinson, 1991; Atkinson, 2003; Ben-Arieh, 2000; Bigsten, 1983; Corak, 2005; Dawes, 2006; Feeny & Boyden, 2003; Sen, 1999; Sen, 2000; Streak, 2003; Townsend, 1979; World Bank, 1998; World Bank, 2000). All of the conclusions made by researchers in defining and measuring poverty are exceedingly debateable in the field of social sciences, which is acknowledged by authors in the human rights literature on the definition of child poverty (Cassiem & Streak, 2001). This debate about how to measure poverty continues amongst researchers in the field both in South Africa and internationally.

With regard to child poverty reduction, post-apartheid democratic government in South Africa has designed and implemented various social policies relating to social security. The Child Support Grant has become the main programme for reduction of child poverty in the country. Take-up of the Child Support Grant has increased considerably over the past few years and the age limit extended up to 15 years old (Hall, 2009). There have been several indications that the government of South Africa is going to consider the expansion of the grant to children under 18 years of age (Minister of Finance, Pravin Gordhan, 2010).

This chapter reviews child poverty literature globally, in the African Continent in general, and in South Africa. The aim of this review is mainly to provide a coherent link and build a rational framework for the study. The following sections comprise (a) a conceptualisation, description and measurement of child poverty, (b) an assessment of international, national and local level empirical research on child poverty, and (c) an analysis of literature about the impact of social assistance on child poverty in the South African context. Lastly, the chapter presents a conclusion on the basis of the literature analysis and findings.

3.2. Poverty

The subject of poverty, deprivation and income disparity has captured the attention of academics for centuries, and a wide range of conceptualisations, definitions and ways of measurement have been offered. In general, in the past few decades, analysts in the field tried to define the term *poverty* in a narrow and in a broader sense. For example, the term *poverty*, in the narrow sense, implies a shortage or absence of income to survive, whereas in the broader sense, it is seen as a multi-dimensional concept that includes other important aspects of a human being such as shelter, proper health, adequate education, accessing information, power relations and others.

Poverty, according to the definition of Fields (1980), is an economic circumstance in which people do not have enough income to maintain the minimal level of health services, food, housing, clothing, and education generally accepted as essential to ensure a sufficient standard of living. Kingdon and Knight (2006) stressed that any effort to describe and define the term *poverty* includes personal decisions and opinion about improved life. Bowden (2002) defined *poverty* as a situation where an individual, household or a community cannot afford to maintain a satisfactory standard of life regardless of time and place. A number of analysts have agreed that the definition of poverty goes beyond personal income in a definite period of time. For example, it also includes a lack of opportunities, lack of access to assets and credit, as well as social exclusion. Poverty is complex and multi-faceted and fluctuates in depth and duration. The poor have their own way of expressing poverty:

> *Don't ask me what poverty is because you have met it at my house. Look at the house and count the number of holes. Look at the utensils and the clothes I am wearing. Look at everything and write what you see. What you see is poverty.* (a poor man from Kenya, quoted by World Bank, 2000: 3)

> *Poverty is pain; it feels like a disease. It attacks a person not only materially but also morally. It eats away one's dignity and drives one into total despair.* (a poor woman from Moldova, quoted by the World Bank, 1998:11)

There are different opinions about the main causes of poverty. Aristotle assumed that the poor will always make up the majority of any society and poverty is a part of life (Simpson, 1998). Marxist theorists (Frank, 1969; Wallestein, 1974) postulate that poverty is a product of an unjust social structure and gives evidence of slavery, colonialism and exploitation by the rich. Some have concluded that poverty is part of the fulfillment of the prophecy and a sign that the end of the world is approaching (Hays et al., 2007, LaHaye & Ice, 2001). However, Kitabo (2000) argued that poverty is intricately interlinked with many aspects of social life and has a cause-effect relationship. In general, it can be argued that the term *poverty* is difficult to define and any effort to measure it empirically is fraught with difficulty because of the possibility of biased judgement. There is no single, final and objective measure to be found in the literature on the topic.

More recently, poverty issues have once again moved to the top of the development agenda, reflecting the concern that economic reforms undertaken by many countries in the 1980s may have raised inequality and poverty levels (World Bank, 1990).

With the objective of alleviating or minimising the poverty situation at different levels, several institutions, such as the International Monetary Fund (IMF), the World Bank (WB) and government organisations (GOs), as well as non-government organisations (NGOs) are undertaking extensive development activities throughout the world (Feyisa, 1997). Accordingly, different approaches, strategies and operational modalities are being practiced.

3.2.1. Child poverty

There is no standardised way for conceptualising, defining, or measuring child poverty. Researchers, academics, politicians and analysts in the field have argued that there is always an extensive and endless discussion without reaching consensus on how to define and measure child poverty (UNICEF, 2006). Until recently, child poverty was not distinguished from adult poverty for purposes of study, measurement and action. Rather than being considered as the separate matter that it is, it was traditionally assumed that child poverty referred to children living in income or consumption-poor households. The definition commonly used for the poverty line is biased towards adult consumption and underestimates the impact of poverty on children (Gordon et al., 2003).

3.2.1.1. Conceptualisation of child poverty

The term *child poverty* can be conceptualised in different ways (Bastos, 2001). Conceptually, as Minujin et al. (2006) pointed out, child poverty is the lack of a range of both material and social supports and services that are believed to be essential to assure children's well-being. Minujinn et al. further argued that those children who experience poverty in their lives are not able to positively build their academic, spiritual, emotional, and psychological development, and they always have a low standard of life in any society. Dieden and Gustafsson (2002) also noted that child poverty is generally considered as the poverty experienced by children under the age of 18 years. Literature in the field confirms that children are at a higher risk of poverty regardless of place and time. If children grow up in poverty, they are more likely to be deprived in later life as well (Corak, 2004; White, & Masset, 2002).

Child poverty is mainly characterised as being an interacting group of differing needs that can give emphasis to or attenuate the child's degree of well-being. The assessment of child poverty must be based on the analysis of the child's living conditions and not on the family level of income, the methodology that has been used so far (Bastos, 2001). Bastos concluded that the expressions of poverty found in the child are different from those of the adult, which can involve different political conflicts.

3.2.1.2. Definition of child poverty

Different authors define the term *child poverty* in different ways. For example, the UNICEF's operational definition of child poverty, in the State of the World's Children Report (2005:18), was as follows:

> *Children living in poverty experience deprivation of the material, spiritual and emotional resources needed to survive, develop and thrive, leaving them unable to enjoy their rights, to achieve their full potential or participate as full and equal members of society.*

The Christian Children's Fund (CCF) (2004) and Minujin (2005:3) defined *child poverty* as

> *Deprivation: a lack of material conditions and services generally held to be essential to the development of children's full potential; Exclusion: the result of unjust processes through which children's dignity, voice, and rights are denied, or their existence threatened; and Vulnerability: an inability of society to cope with existing or probable threats to children in their environment.*

The Institute for Democracy in South Africa (IDASA), as cited in Minujin (2006:488), described poverty in children using four major aspects of insufficiency. These include (a) inadequate earnings and income conditions, (b) lack of human development opportunities, (c) lack of the basic requirements such as health, schooling, hygiene services and leisure facilities, and (d) economic uncertainty, which refers to a family's concern about changeability in household income (being without a job) and access to public services. Physical insecurity is associated with maltreatment, child labour, and the vulnerability of orphans. In general, Mehrotra et al. (2000) noted that absence of good investment in the area of social development, more specifically in the field of health, education and social welfare services are the main reasons for low family income in general and child poverty in particular.

A recent definition of child poverty adopted by the UN General Assembly makes a significant recognition of the fact that while poverty harms everyone, children experience poverty differently:

> *Children living in poverty are deprived of nutrition, water and sanitation facilities, access to basic health-care services, shelter, education, participation and protection, and that while a severe lack of goods and services hurts every human being, it is most threatening and harmful to children, leaving them unable to enjoy their rights, to reach their full potential and to participate as full members of the society.* (UNICEF news note, cited in Tsegaye et al., 2008:9)

Tsegaye et al., (2009) noted that according to the relatively recent definition of child poverty adopted by the UN General Assembly, measurement of child poverty should not be linked with only individual or family income. According to the UN resolution, the process of measuring child poverty should place emphasis on considering aspects such as minimum social services such as proper drinking water, good nutrition, housing, schooling and access to information.

3.2.1.3. Measurement of child poverty

Across the globe, in the past few decades, a number of perceptions and thoughts have been provided by analysts on the development and measurement of child poverty. Accordingly, a range of approaches, models and analytical tools from various disciplines have been proposed as possible effective approaches and measurement of poverty. These include the monetary approach (or "indirect approach") which measures lack of resources, the capability (and/or basic needs) approach, and the (often multi-dimensional) "direct" approach of measuring different deprivations. Each of these approaches can be minimalist in focus or more expansive (e.g. ranging from survival to full participation in society), and each can be defined in a number of different ways (e.g. by 'experts', by poor people or by the population as a whole) [Studies on Poverty and Inequity SPII, 2008; 2009]. Brief descriptions of some selected measurements of child poverty are presented below.

***Monetary approach*:** Coudouel et al. (2002) indicated that the monetary approach is the most commonly used approach in measuring child poverty. It defines child poverty with respect to only financial matters, more specifically in the context of the family or individual income from predefined sources or according to an agreed line of poverty. In general, the assessment and costing of individual consumption is mainly based on specific market place cost. When estimating poverty by means of financial matters, measurement of the indicators of child poverty is mainly done using revenue and expenditure. Some analysts (Gillie, 1996; Ravallion, 1998; Stigler, 1954) claimed that provided the information on consumption obtained from a household survey is comprehensive enough, expenditure will be a reasonably accurate indication as it is linked more closely to a person's well-being and may better reveal a household's actual standard of living and ability to meet basic needs than other approaches.

The Foster-Greer-Thorbecke (FGT) metric is a generalised measure of poverty within an economy. It combines information on the extent of poverty (headcount ratio), the depth of poverty (poverty gap), and the severity of poverty (squared poverty gap), as presented below (Foster, Greer, & Thorbecke, 1984:761-765). The general formula for this class of poverty measure depends on a parameter of α which takes a value of zero for the poverty rate, poverty gap and severity in the following expression:

$FGT_{\alpha} = \frac{1}{N}\sum_{i=1}^{H}\left(\frac{z - y_1}{z}\right)^{\alpha}$, where z is an agreed upon poverty line, N is the number of people in an economy, H is the number of poor (those with incomes at or below z), y_i represents individual incomes and α is a "sensitivity" parameter. If α is low, then the FGT metric weights all the individuals with incomes below z roughly the same. If α is high, those with the lowest incomes (farthest below z) are given more weight in the measure. The higher the FGT statistic, the more poverty there is in an economy.

For α = 0, the formula reduces to $FGT_0 = \frac{H}{N}$, which is the poverty rate/headcount ratio (P_0) or the fraction of the population which lives below the poverty line.

For α = 1, the formula is $FGT_1 = \frac{1}{N}\sum_{i=1}^{H}\left(\frac{z - y_1}{z}\right)$, which is the poverty gap (P_1) or the amount of income necessary to bring everyone in poverty right up to the poverty line, divided by total population. This can be thought of as the amount that an average person in the economy would have to contribute in order for poverty to be barely eliminated.

For α = 2, the formula is $FGT_2 = \frac{1}{N}\sum_{i=1}^{H}\left(\frac{z - y_1}{z}\right)^2$, which is the squared poverty gap (P_2). It is a measure of the severity of poverty. Although the poverty gap measurement takes into consideration distance separating the poor from the poverty line, the squared poverty gap takes the square of the distance. It takes into account the inequality among the poor.

On the other hand, some analysts (Minujin, 2005; Vandemoortele, 2000) have argued that a monetary approach, that is, using a poverty line, is inadequate for measuring child poverty. According to them, there are numerous explanations for the drawbacks and unsuitability of measuring child poverty using a financial or monetary method. For example, Feeny and Boyden (2003) claimed that the monetary approach does not reflect household composition, gender and age. It does not indicate the specific needs and interests of children as opposed to adults. Therefore, Feeny and Boyden (2003) argued that the monetary approach does not consider children, who are often excluded from a relative share of family income. Considering the above points, experts in the field have stressed that children often do not have the right to use some assets, for example, the power to decide over family income. Furthermore, they have indicated that a monetary approach focuses mainly on material factors and completely ignores aspects such as freedom, information, social exclusion, environment, security, and so on. Most authors of literature on the topic (Atkinson, 1991; Bigsten, 1983; World Bank, 2000; World Bank, 1998) have identified two general methods of assessing poverty using the so-called *monetary approach*. These include (a) absolute poverty measurement approach, and (b) the relative poverty measurement approach.

Absolute poverty refers to the lack of an adequate amount of financial income of individuals or households in financial terms for fulfilling the basic needs such as foodstuff, clothes and shelter. It is a set standard, which is the same in all countries and which does not change over time. The so-called *absolute approach* for measuring poverty usually uses a specific line which gives a value in terms of finances with the objective of determining a fixed amount of money that helps for survival of individual/households across specific time frames and covers basic needs. Most of the time, the poverty line, in terms of absolute poverty, is fixed. However, the fixed line can be modified in addition to adjusting it only in case of inflation (Atkinson, 1991; Gillie, 1996; Pradhan et al*.*, 2000). "*International organizations such as the World Bank and UNICEF have put a figure on absolute poverty arguing for an 'International line' which they define as US$ 1 per day per person, this being the minimum amount that purchases the goods and services deemed necessary for basic survival*" (UNICEF, cited in Montgomery & Burr, 2003:49). However, Montgomery and Burr, (2003) observed that the international definition of absolute poverty becomes difficult when it is applied within the world's richest countries. Hence, understanding poverty in relative terms provides some information about the gap between the richest and the poorest in society. Montgomery and Burr further argued that poverty is not restricted to a lack of money. It is also very much about understanding humiliation, emotional tension, social exclusion and segregation. It is argued that poverty can affect children's psychological and emotional well-being as well as their ability to feel valued and involved with their peers.

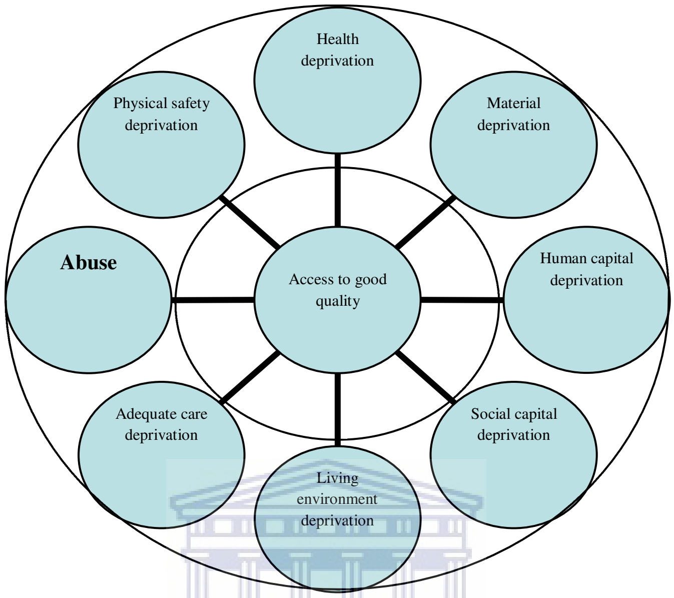
Relative poverty describes poverty of a particular group or area in relation to the economic status of other members of the society: in this view, people are considered as poor if they fall below prevailing standards of living in a given societal context. A relative approach for measuring poverty assesses the level of poverty of a group by comparing it with the rest of the individuals, households, community or society in the same context (Atkinson, 1991: World Bank, 1990; World Bank, 2000).

***The capability approach*:** a number of researchers also made use of the capability approach to identify child poverty. The work of Sen (1984, 1999, 2000) indicated that the capability approach establishes the development of human potential or competence instead of maximising the financial income of an individual or households. The focus of the capability approach is the expansion and improvement of the quality of people and complete avoidance of financial indicators for measuring the well-being of individuals. According to Sen, this approach places special emphasis on the non-financial aspects of well-being indicators. Alkire (2002) noted that, according to the capability approach, poverty assessment must take into consideration the need of some individuals or households for a larger amount of resources as compared with other groups in order to attain a similar level of achievement.

According to the advocates of the capability approach, other approaches have been concerned with the distribution of resources alone. Alkire (2002) further noted that theorists who advocate this approach believe that resources have no value in themselves when they are disconnected from their promotion of human functioning. The capability approach involves asking social planners to question the needs of individuals for resources and their diverse abilities to change resources into functioning. In this regard, Sen (1984, 1999) argued that instead of measuring poverty by income level, he would suggest calculating how much an individual can achieve with that income, taking into account that such achievements will vary from one individual to another and from one place to another. Sen further presented a situation in which one would wonder on how to explain the presences of poverty in rich countries among middle-income people. For instance, Sen (1999) reported that even in the United States of America (USA), in the centre of some large towns, as a result of inappropriate provision of services, the standard of life, which is measured in terms of schooling, shelter, drinking water, access to information, power, and so on, may sometimes be very low when compared with some developing nations. The capability approach refers to a humanistic way of identifying and defining people (individuals' or households' behaviour) as opposed to measuring the welfare of a society using the utilitarianism approach.

***Multiple deprivation approach*:** Many analysts (Barnes et al., 2009; Gordon et al., 2003; Grodem, 2008; Lund et al., 2008; Noble et al., 2007; Wright et al., 2009a, 2009b) have suggested a combination of monetary and deprivation approaches to assess child poverty. As the shortcomings of traditional definitions of and approaches to child poverty measurements have become more apparent and, emerging from the historical context of South Africa, Noble et al. (2007) proposed a multi-dimensional model of child poverty. The conceptualisation of poverty in the model is broadly defined to include many different forms of deprivation. The model contains eight examples of dimensions of deprivation, including health, material, human capital, social capital, living environment, adequate care, physical safety, and as a result of abuse. The concept of poverty, which the measurement of the model is built around, blends the relative and absolute poverty concepts. At the core of the model is a multi-dimensional conceptualisation of absolute child poverty. This is complemented by a relative, multi-dimensional concept of poverty and social exclusion (Noble et al., 2007).

Figure 3:1 Multi-dimensional model of child poverty measurement



Source: Noble et al. (2007).

All of the decisions made by analysts in defining and measuring child poverty are highly debateable in the social sciences and this is acknowledged by authors of the human rights literature on the definition of child poverty (Cassiem & Streak, 2001). Cassiem and Streak further argued that child poverty is much more than that of having insufficient income to satisfy a socially adequate standard of living, as well as inadequate access to basic services and goods important for human development, including health, education and housing. They added that the most commonly used poverty assessment methods such as income or expenditure are also not sufficient to measure the complex nature of child poverty.

Despite its drawbacks and limitations, researchers in the field often use the monetary approach to child poverty measurements for practicality and data availability reasons. Hence, considering the availability of the data and the applicability of the approach, throughout this research, the monetary approach (and the Foster-Greer-Thorbecke (FGT) index of poverty measurement) has been applied and the microsimulation of SAMOD used to analyse the interplay between the Child Support grant and child poverty.

Using a representative sample drawn from a set of micro-data, SAMOD measures the income for each of the households. The measurement is performed several times, for each policy change specified by the user. The first-round result of the change is the arithmetic change in the "before" and "after" calculations. The areas of policy for which changes can be simulated in the most straightforward form comprise the Child Support Grant, the Disability Grant (DG), the Foster Care Grant (FCG) and other related social welfare benefits in South Africa. Throughout the process, SAMOD helped the study in a variety of contexts to analyse child poverty in South Africa.

3.3. Research on child poverty

3.3.1. Global

There is a great deal of literature assessing child poverty both in developed and developing countries (Barnes, 2001; Barnes et al., 2009; Ben-Arieh, 2000; Black, 1996; Bradshaw, 1999; Brewer et al., 2006; Gordon et. al., 2003; Haarman, 2000; Hendrick, 2003; Herault, 2005; Levy et al., 2008; Lund et al., 2008; Matsaganis et. al., 2005; Noble et al., 2007; Ties Boerma, 1996; Townsend, 1987; UNICEF, 2008; Vandemoortele, 2000; Wright et al., 2009a, 2009b).

For instance, in 2007/2008, with the support of several specialists and global research centres, the social policy and economical analysis unit in UNICEF undertook a detailed Global Study on Child Poverty and Disparities (UNICEF, 2008). The study was conducted in 40 nations and seven regions. The aim of this global level study was to identify and influence important socio-economic policy frameworks and ensure the logical distribution of resources as well as to highlight children's issues as a national programme/priority agenda in addressing child poverty. The research study placed emphasis on issues like health, schooling, safety, living environment vulnerable households, and disadvantaged groups of people, specifically children, on the global level. The result of the assessment process indicated that in spite of some progress having been made towards the millennium development goals, a great number of children and women lagged behind in achieving the target. The study also provides a comparison of income disparity and child poverty, especially in the area of nutrition, schooling, and social protection through collaboration with national and global partners. The process and results of the study produce empirical facts, insights and possible solutions that can be implemented to influence national level policy framework, in collaboration with all stakeholders. Most importantly, the study brings context-specific proof and assessed policy responsiveness to outcomes related to child poverty and inequalities. Applying a general and comprehensive approach, this analysis used the material and deprivation approach to measure child poverty and assessed how these approaches interrelate with one another. The analyses of countries were conducted by teams of national experts in collaboration with stakeholders in countries identified by UNICEF as focal points, and included participatory methodologies and approaches with the objective to engage with diverse stakeholders at the national level. A core global network of child poverty experts, across more than 45 countries, fostered knowledge sharing and collaboration across every region. Specific reports from the various countries were the centre of the global study and served as the building blocks for regional and global reports (UNICEF, 2008).

In spite of the prosperity of most Western countries and the resulting social support existing for children in these states, huge numbers of children worldwide continue to experience overwhelming levels of poverty, many without basic food, education or health care

(UNICEF, 2005). Many people wrongly assume that child poverty is a critical challenge only for the developing nations. However, emerging empirical evidence clearly indicates that in the so-called highly developed nations, children also suffer from poverty. For example, the report points out that the number of children suffering from poverty dramatically increased in 17 out of 20 OECD countries in the beginning of the 1990s. The research concludes that whatever the type of measurements used, child poverty increased vastly in developed countries. In the context of Europe, Denmark and Finland have the very lowest child poverty level, as compared with other countries. In contrast, the United States of America and Mexico have higher child poverty that is, greater than 20%. UNICEF reported that, in 2005, about 40 to 50 million children were thought to be growing up in poverty in the world's richest nations (UNICEF, 2005).

Hence, UNICEF proposed that poverty reduction strategies, policy frameworks, plans and any kinds of social development implementation modalities should place special emphasis on directly addressing the problem of children, especially on the major issues of deprivation. It can also be argued that the very high degree of child problems facing today's developed nations is directly or indirectly linked with or has its roots in child poverty. With the objective of alleviating or minimising the magnitude of the problem, UNICEF suggested that OECD countries should place special and concentrated effort on reduction of child poverty. The report also provided a range of attainable and practical targets and timelines for the realisation of the rights of the child and child poverty reduction (State of the World's Children, 2005).

In the context of the developing countries, the situation is more severe. For example, UNICEF (2005) noted that more than 16% of children under the age of five are exceedingly malnourished, 400 million children do not have access to clean water, more than 500 million children do not have proper toilet facilities, and around 270 million children are denied proper health facilities. In addition, in the developing countries, 140 million children aged 7-18 have never been given the opportunity to go to school, and roughly 448 million children are devoid of information as they have no access to media coverage. Furthermore, more than 38% of children do not have appropriate shelter, about 20% of children do not have access to potable water, and 14% do not have access to basic health-care facilities (State of the World's Children, 2006). The HIV/AIDS pandemic is very serious and about 640,000 children per annum in the developing world contract the virus as a result of mother-to-child transmission. HIV-related diseases account for about 17% of the deaths of children under 15 years old (UNICEF 2005).

Gordon, et al. (2003), in the context of developing countries, also undertook a partnership action research on child rights and child poverty. Their empirical assessment showed that the depth and intensity of child poverty was too high. Using field data from case studies and based upon globally acknowledged definitions arising from international legal documents, they provided a strategic outline for conducting action research. Methodologically, Gordon's study applied important elements of deprivation of basic human need, including shelter, sanitation, safe water, information, health, education and food. The results of the study indicated that over 1 billion children, of whom more than 50% are in the developing nations, undergo severe deprivation of basic human needs. The findings of Gordon et al. (2003) generate an important policy framework for investing in social development, more specifically, the development of basic social service structures for children. They also emphasised that all anti-poverty reduction policies and strategies should be able to address local context and realities. According to them, any superficial type of solution cannot bring about a long-lasting and sustainable solution for children.

Some researchers have also used a micro-simulation technique to measure child poverty and the impact of different tax and benefit arrangements on reducing child poverty (Anderson, 2007; Brewer et al., 2006; Levy et al., 2008; Levy, Lietz, & Sutherland, 2006; Matsaganis et al., 2005; Wilkinson, 2009).

Levy, Lietz, and Sutherland (2006), using EUROMOD, demonstrated the implication of alternatives measures that have to be followed in the process of designing a framework for the redistribution of resources between countries and their respective children. As part of their study, they undertook an in-depth various scenario analysis on child poverty. Their research results also demonstrate the cost of bringing the amount of support up to an acceptable level for all children as well as the subsequent result on income poverty amongst EU children. In their assessment, they used a poverty line set at the countrywide, or EU15, level and assessed the effect on child poverty. The results of Levy, Lietz, & Sutherland's study indicated that a large proportion of children are classified as poor in low-income nations. For example, about, 61% of children in Greece and about 8% in the UK are categorised as poor children, using a poverty line set for the EU15 countries. In their study, they considered two descriptive nationally-determined objectives: halving the rate of child poverty and reducing the rate to 5%. Throughout their assessment, EUROMOD was used to categorise the net public spending on cash benefits (Levy, Lietz, & Sutherland, 2006).

3.3.2. Africa

Africa's challenges are numerous and children face a number of challenges as well as being subjected to conditions much more harsh than in other continents. In the past few decades, a number of researchers (Hope, 2005; Tsegaye et al., 2009; UNAIDS 2003; UNICEF 2004; UNICEF, 2005) undertook research in the context of Africa and indicated that child poverty is complicated as a result of increasing impoverishment of households in Africa.

For example, Hope (2005) noted that child poverty in the Sub-Saharan Africa region is very severe and complicated as a result of unique social, economic and political problems, cultural and developmental circumstances, as well as because of the frequent disaster situations, armed conflict, famine and hunger experienced. Several authors have argued that sub-Saharan Africa child survival is related to the degree of poverty suffered. However, Black, Morris, and Bryce (2003) observed that though poverty is the most important cause of the low child survival rates in sub-Saharan Africa, a number of other factors, also related to poverty, give rise to child mortality. These include unsafe living conditions, unclean drinking water, absence of sanitation and associated health problems, lack of knowledge on birth control and poor knowledge of the importance of breastfeeding practices.

UNICEF (2005) and Hope (2005) reported that, compared to other regions, sub-Saharan Africa is the region where the greatest proportion of children are always at risk, for many reasons. Some of the reasons include dire poverty, communicable disease, inappropriate feeding habits and malnutrition, loss of parents, high infant mortality, and sexual and labour abuse, which have been increasing at an alarming rate in the past few decades. Africare (2004) noted that every single day, a number of children die without having proper medication in sub-Saharan Africa. Most child deaths are health-related. According to UNICEF (2004) estimates in 2004, more than 12.3 million children below 18 years old, in one way or another, had lost both parents. UNAIDS (2003) also warned that unless serious measures are taken, the worst scenario is that by the year 2025, about 27 million children in Africa might be orphaned by AIDS.

Gordon et al. (2003), as part of a global-level study on severe deprivation, also did research in the African region. Their results indicated that children in rural areas are much more deprived than those in urban areas. Children born in country settings encounter almost twice as much risk than those born in towns. Furthermore, a difference between Africa's regions was noted; in comparison to other regions, the degree of risk for children in North Africa is relatively low. In general, a number of studies (Gordon et al., 2003; UNDP, 2007; UNICEF, 2006; UNICEF, 2007) have shown that the maximum rate of one-dollar-per-day poverty in Africa is mostly found in the western and central part of Africa.

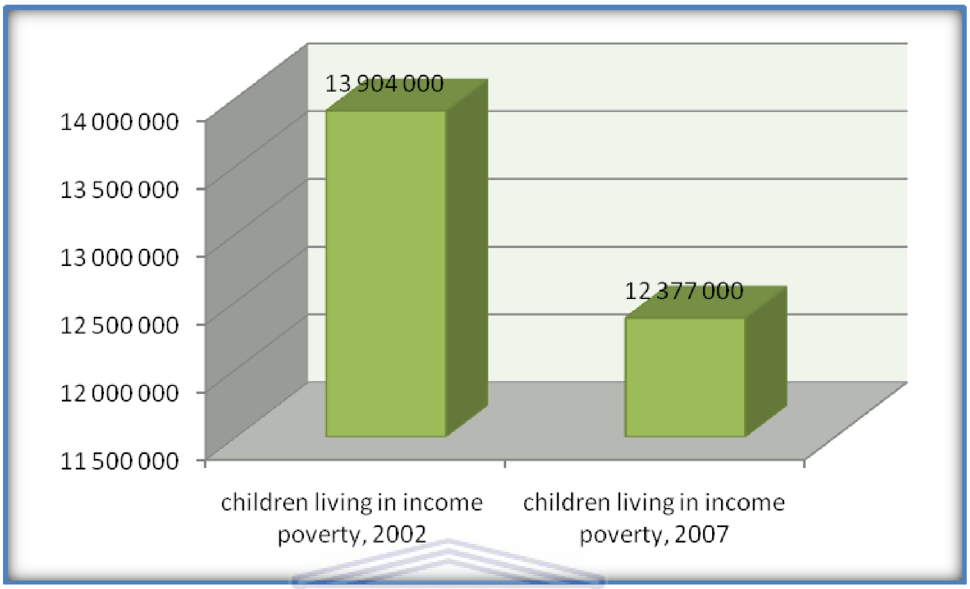
3.3.3. South Africa

Children comprise the most vulnerable group in contemporary democratic South African society. Research has indicated that the fundamental factors which intensify children's vulnerability are violence, poverty, inadequate standards in education and poor social services (UNICEF South Africa, 2009). Analysts in the field have further noted the vulnerability of children with HIV/AIDS and children orphaned as a result of the pandemic. UNICEF South Africa (2009) also observed that those children who experience poverty are mainly exposed to risky conditions and are deprived of their basic needs for survival, such as food, shelter, schooling and proper family care.

According to Pendlebury et al. (2008), almost 12.4 million children live in impoverished conditions. Empirical research also indicated that child poverty as a condition is increasing dramatically in various parts and provinces of the country. According to Proudlock et al. (2007), two thirds of the children (68%) studied lived in the poorest 40% of households. The results of the research further indicated that 38% of the children lived in households where no adults were employed. UNICEF South Africa (2009) reported that in South Africa, poverty is seriously affecting children before they turn five years old. In general, poverty manifests itself through vulnerability and contagious diseases and significantly diminishes children's confidence and ability to participate in their peer groups. In addition, it restricts their educational capacity and decreases their academic potential.

Meintjes and Hall (2008) claimed that poverty remains a serious issue in South Africa, most significantly, child poverty. Using a quantitative indicator, Meintjes and Hall established the child poverty rate line as R350 per person per month. In 2007, 68% of children lived in households with a per capita income of below R350, while in the Eastern Cape and Limpopo, 8 out of 10 children lived in households with a low level of per capita income (Meintjes & Hall, 2008). However, the financial circumstances of the very poorest of the poor are to some extent improved upon by an increment in the Child Support Grant from R100, as of 1998, to R240 in 2009. Notwithstanding government attempts to address the issue of poverty partially through social assistance provision, the harsh impact of poverty is still felt amongst children as, in some regions, 8 out of 10 children live in households with a low level of per capita income, an indication that most household members are without employment. This warrants an amendment of government administration and management strategies in addressing the issue of poverty, such as introducing a universal basic income grant (BIG) and improving the quality of education.

Figure 3:2 South African chidren living in income poverty in 2002 & 2007.



Source: Meintjes, and Hall, (2008:77)

An up-to-date research study, undertaken by Streak et al. (2009) gives a profile of child poverty. Their study is based on the 2005/06 Income Expenditure Survey and assessment of the child poverty profile in South Africa. The result of the study shows that the poverty headcount, poverty rate and severity measures are highest amongst African children, followed by Coloured children, then Indian and White children. Streak also indicated that the poverty headcount is highest amongst children of 0-4 years, followed by 5-14 years and only then those aged 15-17 years. In terms of provincial level of poverty distribution, Streak et al. (2009), using the headcount measure, demonstrated that the Eastern Cape and Limpopo provinces have the worst child poverty prevalence. They showed that child poverty in South Africa is most extensive in rural areas and indicated that the child poverty headcount rate in Limpopo province reaches 78%. Considering the findings of the study, Streak et al. (2009) proposed that government policy measure should focus on children in their initial years.

In South Africa, recently, various studies in the field of child poverty have been undertaken, including studies of child well-being and identification of multiple deprivations (Barnes et al., 2007, 2009; Dawes et. al., 2007; Nobel et al., 2009; Wright et al., 2009a, 2009b). A brief description of a few studies is presented below:

Monitoring Child Wellbeing: A South African Rights-Based Approach: Dawes et al. (2007), using a rights-based approach, undertook a comprehensive study and developed a conceptual framework and a classic set of holistic indicators for monitoring the well-being of children in South Africa. With the South African constitution as a background, they made it clear that it is not just the state of the children that is important to measure, but also the circumstances within which the children grow and develop. They provided realistic tools for policy makers in order to assess the effectiveness of child-based policies and interventions. The conceptual framework addresses a wide range of domains of child poverty, including HIV/AIDS, education, mental health and disability, abuse and neglect, the justice system, and children affected by the worst forms of labour.

The Provincial Index of Multiple Deprivation (PIMD) is constructed by a group of experts drawn from Oxford University, the South African Human Sciences Research Council (HSRC) and the South African Department of Statistics. Noble et al. (2009) commented that the PIMD relates to deprivation experienced by the South African population (including all ages of children). PIMD contains numerical information about each province in South Africa in terms of levels of multiple deprivation. According to Noble et al., the PIMD provides detailed information about income, material, education, health, employment and living environment deprivation. The report offers maps of each province showing the PIMD plus spreadsheets with full data contained for each of the South African provinces.

South African Index of Multiple Deprivation 2001 (SAIMD 2001)**:** Noble et al. (2009) explained that the SAIMD 2001 was built using data from the 2001 census and produced at Datazone level, which is a sub-ward-level statistical geographic profile that was especially designed as part of the process. SAIMD 2001 was designed using the general deprivation model and it involves a series of uni-dimensional domains of deprivation. Each of the various domains of deprivation includes one or more indicators concerning that domain of deprivation. This was updated at municipality level, using the 2007 Community Survey (Wright & Noble, 2009).

South African Index of Multiple Deprivation for Children (SAIMDC 2001)**:** Barnes et al. (2007, 2009) created a geographical profile of child deprivation in the country, from the publicly available 10% sample of the 2001 census. According to Barnes et al., about 14 children-centred indicators were organised into five domains of deprivation. The main domains included income, employment, education, living environment and adequate care, which were then combined with equal weights to form an overall index of multiple deprivation at municipality level. The research results identified the patterns of deprivation across South Africa within each domain and, on the overall index, were examined at national, provincial and municipal level. This analysis was later repeated at Datazone level, using the full census (Wright et al*.,* 2009a).

South African Index of Multiple Deprivation for Children 2007 (SAIMDC 2007): A group of experts from the University of Oxford's Centre for the Analysis of South African Social Policy (CASASP) designed the South African Index of Multiple Deprivation for Children 2007 (SAIMDC 2007). According to Wright et al. (2009b), the SAIMDC 2007 was constructed using data from the 2007 community survey. Wright et al. (2009b) further claimed that it was a more updated profile of child deprivation across South Africa than had hitherto been produced. The authors maintained that the SAIMDC 2007 is a composite index generally indicating about five dimensions of deprivation experienced by children aged 0-17 years. These include income and material deprivation, employment deprivation, education deprivation, biological deprivation, and living environment deprivation.

3.4. Social security

According to the International Labour Organisation (ILO), the term *social security* mainly refers to social welfare services related to social protection or protection against socially identified situations such as poverty, old age, disability, unemployment and others. There are various international- and national-level legal instruments which ensure that government provides social protection for its citizens. For example, the International Covenant of Economic, Social and Cultural Rights (ICESCR) of 1966, Subsection (2) Article 2 reads

> *Each State party to the present Covenant undertakes to take steps, individually and through international assistance and co-operation, especially economic and technical, to the maximum of its available resources, with a view to achieving progressively the full realisation of the rights recognised in the present Covenant by all appropriate means, including particularly the adoption of legislative measures.*

In recent years, social policy development with special focus on social security, social insurance and social assistance has become an important concept for people from a range of disciplines, international- and continental-level organisations as well as government and non-government organisations.

Wright and Noble (2010) noted that on the African continent, numerous initiatives and regional level discussions have been conducted that deal with the designing of a social policy framework for Africa, for example, the African Union Labour and Social Affairs Commission, held in 2003 in Mauritius and in 2005 in Johannesburg, and the presentation of a new Social Policy Framework for Africa made in Windhoek, Namibia in 2008. In addition, consultations with the objective of realising social security and harmonising the Social Policy Framework for Africa were also held (e.g. the AU's Declaration on Employment and Poverty Alleviation in Africa, which was drawn up in Ouagadougou in 2004, Livingston in Zambia and Yaoundé in Cameroon in 2006). In addition, three vital regional level consultations were held in Uganda, Egypt and Senegal.

The main purpose of the new Social Framework for Africa is

> *To provide an overarching policy structure to assist AU Member States in the development of their national social policies to promote human empowerment and development in their ongoing quest to address the multiple social issues facing their societies* (AU, 2008, cited in Wright & Noble, 2010:2)

The Social Policy Framework for Africa has been proposed as a strategy to be practiced by almost all members of the African Union with the aim of reducing poverty and inequality and promoting a high quality, longer life and healthier life style on the African continent. As part of the framework, a number of policy-related suggestions and recommendations were developed to ensure social protection in African countries. The proposal has been designed in such a way as to provide marginalised groups of people with the possibility of accessing social services and building social development among the citizens of the respective countries. The new Social Policy Framework in Africa deals with population and human development, HIV/AIDS, gender equality, civil conflict, and so on. The main points recommended in the policy framework include (a) the extension of existing social insurance schemes; (b) establishing and re-enforcing a community-based/occupation-based insurance system purely on a voluntary basis; (c) the establishment of social welfare systems and employment assurance systems; and (d) introduction and extension of public-financed, non-contributory cash transfer schemes (HelpAge International 2008).

The dedication of governments in the South African Development Community (SADC) region has gone beyond the economic development oriented approach and has given special emphasis to social development, as indicated in the design of the Social Policy Framework that suits the aspirations and commitments of the region. For example, in the context of SADC, *social policy* is defined as

> *Interventions which promote the wellbeing of all citizens and which address structural inequalities in wealth, ensure greater equity for all, correct market short-comings, reduce poverty and promote social inclusion.* (SADC, 2006, cited in Wright & Noble, 2010:4)

The right for social security was clearly indicated in the SADC Social Policy Framework and approved by the various minsters of employment and labour and the social partners in Lusaka, Zambia on 8-9 February 2007 (Wright & Noble, 2010).

The 1996 South African Constitution, section 27(1) (c) covers the right to social security: "*Everyone has the right to have access to social security, including, if they are unable to support themselves and their dependents*". Section 27(2) reads, "*The State must take reasonable legislative and other measures, within its available resources, to achieve the progressive realization*" of this right. Sections 28(1) (b) and (c) of the Constitution read, "*Every child has the right ... (b) to family care or parental care, or appropriate alternative care when removed from the family environment; (c) to basic nutrition, shelter, basic health care services and social services*."

The White Paper for Social Welfare (1997:48) defines *social security* as

> *A wide variety of public and private measures that provide cash or in-kind benefits, ... or being exercised only at unacceptable social cost and such person being unable to avoid poverty and secondly, in order to maintain children.*

The policy framework of the Department of Social Development is set out in the 1997 White Paper for Social Welfare. This policy document was used to draft the comprehensive social security plan adopted in 2000. The Department of Social Development (2006) also noted that, in South Africa, the responsibilities of social security are mainly on the three spheres of the government, that is, national, provincial and local. Taylor et al. (2002), in their detailed technical report, suggested policy changes to ensure that more people receive social security. They referred to the idea of social protection as a broder concept, rather than social security. The committee suggested that, in order to ensure people's well-being, especially vulnerable people, the state needs to adopt programmes that address the social protection needs of the people, including income, asset, capabilities, and special needs. The committee also recommended that the government consider introducing a general income grant. This would not have a means test and would ensure that everybody can afford at least the basics, such as food and transport money. The grant recommended is known as a basic income grant (BIG).

The South African government does not give a grant to all people, not even to all poor people. It has decided that certain groups, seen as the most vulnerable, should receive the grants. There are two main conditions for qualifying for grants, an age and a means test (the amount of money and property that people have). The Social Assistance Act 13 of 2004 and the South African Social Security Agency Act 9 of 2004 are the two main legislations which provide social grants in South Africa. The implementation of social security in the South African context consists of mostly means-tested support.

Means test/selectivity: According to Leatt, Rosa, and Hall (2005), the term *means test* describes an exploratory procedure undertaken to make a decision whether or not an individual or family should be given definite kinds of benefits from the government. The "test" entails eligibility criteria for access to the benefits. Depending upon the organisational commitment and what arises, the type of support may vary. However, often support is made in the form of financial disbursement. Of course, sometimes those nominated for social welfare services can usually access basic health facilities and schooling services free of charge. In general, it is assumed the amount of support is enough, at least, to cover the basic needs of individuals or households. When using a means test modality, the screening criteria are very complicated and the assessment process might take a long time.

The basic income grant (BIG): Naidoo (2002) defined BIG as a type of grant that could be paid to all citizens of the country regardless of age, sex, colour, religion, or social and economic status. As opposed to the means testing, a BIG will not negatively affect the psychology of the recipients as it would not be associated with stigma. According to Naidoo, the process of implementation of BIG has nothing to do with the usual misconception of "the rich actually get the benefit". He further noted that the country's' tax system can be reformulated in line with guaranteeing that the better-off actually pay back the cost of the grant and also pay in, to finance the grant for the poor. Taylor, et al. (2002) indicated that, in the context of South Africa, a BIG would provide everyone with a minimum level of income, eradicate impoverishment and alleviate poverty. Their report also indicated that a BIG would enable the poorest households to better meet their basic needs and enable them to access other services. BIG also favours the largest, poorest households as everyone in the household receives the grant.

In the context of South Africa, a number of legal frameworks have been formulated and social welfare policy implementation plans designed. Government budgetary expenditure was also revised to facilitate spending on the new priorities and socio-economic policy plans. However, it is argued that significant gaps remain between the intentions of social welfare policies, on the one hand, and the service delivery model on the other hand. The existing Child Support Grant is based on an income definition which is rather crude. However, mounting empirical evidence suggests the importance and affordability of a basic income grant in South Africa with the aim of bringing about poverty reduction and sustainable social transformation (Meth, 2006; Rhee, 2007).

3.4.1. Cash transfer versus child poverty

At the moment, all over the world, there is a growing positive perception and acknowledgment that social security, mainly cash transfer, is an essential part of poverty reduction strategies for addressing increasing vulnerability (Hanlon et al., 2010). For example, Marcus (2004) noted that the term *social protection* is very broad and it includes government expenditure in the area of educational development and the expansion of basic health services and facilities to the people. More precisely, it can embrace the distribution and provision of food items mainly for vulnerable and marginalised groups of people. In general, any measures related to social protection are important elements of poverty reduction at the individual and household level.

According to the authors of the literature on the topic, there are two types of cash transfer programmes, namely, social insurance and social assistance. Tabor (2002) pointed out that social insurance arrangements usually involve the transfer of finances more or less financed by contributions. However, most of the time, they are regulated by the relevant government departments. He argued that generally social insurance plays a poverty prevention role. Broadly speaking, child-oriented cash transfers can further be divided into conditional or unconditional programmes.

Conditional cash transfers refer to the transfer and distribution of money to poor families or individuals with pre-agreed conditions of investments requirements in human capital development, for example, sending children of the related age to school or the commitment of parents/guardians to attend vaccination or immunisation campaigns (Lund et al., 2008; Rawlings & Rubio, 2005). According to Lister (2003:262), "*Most of the time, conditional* *cash transfers are intensified through more and more tough rules putting in force the obligation to seek and take work, which promoted best form of welfare*". That conditionality makes this new generation of social programmes address both future and current poverty. Rawlings & Rubio (2005) argued that conditional cash transfers help to address the challenge and issues of future poverty by facilitating children in attending school, and it is believed that education among the young generation will act as a means of breaking the intergenerational poverty cycle.

In South Africa, Lund et al. (2009) undertook a study of conditional cash transfers in various Latin American countries and of issues relating to the implementation of the unconditional Child Support Grant in South, Africa. Their research examined the implication of conditional cash transfers in depth. According to their findings, the biggest challenges with regard to gaining access to different services, such as health services and education, are mainly supply side issues instead of questions of personal motivation. Using facts from different countries, Lund argued that access to these services would not be enhanced through introduction of conditionality to the grant. Furthermore, the authors stressed that conditionality of this kind would be opposing the social rights of citizenship indicated within the Constitution.

Unconditional cash transfers: This indicates a non-contributory, regular and predictable cash grant, as long as the recipients of the grant have been nominated for support. The support would be for a specific period of time and a specific number of persons (Lund et al., 2008). In the context of South Africa, the Child Support Grant (CSG) and the Foster Care Grant (FCG) can be considered as examples of an unconditional[7] cash grant paid to the caregivers of eligible children.

[7] This has changed with the introduction of new regulations in January 2010 requiring the caregiver to provide regular evidence that the child attends school. Though not punitive (the child support grant is not stopped if the child is not at school, but is instead linked to a social worker to help resolve the impediments to attending school) this is a move towards conditionality. The draft regulations issued for consultation were more punitive.

3.4.2. Child Support Grant (CSG)

The Child Support Grant (CSG) programme was introduced in 1998 by the country's post-apartheid and first democratic government in South Africa. It was designed by considering some of the international (e.g. the United Nations Convention on the Rights of the Child) and continental legislation (e.g. the African Charter on the Rights and Welfare of the Child) as well as the South African Constitution in ensuring the rights of the child for social welfare assistance. It fully replaced the Child Maintenance Grant, designed by the apartheid government, which was racially biased and intrinsically discriminatory. The Child Support Grant was initially introduced with a value of R100 but now has become the single biggest programme for alleviating child poverty in South Africa. Since April 2009, it has had a value of R240 per month per child. According to the report of the South African Social Security Agency (SASSA) in April 2009, the monthly Child Support Grant was paid to nearly eight million children aged 0-15 years. At the beginning, only children from 0-7 years old were eligible for support. However, the government of South Africa has extended it in phases. For example, from April 2005, the age limit was fixed to include children up to 14 years old. At the beginning of January 2009, the age entrance was extended to 15 years old (which means a 14-year-old child can apply for the Child Support Grant). Currently, there are strong indications that the government is considering the extension of the Child Support Grant to children under 18 years old (Finance Minster, Pravin Gordhan, 2010).

In terms of the South African Government Social Assistance Act, 2004 (Act No. 13 of 2004) and considering the huge escalation of the inflation rate, in August 2008, the income threshold for the grant was increased. In addition, the Department of Social Development produced a formula for the means test which is calculated as 10 times the sum of the grant.

The new formula shows that the income threshold is R2, 400 and R4, 400 per month for a single caregiver and a married caregiver respectively. In general, the child support grant is designed to assist in the support of poor children. As of April 30, 2009, children ranging in age from 0-15 years have been paid the Child Support Grant, using a means test approach. According to the Finance Minster (2010) budget speech report, the Child Support Grant will be gradually extended for children up to 18 years old.

The Department of Social Development (2009) and the SASSA (2009), in their reports indicated that, as a general guiding principle, the Child Support Grant should be directed at the child. This is a clear indication that money is always allocated to the caregiver on behalf of the child. One of the criteria to receive a Child Support Grant is the individual income of the caregiver. This includes his or her monthly income and the physical address where the caregiver is living (e.g. rural areas or urban areas – though this distinction has recently been removed). However, according to the general South African government rule, any person who wants to be caregiver must be over the age of 18 years and living with the child in South Africa

***Application process*:** As part of the application process for the Child Support Grant, there are several administrative requirements that any applicant has to present when she or he wants to apply for the Child Support Grant. For example, the following documents are some of the requirements during the application process: South African bar-coded green identity document (ID), original or copy of the child's birth certificate, child's immunisation document, employer's recommendation or support letter, social workers' reports, and others. If the application is not successful, the Department of Social Development is responsible for providing the reason for refusal within three months.

Over the past few years, the South African government has implemented several poverty reduction policies aimed at realising the aim of a better life for all. The number of social grant recipients has also increased extensively, in particular, beneficiaries of the Child Support Grant (Department of Social Development, 2006). Nonetheless, the Child Support Grant has stirred up debates concerning the outcomes of social welfare services and the question of the possible existence of perverse incentives. Some of the concerns include the financial affordability and system sustainability, fraud by involved officers and some unintended effects of the Child Support Grant (such as perverse incentives). In addition to subjective stories among some community members, many hypotheses have been made about this occurrence. For example, a number of claims have been made that the Child Support Grant has some hidden agendas, one of which is to encourage women, particularly teenagers, to have more children, (Department of Social Development, 2006). However, the recent empirical study undertaken by the Human Sciences Research Council shows that there is no association between teenage pregnancy and the Child Support Grant (Makiwane & Udjo, 2006).

Some researchers have argued that the Child Support Grant process discriminates against poor children (Budlender et al., 2005; Hall, 2005). Many poor children, especially in the rural areas, do not have South African identity documents. Parents and caregivers are also not always in a position to pay all the costs involved in the application process. Furthermore, it can be also argued that the system discriminates predominantly against those children who do not have caregivers or parents to access the grant for them (e.g. child-headed households and street children). Analysts also argue that the complex eligibility criteria and the age limits still discriminate against children aged above 15 years.

***The Foster Care Grant (FCG)*:** This is for those children who are placed in alternative care facilities as a result of a decision made by the Children's Court. The Children's Act (2005) contains a mandatory contribution order, requiring maintenance to be paid for children in alternative care such as foster care. According to the new Children's Act, when a decision made by the court for the removal of a child and the placement of the child in alternative care facilities, the government must regularly provide a payment with regard to the maintenance of the child in the form of a grant. In a situation where a parent is employed, then the court requires the parent to contribute towards the child's maintenance. In general, the law requires that a parent or other relative contributes towards the child's care. In a situation where a parent or other relative does not obey the court order, some disciplinary actions may be taken. Depending upon the condition of the child, such as special needs (disability or learning problem), a child may also be provisionally removed and sent for medication or therapy. Experience shows that, most of the time, the costs to treat and keep up a child in alternative care are normally more than what the grant offers. In this situation, parents can then be forced to provide maintenance money if they are employed and can afford to do so.

The foster parent is not the biological parent of the child. Hall (2009) observed that, according to the regulations, the foster parents are not expected to undergo a means test in order to qualify for a Foster Care Grant. However, there is a need to have a court order allowing foster parents to have a child placed in their care. As of April 2009, the amount of money granted for a foster child is R680 per month. Meintjes et al. (2003) noted that the proposed initial idea of the foster grants was to provide the required financial and material support to those children who are removed from their families of origin and placed in a safe environment. The reason for appointing foster care parents is only to ensure the safety of children. Hall, (2008) reported that, in the last few years, applications by people willing to be foster care parents have dramatically increased.

Care Dependency Grants**:** These grants are accessible to the caregivers of particular children who need special care as a result of natural disaster or accident or are born with a natural disability. They are meant for seriously affected children who need special kinds of maintenance care. Hall (2009) noted that in order for a caregiver to access the Care Dependency Grant, he or she needs to present a relevant medical doctor's report. With regard to the Care Dependency Grant, natural, adoptive or foster parents can apply on behalf of the disabled child. However, such type of grant fully excludes those children who are currently cared for by state institutions. The reason for this is that the grant is meant to substitute the lost income of the caregiver who is responsible for taking care of the child. In addition, the grant does not include those infants below a year old because it is assumed that young babies need full-time care, regardless of their disability status. Hall (2009) observed that the amount of support increased to R1010 per month from April 2009.

International and local evidence shows that increasing family incomes through cash transfers or subsidies reduces poverty in households and enhances children's development, educational achievement and health status (Agüero et al., 2008; Barrientos & Dejong 2004; Leibbrandt et al., 2010; Lund et al., 2008; Neves et al., 2010; Rawlings & Rubio, 2005; Schubert, 2005). A report by Save the Children (2005) indicated that social protection in the form of cash transfers can also provide an efficient and effective solution for urgent relief of needy children.

Without doubt, raising the family income in one way or another will have a considerable impact on the livelihoods of all members of the family. This is due to the fact that, as other members of a family's life is improved, they are enabled to meet their own basic needs, which means the probability of targeted grants reaching their intended recipients also increases. Hence, interventions such as raising the quantity of social support can enhance the effectiveness of child-specific benefits and improve access to services such as health care and education.

3.5. Conclusion

Child poverty is a reality affecting both rich and poor countries. It is the root cause of high rates of child morbidity and mortality all over the world in general and Africa in particular. It is argued that all children who live in poverty are denied their international-, regional- and national-level legal rights to survive, the rights to basic health, schooling, participation, decision making, safety from abuse, exploitation and injury, and so on. Empirical evidence also confirms that millions of children are deprived of nutrition, water, sanitation facilities, and access to basic health services, shelter, education and information. Despite all these facts, there is a wide consensus among analysts that social protection, mainly cash transfers play an important role in child poverty reduction and income disparity.

In this chapter, various concepts of child poverty have been considered. Diverse methods of measuring child poverty have also been offered. Chapter 3 also provides a general summary of the role of cash transfers in the process of child poverty reduction. A literature review and effective evaluation of selected documents on the research topic has formed an essential part of the research process. In addition, the synthesis of available research data and analysis and evaluation thereof has also provided relevant and in-depth information and clarification of the subject matter. In general, this part of the study offered a detailed theoretical and scholarly milieu to the study and made the building of a consistent structure from which to launch the study. Against the background of the literature review on child poverty, the following chapter provides a discussion of the analytical tool of microsimulation.

CHAPTER-4: AN OVERVIEW OF MICROSIMULATION

Taxation affects everyone at virtually all stages of the life cycle, so everyone has a personal interest in the tax policy. Every tax policy change involves losers and gainers… the most useful role of models is in supporting rational policy analysis (Creedy et al., 2002:6).

4.1. Introduction

This chapter provides an overview of microsimulation modeling, which is the key methodological technique used in this study. The particular methodological approach used in this study is presented subsequently in Chapter 5. Microsimulation modelling was introduced by Orcutt (1957) in the United States in the late 50s and early 60s. Since then, microsimulation models have become increasingly popular in the social sciences, and they have been used to investigate many issues related to social security and tax (Spielauer & Vencatasawmy, 2001). Two major types of microsimulation models, that is, static and dynamic are widely used for social welfare policy modelling (Citro & Hanushek, 1991; Creedy et al., 2002; Lloyd, 2003; Martini & Trivellato, 1997; Merz, 1994). Static models operate on cross-sectional databases that provide a snapshot of the population at one time (Creedy et al, 2002). They typically include static "ageing" routines to bring their databases up to date or project them into the future. Such routines re-weight the individual records to match outside control totals for key demographic characteristics and make other adjustments for changes in income and employment. Dynamic models operate on longitudinal databases that contain individual histories.

The main purposes of microsimulation models are to analyse and forecast the individual impacts of alternative economic and social policy measures. Generally, microsimulation is a tool which helps for practical policy making as well as for research and teaching. The models allow quantification of some of the policies' effects at the micro level. They are integral parts of so-called *evidence-based* policy making and valuable instruments for politicians (Baroni & Richiardi, 2007).

A microsimulation model for South Africa (SAMOD) is used for the analysis in this thesis in order to assess the impact of the Child Support Grant in terms of responding to child poverty, as well as to gauge the potential impact of possible policy reforms and poverty interventions.

This chapter provides background about microsimulation in general, and SAMOD in particular, which enables the study to analyse the extent to which the Child Support Grant reduces child poverty in South Africa. The following part of the chapter (a) discusses the definition of microsimulation; (b) presents the principles, characteristics and types of microsimulation; (c) considers modelling of behavioural responses and applications of static microsimulation models in the United States, Canada, Europe, and Australia; and (d) provides an overview of SAMOD and its application in South Africa.

4.2. Microsimulation

Different researchers have contributed to the development of diverse types of microsimulation. On the basis of these research studies, different models have been developed and methodological perspectives discussed. In general, the microsimulation model in social science explores the impacts of policy reforms that can arise in different institutions and systems.

Broadly speaking, two major types of microsimulation models, that is, static and dynamic are widely used. In the context of this research, the static microsimulation is more relevant and will act as the basis of the analysis.

Martini and Trivellato (1997:85) defined the microsimulation model as "*computer programmes that simulate aggregate and distributional effects of a policy, by implementing* *the provisions of the policy on a representative sample of individuals and families, and then summing up the results across individual units*". Merz (1994:1) defined microsimulation as "*a forecasting instrument that operates at the level of the individual behavioural entity, such as a person, family, or firm. Such models simulate large representative populations of these low-level entities in order to draw conclusions that apply to higher levels of aggregation such as an entire country*". For Trippe and Stavrianos (1998:2), microsimulation is *"a tool to simulate how a change to a government transfer programme would affect the costs and case load of that programme"*. Microsimulation (Gilbert & Troitzsch, 1999) is based on a large random sample of population (e.g., individuals, households, firms, etc.) that is treated as a unit. According to the International Microsimulation Association (2008:1), the term *microsimulation* refers to a

> *technique that operates at the level of individual units such as persons, households, vehicles or firms. Within the model, each unit is represented by a record containing a unique identifier and a set of associated attributes, e.g. a list of persons, with known age, sex, marital and employment status, or list vehicles with known origins, destinations, and operational characteristics. A set of rules are then applied to these units leading to simulated changes in state and behavior. These rules may be deterministic (probability = 1), such as changes in tax liability resulting from changes in tax regulations, or stochastic (probability <=1), such as chance of dying, marrying, giving birth or moving within a given time period. In either case the result is an estimate of the outcomes of applying these rules, possibly over many time steps, including both total aggregate change and, crucially, the distributional nature of any change*

The term *microsimulation*, in the context of this research, refers to a computer-based programme that takes survey data on individuals and calculates the entitlements of individuals and households to social benefits. Here, computer programmes help to simulate aggregate and distributional effects of a policy, by implementing the provisions of the policy on a representative sample of individuals and families, and then summing up the results across individual units.

Researchers (Baroni & Richards, 2007; Citro & Hanushek, 1991; Lloyd, 2003; Martini & Trivellato, 1997; Merz, 1991, 1994) have indicated that microsimulation models have been increasingly applied in recent years in quantitative analyses of economic and social policy problems. Baroni and Richards (2007) noted that, while the majority of these models remain within the domain of academic institutions, public institutions are becoming increasingly interested in taking over the construction of such models. Today, microsimulation is used in almost every developed country as well as in some emerging or developing countries such as South Africa (SAMOD).

Merz (1994) claimed that, because microsimulation is concerned with the behaviour of micro-units (such as persons within a family/household/firm, tax units or as decision units in firms or communities) and is preferably based on a representative sample, it is especially well suited to analyse the distributional impacts of policy measures of those who are affected by its application. He further maintained that microsimulation is considered as a forecasting instrument because policy effects can be forecast by a microsimulation. When forecasting the direct and side effects of a policy, a baseline simulation is needed to predict the "no policy" situation. Usually, the baseline simulation tries to forecast a "status quo" development, although it is a matter of interest and definition as to what will, in fact, be the baseline. With alternative scenarios, a comparison of their impact then shows the main and side effects of policy.

Principles of microsimulation: Since real-world social systems are hardly available as an experimental centrefield, the introduction of an alternative technique or tool is very important: "*Microsimulation is a method of problem-solving, because conventional analytic, numeric or physical experimental methods would be too time-consuming, expensive, difficult,* *hazardous and/or irreversible or, even, impossible as real world experiments*" (Mertz, 1994:3).

Merz argued that, on the one hand, simulation-supported analyses are useful in creating theories as well as in examining effects of policy options at different levels. On the other hand, simulations help to create new theories by simulating the formulation of behavioural hypotheses for the model's purpose. Accordingly, analyses of the impacts of policy options can be executed if behavioural hypotheses and institutional relationships have been satisfactorily established in a simulation model. In general, the impact analysis follows a certain pattern and aim of investigation. According to Merz, the principles and structure of a microsimulation model are mainly determined by relations expressed in mathematical/algebraic relations.

In light of the principles, algebraic equations and the decision-making structures of the microsimulation model, it is expected that the tool that can be characterised by 'if-then' relations in a computer model will facilitate a process towards assessing social policies in South Africa. Next, the characteristics of a microsimulation model will be presented.

***Characteristics*:** Researchers need to include a number of essential characteristics in a microsimulation. These include size, structure of kinship networks, age of an individual, number of children in a family, income and transfers of a household and/or a respective tax unit, employment structure of a firm, and others. There is a need to establish a wide variety of individual characteristics for the population at the start of the simulation -- the base data -- and tables or equations for computing the probability of each event outcome during the simulation are also needed.

Merz (1994) explained that simulation can be done at macro, meso (group, cell), and micro information levels. First, macroeconomic simulation is a way that the user can examine how aggregates of a nationwide economy, like consumption, savings, overall social security expenses, and so on, react to certain events by introducing certain scenarios into the simulation. The simulation sets a start point for each scenario as initiated by the user. Second, the meso level takes some societal groups gathered in 'cells' as the unit of interest (e.g. population aggregated in different age and/or other socioeconomic groupings). Third, in contrast to the macro- and meso-type simulation models, microsimulation is directly concerned with the individual units or micro-units, that is, persons, families, households, tax units, decision units in firms, firms themselves, unions and so on, in their respective associations (Merz, 1994).

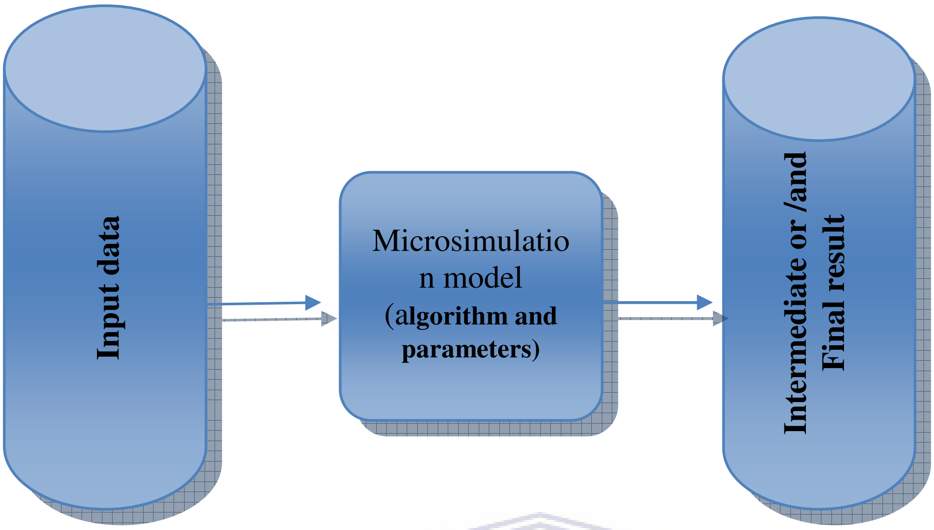
Key features: Microsimulation normally falls within the micro-economic approach and is rather similar to behavioural econometrics models, which often are indeed built in as parts of a larger microsimulation. A key distinguishing feature of microsimulation is the degree of structural econometric modelling, that is, the degree to which the included behavioural equations are modelled according to a predefined economic theory (Baroni & Richiardi, 2007).

Microsimulation models are commonly contained in a number of partial equilibrium sub-models, or modules. These modules can be thought of as compartments connected by simplified causal relationships. Indeed, there might be feedbacks between different modules, but these feedbacks are never simultaneous: if at time t the outcome of module A (e.g. education) affects the outcome of module B (e.g. employment), it cannot be the case that at the same time t, the outcome of A depends on the outcome of B. This explains the main features and distinction between microsimulation and general equilibrium models, where the system is modelled as a set of simultaneous, possibly dynamic, equations (Baroni & Richiardi, 2007).

Having placed microsimulation within a more general framework of analytical tools, the discussion can now move on to the specific features which characterise this methodology. Under the label of microsimulation, there is in reality a vast range of different models which are somewhat unique in their design due to their specific purpose or data. There is, however, a key structure common to all microsimulation models which provides the underlying link between a model's inputs and its outputs. This structure is meant to draw some statistically valid inferences about a population, given some carefully sampled data (Baroni & Richiardi, 2007).

Basic elements**:** Microsimulation models are constructed around a micro-database, which at time t = 0 is usually a sample from the same real population. Each unit is represented by a code containing a unique identifier and a set of linked attributes, for example, a list of persons characterised by a given age, sex, household composition, employment status, wealth and income, and so on. Algorithms are then applied to these units, leading to simulated changes in state and behavior. An algorithm is a specific set of instructions for carrying out a procedure or solving a problem, usually with the requirement that the procedure terminates at some point. Specific algorithms sometimes also go by the name method, procedure, or technique (Baroni & Richiardi, 2007). According to Sauerbier (2002:3), "*for example, a person can get married or divorced, have a baby or die. The end result of that process is a micro-database that should be representative of the underlying population in the future period t+1 together with a set of statistics for the events (e.g. marriage, death) that have happened in the simulated period*". Figure 4:1 gives the basic elements of a microsimulation model.

Figure 4:1 A microsimulation model



Source: Molnar (2005). A microsimulation model.

Over the years, researchers have also identified the basic data requirements in microsimulation models as those of the distinguishing features, as compared with the traditional techniques, methods and tools used mostly in social sciences. In microsimulation models, the data set for estimation can be used as a cross-section, a time series of cross-sections or panel data. In this regard, Baroni and Richiardi (2007) further explained the categories in different ways. First, all cross-sections contain information about a number of surveyed units at one point in time. Second, when different cross-sections are collected over a number of time periods, possibly surveying different individuals, the result is a time series of cross-sections. Finally, when multiple observations of the same individuals over time are made, the result is a panel.

4.3. Types of microsimulation

The two major types of microsimulation models which are widely used for social welfare policies are static and dynamic modelling (Citro & Hanushek, 1991; Creedy et al., 2002; Lloyd, 2003; Martini & Trivellato, 1997; Merz, 1994). Static models operate on cross-sectional databases that provide a snapshot of the population at one time (Creedy et al, 2002:8). They typically include static "ageing" routines to bring their databases up to date or project them into the future. Such routines re-weight the individual records to match outside control totals for key demographic characteristics and make other adjustments for changes in income and employment. Dynamic models operate on longitudinal databases that contain individual histories. They "grow" their databases forward in time by applying transition probabilities to each record for such events as birth, death, marriage, labour force status change, and so on.

Within these two distinct model types, there are variations in handling common functions that result from such factors as differences in client needs and in styles of the model developers.

The general ideas and principles of these typical models will be discussed in the sections to follow.

Static microsimulation model

Static microsimulation models usually take a cross-section of the population at a specified point in time and apply programme rules to the individual units to measure the instantaneous effects of policy changes. The starting point for most static microsimulation models is a unit record file, which provides comprehensive information on such things as earnings, size, structure of kinship networks, age of an individual, number of children in a family, income and transfers of a household and/or a respective tax unit, labour force status, education, and housing status for every individual on the file.

Lambert et al. (1994) argued that static microsimulation models usually, although not always, show the so-called "first-round/morning after" effects of policy changes, before individuals have had time to adjust their behaviour to the changes. Baroni and Richiardi (2007) noted that these models will allow the researchers to vary the rules of eligibility or liability and produce output showing the gains or losses (both to individuals and in aggregate) from the policy change. However, some analysts (Baekgaard, 1996; Klevmarken, 1997; Klevmarken & Olovsson, 1996; Symons & Warren, 1996) argued that static microsimulation models have a comparative advantage when it comes to modelling to policy decisions.

Static microsimulation models are normally based on household micro-data to estimate the revenue cost distributional effects of tax and benefit policy changes. They are invaluable for the design and evaluation of policy reforms. Static models allow holding constant many variables so that a study can focus on the aspects of interest. In addition, they also help to separate the direct effects of changing tax and social security policy on incomes from all the underlying influences on income and from the other characteristics and behavioural patterns of a particular population (Sutherland, 2000).

Static ageing: Static microsimulation models use static ageing techniques, which include changing certain variables on the original micro-data files to produce a file with the demographic and economic characteristics expected in the future year. According to Merz (1994), technically, static ageing procedure involves applying adjustment factors to account for changes in the population structure, inflation, the distribution of income and changes in policy rules. Static ageing accounts for changes in the population structure by assigning weights in such a way that the external control totals represent forecasts rather than describing the situation in the year in which the survey was conducted. Merz further argued that in static ageing, the temporal adjustment of the demographic arrangement is reached mainly by re-weighting the existing information according to exogenous, given aggregate data of another time period. After re-weighting a sample, one micro-unit will then represent a certain number of particular units in the whole population. According to him, in static ageing, the relations among the variables of each micro-unit are generally maintained. An overall structural amendment is expressed by a changed weight of each micro-unit, respectively, of each association of micro-units (e.g., families, households). Thus, the cross-section after simulation (t + v, v=0, 1, 2...) contains the equal number of micro-units (n) as the cross-section before simulation (t).

Merz (1994:6) maintained that

> *a static ageing procedure is relatively well-suited for short- and medium-range forecasts provided it can be assumed that the characteristics of the population under examination do not change rapidly. If the demographic structure essentially changes,*

which is particularly likely in the longer run, the use of 'dynamic ageing' in the framework of dynamic microsimulation will be more appropriate.

However, Baroni and Richiardi, (2007) argued that, in some cases, static microsimulation models are used to make short-term forecasts (one or two years ahead, for instance), under the assumption that only small changes to the fundamental structure of the population of the economy or individual behaviours would occur within such a short time span.

A number of authors (Creedy et al, 2002; Merz, 1994; Redmond et al*.*, 1998) agreed that static microsimulation models have relative advantages over the dynamic microsimulation models. For example, Redmond et al. (1998) noted that, in static microsimulation, using the extensive information about the characteristics of age, sex, income, wealth and so on, and the current legislation regarding tax and benefits, it is possible to simulate the budgetary and distributional effects in different policy regimes. Creedy et al. (2002) showed that static microsimulation models are easy to build and maintain. They added that they are easy to use and quick to run and, therefore, can be accessed by a wide range of users. For Merz (1994), the primary advantage of using static microsimulation models is that they are less expensive. Even if substantial modules (such as education, labour force, income, and expenditure modules) are integrated into a static simulator in the same way as into a dynamic model, the static approach is less expensive because time-consuming simulation of demographic processes with interactions among members of different micro-unit associations such as marriages and market processes are omitted. Baroni and Richiardi (2007) observed that microsimulation models are simple to create and can offer a cost-efficient tool for certain types of policy analysis, and the model can answer the question regarding what the variation in variable and for household h at time t + 1 would be if policy rules r were applied, everything else remaining the same.

A large number of static microsimulation models are currently used across the world by government departments and research institutes, such as, for example, FAMSIM (Austria), GLADHISPANIA (Spain), SPSD/M, (Canada), STINMOD (Australia), TAXMOD, PSM and POLIMOD (UK), TRIM, MATH, STATS, OTA and TAXSIM (US) and EUROMOD in Europe.

It is argued here that static microsimulation is appropriate and applicable in terms of quantifying the financial impact on child poverty of current government policies, to illustrate the impact of various taxes and benefit policies that could be implemented. For example, static microsimulation can clearly help to show how an increase in the Child Support Grant affects income distribution, as well as the budget. It is also further argued that the strength of micro-models, as opposed to macro-models, is the possibility of getting detailed information about the distributional effects of policy changes. All child-related policy reforms can be measured in terms of "winners" and "losers" and changes in measurements like the Gini co-efficient can easily be calculated.

Dynamic microsimulation model

Dynamic microsimulation models are primarily used to analyse economic, social and public policy that involves a time dimension. These models help to project the population forward in time so that the sustainability and performance of public policies like pensions, long-term care and education financing can be evaluated. Moreover, it also takes into account methods and results from other kinds of analyses, such as behavioural micro-econometrics.

Dynamic ageing simulates transitions at the individual level and thus produces hypothetical sets of panel data. Simulated transitions include changes in demographic characteristics, educational qualifications, labour market patterns and income mobility. Merz, (1994) noted that in dynamic microsimulation, individually based ageing by survival probabilities is applied for each micro-unit of the whole sample. In addition to a micro-unit's survival, a child (or children) could be born within a simulation period or a family and household situation might be altered by marriage, divorce or other occurrences. Thus, individual dynamic demographic ageing will change the size of the cross-section under study; in general, the cross-section after simulation (t+1) does not contain the equal number of micro-units (n and associations thereof) as the cross-section before simulation (t). According to Lambert et al. (1994) and Merz (1994), the distinguishing feature of dynamic microsimulation models is the ageing of the original unit records on the basis of probabilities of different real-life events occurring. This allows the original population to be projected forward in time, while maintaining detailed information on the individuals within the simulation. In this regard, Merz (1994) stated that static microsimulation ageing is done by re-weighting. In a dynamic microsimulation model, each micro-unit is aged individually by an empirically based survival probability.

Baroni and Richiardi (2007) pointed out that the most standard process included in dynamic models used for economic policy evaluation are demographic changes, marriage and household formation, educational path, health status, labour market status, taxes and benefits, as well as savings and wealth.

The overall advantage of dynamic microsimulation is the presence of information on the entire life cycle of each “sample” member. This is of interest for life-cycle analyses of earning patterns with both income from former rewarding employment and, afterwards, income from pension security systems.

The number of micro-units involved in the life cycle (dynamic microsimulation) is reduced to those micro-units of real full life-cycle interest. Correspondingly, the expenses are only a fraction of a comparable full cross-section simulation (Merz, 1994). He added that dynamic microsimulation is individually forecasting all micro-units of a given sample, and dynamic life-cycle or longitudinal microsimulation creates a cohort of "synthetic" micro-units with complete life cycles from birth to death. Thus, a dynamic microsimulation does not forecast the characteristics of real sample units but the assigned characteristics of synthetic micro-units. All characteristics of a synthetic micro-unit are determined by the behavioural and institutional modules. A complete life cycle of a synthetic micro-unit is simulated period by period and may include information on spouse and children if the micro-unit has married and brought up children during its lifetime. A number of simulated life cycles then constitute a sample of a certain cohort.

Examples of dynamic microsimulation models include DESTINE (France), DYNACAN (Canada), DYNAMITE (Italy), DYNASYM and PENSIM (US), LIAM (Ireland), MIDAS (New Zealand), MOSART (Norway), PENSIM II (UK), and SESIM (Sweden).

The advantages of using dynamic microsimulation models include helping to simulate inter-temporal issues requiring historical information and allowing the inclusion of future behavioural adjustments of the population to either policy reforms or to changing economic, demographic or social scenarios. However, their limitations include large data requirements, large building and maintenance costs and lack of an agreed validation methodology.

Similarities and differences

Both static and dynamic microsimulation types have relevance to the application of income distribution analysis, and the benefits of any of them cannot be ruled out. However, the conceptual difference between static and dynamic microsimulation is that the static model will take a cross-section of the population at a specified point in time and apply the tax-benefit rules, for example, to see the effects of policy changes. Usually, the impact shown by these models is also known as the "first round" effect, showing the gainers and losers, whereas the dynamic models differ in the technique by which they simulate the effects of time on population. They can model an individual's transition based upon the occurrence probabilities of real-life events, thus allowing the previous population to be projected in a future time period.

4.4. Examples of static microsimulation models

The last few years have seen a rapid evolution in the sophistication of different kinds of microsimulation models and a major expansion of their use in social, economic, research and planning practices. The choice and application of computer-based microsimulation models is governed by the objectives of the analysis as well as the available resources. Hence, understanding the application of static microsimulation in different parts of the world and their contexts helps to inform the successful implementation of the proposed analytical tool of the study. In addition, assessing experience, use and application of microsimulation models in different parts of the world further supports the credibility of the tools. As a result, researchers, practitioners and decision makers will be equipped to make informed decisions that will account for current and evolving technology.

The countries which are considered here have a variety of static microsimulation models for the analysis of government policies and illustrate the impact of various taxes and benefit policies that could be implemented. Despite the history and 'permanence' of some of these arrangements, all systems have undergone, or are undergoing, change. Countries examined also have different histories and institutional arrangements for the development and implementation of the static microsimulation models at different levels. In general, the experiences of other countries suggest that microsimulation models are the key tools for analysis of the tax and transfer programmes. The following section provides a review of the application of static microsimulation models in different parts of the world and their analysis, with an overarching focus on existing and future alternatives.

Static microsimulation in the USA

Microsimulation models originated in the United States in the late 1950s and the Urban-Brookings Tax Policy Center model is a large-scale microsimulation model of the US federal tax system. The federal statistical system also provides a wide range of micro-data on which models can draw. For example, static microsimulation models in the United States include models such as the transfer income model (TRIM), the expanded transfer income model (TRIM2), reforms in income maintenance (RIM), micro analyses of transfers to households (MATH), simulated tax and transfer system (STATS), OTA, TAXSIM and HITSM.

According to Merz (1994), RIM was developed at the Urban Institute toward the end of the 1960s. The study was commissioned by the Department of Health, Education and Welfare, the predecessor of the current Department of Health and Human Services. He added that, since about 1976, TRIM (transfer income model), an updated version of RIM, and the expanded TRIM2 are the most widespread static microsimulation models in use in government agencies as well as in other institutions in the United States. Merz argued that the TRIM/TRIM2 package allows for an adjustment in the population development ("static ageing") in short- and medium-range simulations. It also makes it possible to simulate a variety of income transfer programmes.

Citro and Hanushek (1991) noted that in the United States, for example, Congress will not consider any social security or tax legislation without closely examining the distributional outcomes predicted by microsimulation models. The models calculate tax liability for a representative sample of households, both under the current rules and under alternative scenarios. Based on these calculations, the model produces estimates of the revenue consequences of different tax policy choices, as well as their effects on the distribution of tax liabilities and marginal effective tax rates. The models are also a useful input to research on the effects of taxation on economic behaviour.

Static microsimulation in Canada

Statistics Canada has developed a number of microsimulation models as well as general-purpose tools that assist in their construction. The Canadian Department of Finance is also presently using a static microsimulation model, TTSIM, which simulates the distributional impacts of tax-transfer programmes such as federal goods and services tax, payroll tax, elderly benefits, refundable sales tax credit, provincial and federal income taxes, child benefits, and so on. The model takes into account data from three sources: the Survey of Consumer Finances, family expenditure data and individual tax data.

As another example, SPSD/M is a detailed cross-sectional microsimulation model of individuals and families (Statistics Canada, 2009). It is based on a non-confidential annual database, constructed by using a variety of survey and administrative data sources. SPSD/M is used for policy development and analysis of federal and provincial tax and transfer programmes, as well as for analysing issues related to income distribution. It has assisted those interested in analysing the financial interactions of governments and individuals in Canada. It can help one to assess the cost implications or income redistributive effects of changes in the personal taxation and cash-transfer system. The SPSD/M is a non-confidential, statistically representative database of individuals in their family context, with enough information on each individual to compute taxes paid to and cash transfers received from government. The SPSM is a static accounting model which processes each individual and family on the SPSD, calculates taxes and transfers using legislated or proposed programmes and algorithms, and reports on the results. It gives the user a high degree of control over the inputs and outputs to the model and can allow the user to modify existing tax/transfer programmes or test proposals for entirely new programmes. The model can be run using a visual interface and it comes with full documentation.

Static microsimulation in Australia

Lloyd (2003) noted that STINMOD is NATSEM's static microsimulation model of Australian income taxes and cash transfers. It is publicly available, runs on a personal computer and can be accessed via a user-friendly interface. Bremner et al. (2002) remarked that, in essence, STINMOD applies the rules of the income tax and government cash-transfer programmes to a database of income units representing the Australian population. It helps to analyse the distributional impact of current tax-transfer policy or to estimate both the fiscal and distributional impacts of policy reform. Lloyd (2003) and Lutz (1997) showed that STINMOD can be used to analyse the distributional impact of current tax-transfer policy or to estimate both the fiscal and distributional impacts of policy reform. The first version of STINMOD was released in 1994. Since then, the entitlement modules have been largely rewritten to take account of the major changes to the tax and transfer systems associated with the introduction of the goods and services tax reform package in July 2000. It is now the standard model used by the Australian federal government departments for their analyses of possible budget policy options in this area.

Static microsimulation in Europe

A number of static microsimulation models have been built in Europe. Lietz and Mantovani (2006) noted that, in the early 1990s, Merz surveyed more than 40 major national models across Europe (mainly Germany). A few years later, Sutherland described 19 static models already in use in five countries of the European Union. Examples of such developments of tax-benefit microsimulation models at the national level in Europe include TAXMOD,

POLIMOD, GLADHISPANIA, FAMISIM, MIMOSIS, and TUJA. Most of these models assess the possibilities of several policy options that ultimately lead to a consolidated redistribution drive.

Merz (1994) observed that microsimulation models are used mostly in Europe by government organisations to examine taxation issues that occur in the area of individual income tax. However, some countries have undertaken to build microsimulation models for corporate taxes in the business sector as well. Nowadays, almost all European countries have microsimulation for personal income taxation at their disposal. Brief descriptions of static microsimulation in Europe for selected countries are presented below:

Table 4:1 Summary of static microsimulation in Europe for selected countries

Countries	Type of static microsimulation	Purpose
Belgium	MIMOSIS	To analyse the effects of policy changes on both the individual and household level and for different socio-economic and demographic groups
Great Britain	TAXMOD, POLIMOD	To assess a variety of tax-benefit policies, including the analysis of policy changes on poverty and inequality in a number of studies
Finland	TUJA	To analyse the financial and distributional effects of practically all significant tax and benefit reforms
Italy	EconLav	To analyse the effects of policy reforms on labour supply (participation versus non-participation and employment versus self-employment working activities), income distribution, poverty, public budget and tax incidence.
Spain	GLADHISPANIA	To analyse and explore the effects on redistribution and inequality when the 1999 system was replaced by a flat tax combined with a vital minimum (i.e. an amount of income that is not taxed) or a basic income (i.e. an amount of money that was given to everyone, independently of the economic status.

EUROMOD

EUROMOD is a static microsimulation model used in many European Union countries. It was developed by a team from 18 institutions, co-ordinated by the Microsimulation Unit in the Department of Applied Economics at the University of Cambridge, with the financial support of the European Commission programme of Targeted Socio-Economic Research (TSER) (Levy et al., 2006; Lietz & Mantovani, 2006; Lietz & Sutherland, 2005).

The main purpose for building an integrated European tax-benefit microsimulation model arose from research questions in public economics and, more precisely, those investigating the characteristics of tax-benefit systems and the comparative impact of common reforms across Europe (Lietz & Mantovani, 2006:3). According to Lietz and Mantovani , these very decisive policy questions led to the need for a more reliable tool in order to undertake cross-country assessment and make use of tax-benefit microsimulation techniques applied at European level as microsimulation appeared to be a promising approach. EUROMOD allows research on the effects of tax-benefit systems by facilitating the measurement of their impact on incomes, poverty, inequality and social inclusion. Lietz and Mantovani (2006:2) further noted that the model is designed to answer "What if?" questions about different approaches to policy reform at European level.

Immervoll et al. (2000:2) explained that *"EUROMOD provides a Europe-wide view on social and economic integration policies that are implemented at European, national or regional level. It is also designed to examine, within a constant comparative framework, the impact of national policies on national populations and the differential impact of coordinated European policy on individual Member States"*. According to them, tax-benefit models incorporate household micro-data from nationally representative sources and are able to (a) capture the full range of difference of family circumstance without needing to define what is "typical" or "representative", (b) predict aggregate effects on the basis of many observations from survey data that in combination are representative of the national population, (c) assess the effect of detailed policy measures on disposable incomes -- the models offer distinct "levers to pull" and "buttons to push" so that simulated changes translate directly into changes to actual policy rules that governments or other agencies can make, and (d) give a distributional analysis and focus on particular socially-defined groups of interest.

Immervoll et al. (2000) further indicated that EUROMOD is a static microsimulation model that generally does not attempt to capture individual behavioural responses to changes in policy. They also argued that the model has the potential to be used as a platform for particular analyses of behavioural change. Users of EUROMOD are not constrained to accept particular behavioural relationships, hard-wired into the model. In principle, they will be able to implement their own chosen approaches.

Static microsimulation models in Africa: As part of designing Africa's poverty reduction strategies, Adelzadeh, (2005) developed a microsimulation model that is accessible on the internet, where the user can modify certain elements of the existing system and add in a basic social assistance benefit. His internet-based facility provides user-friendly access to five African country (Botswana, Cameroon, Nigeria, South Africa and Uganda) microsimulation models. According to him, it is possible to develop "own" tax and transfer policy scenarios or conduct "what if?" simulation analysis. Adelzadeh further demonstrated that each model provides the poverty, distribution, and budgetary impacts of one's policy choices and compares the simulation results with the current state or the base scenario. In the context of Namibia, Haarmann and

Haarmann (2005) also used a microsimulation model to illustrate the distributional effects in the highly unequal Namibian society. They argued that the model is able to show the distributional effects (nationally as well as disaggregated into rural/urban etc.) of the possible policy intervention of introducing a basic income grant in Namibia.

Static microsimulation models in South Africa: Numerous researchers in the field (Adelzadeh, 2005; Haarman, 2000; Haarmann, & Haarmann, 1998; Haarmann & Haarmann, 2006; Herault, 2005; Samson et al., 2002; Samson et al., 2004; Woolard, 2003) developed and/or worked with the analytical tool of the microsimulation model to provide an explanation for social welfare policies and poverty in the context of South Africa. For example, Adelzadeh developed the South African tax and transfer simulation model (SATTSIM) that is accessible on the internet, where the user can modify certain elements of the existing system and add in a basic social assistance benefit (Adelzadeh, 2005). In the context of South Africa, he also used a microsimulation model of tax and transfers, to compare and contrast the effectiveness of 10 policy scenarios to halve poverty and unemployment by 2015. The Economic and Policy Research Institute (EPRI), using a microsimulation model, also investigated the social and economic impact of the existing social benefits in South Africa. The results of this study provide evidence that the household impacts of South Africa's social grants are developmental in nature (Samson et al., 2002; Samson et al., 2004). Woolard's (2003) microsimualtion model assesses the impact of a basic income grant (BIG) on poverty gap measures, examines the redistributive impacts of the tax system, and looks at the relationship between social assistance grants and economic growth. Her model demonstrates the feasibility of combining corporate and personal income tax increases to recover the cost of the grant. She argued that BIG is the foundation for all other social grants. Haarman (2000) also modelled the impact of existing social grants on poverty and tested the impact of potential reforms using a microsimulation model. In addition, research has also been undertaken on linking microsimulation models with computable general equilibrium models (Herault, 2005). The model developed by Herault examines how macro-shocks and policy changes lead to macroeconomic changes. However, very few microsimulation studies have been focused explicitly on child poverty.

Analysis of child poverty using static microsimulation: International experiences

Levy et al. (2006) showed an application of EUROMOD to explore the prospects for a guaranteed income for every child in the European Union and its potential effects on child poverty. They examined the extent to which existing levels of financial support for children through national taxes and benefits fall short of a series of illustrative minimum levels of income corresponding to proportions of median income. Using EUROMOD, they estimated the cost of bringing the amount of support up to these levels for all children as well as the corresponding impacts on income poverty among EU children.

Making use of the EUROMOD, another multi-country comparison of tax-benefit systems has been conducted by Levy et al. (2008). They assess the consequences of the recent reform in Poland and examine the outcome in comparison to child policies in three other European systems, France, the United Kingdom and Austria. The results of their study show that poverty reduction would have been more pronounced in Poland if child policies were changed along the lines of the system in France or the United Kingdom. The Austrian system – relying primarily on universal benefits – would bring about a similar reduction in the poverty rate but with much greater reduction in the poverty gap. The findings detailed distributional analysis under the different systems assuming the cost of "importing" each of them to be the same as that of introducing the 2007 reform.

As another example, in the Southern European context, Matsaganis et al. (2005) undertook a study on the drive to reduce child poverty, where the subsidiary role of the state in matters of family policy has implied that programmes of public assistance to poor families with children are often meagre or not available at all. Their research approach was purely quantitative and, exclusively using the European microsimulation model, they examined the effect of family transfers on child poverty in Greece, Italy, Spain and Portugal. Using evidence from the European microsimulation model, the researchers first assessed the distributional impact of existing family transfers and then explored the scope for policy reforms. The findings indicated that the simulated effects of universal child benefit schemes are similar to those in Britain, Denmark and Sweden. Their report concludes with a discussion of key findings and policy implications.

From the above review, it is clear that microsimulation models can be used for analysing the impact of the Child Support Grant on child poverty in South Africa. The static microsimulation model can be used to illustrate most of the main characteristics of welfare-based principles and can be used to examine the effectiveness and the extent of social welfare policies of the Child Support Grant in terms of responding to child poverty. Given the discrimination and inequality of the past in South Africa, the need for a comprehensive approach to redress this through the design of acceptable policy and implementation strategy is also crucial. In this regard, it is argued that the microsimulation model, particularly SAMOD, helps to assess the usefulness of the existing Child Support Grant in South Africa.

4.5. Overview of SAMOD

Microsimulation procedures are designed to examine social and economic changes by assessing the effects of various policy changes on small units – in this case, households – and the description of macro-level effects is achieved through aggregation of micro-level changes.

SAMOD is a static microsimulation model developed for the South African Department of Social Development by researchers from the Centre for the Analysis of South African Social Policy (CASASP) at the University of Oxford in collaboration with Professor Sutherland at the University of Essex and Dr Woolard at the University of Cape Town. A first working version (SAMOD v1.1) was developed using the EUROMOD platform, which was made available to the research team (Wilkinson, 2009).

Since the development of SAMOD, the focus has been to analyse different hypothetical social security scenarios. SAMOD is a tax-benefit microsimulation model which enables research on the effects of tax-benefit systems by allowing the assessment of their impact on income, poverty and inequality. In particular, the model is designed to answer "what if?" questions about different approaches to policy in SA.

In this thesis, SAMOD is used to assess the impact of the Child Support Grant in terms of responding to child poverty, as well as to gauge the potential impact of hypothetical policy reforms and poverty interventions.

Important features of the model

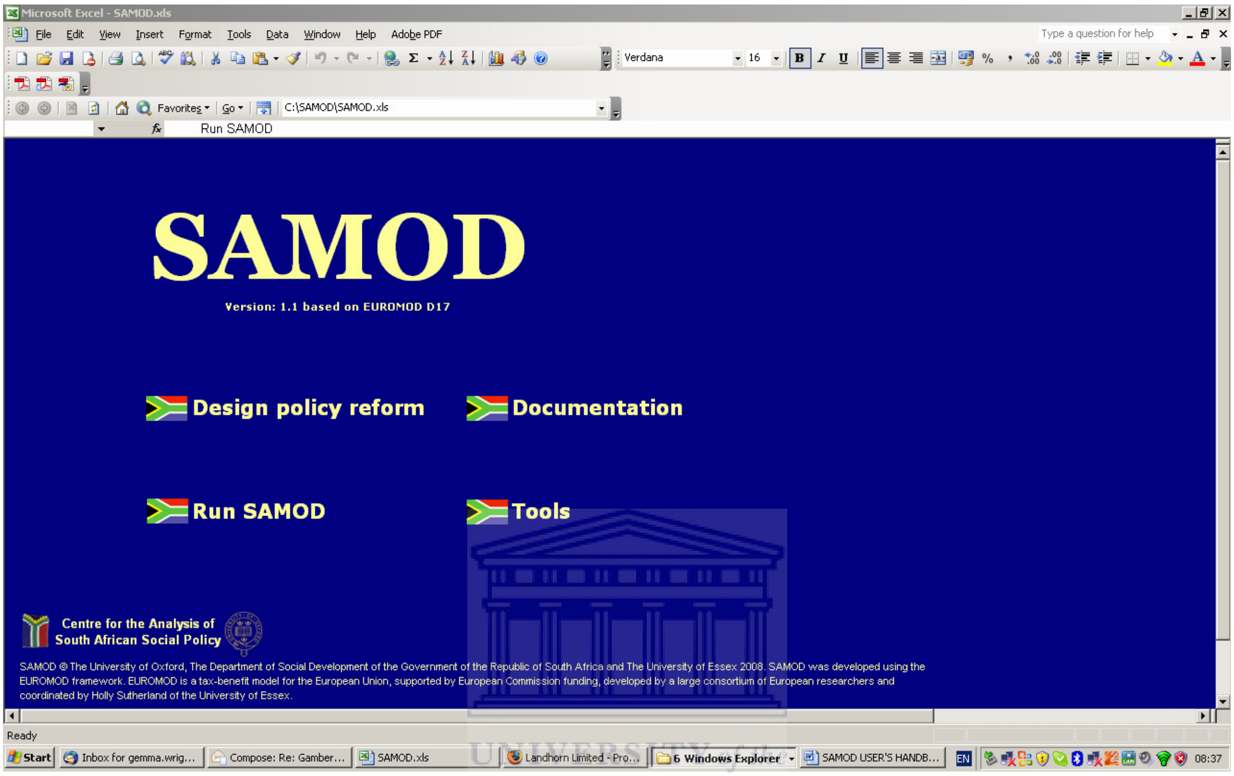
SAMOD was designed to be as user friendly as possible (Wilkinson, Wright, & Noble, 2009). Another basic requirement of the model is the high degree of flexibility, which means that the adjustment of parameters should be made possible in an interactive way. The model is static; therefore, the "next day" impact of policies can be considered. Individual behavioural changes are not considered. The model aims to analyse the effects of possible tax and benefit regimes and to quantify the differences between regimes by parametrising the "new" tax or social policy regulation and producing output tables for the effects (Wilkinson et al., 2009).

Wilkinson (2009) argued that most of the existing microsimulation models in South Africa have limitations. These include (a) analysts do not have the capacity to modify and develop the models, only to use them to run simulations, (b) the parameters can only be changed by the model developers and policy reform cannot be done by external users, (c) the calculations carried out by models are only "accessible" to the model builder; thus, there is a lack of transparency in the arithmetic procedures underlying the policy simulations. Hence, she argued in favour of the development of SAMOD, which could be used by analysts within government and which had the flexibility to allow users to alter policy parameters and build in entirely new policies. Wilkinson maintained that SAMOD operates via user-friendly, front-end menus. For each tax-benefit system (i.e. group of tax and benefit rules relating to a particular time point or to a hypothetical set of tax and benefit arrangements), SAMOD calculates the gross end net incomes of each individual household and tax unit in the data base. It also provides details of the effects of changing the tax system on the benefit level and net incomes of individuals. The model contains a user-friendly "back end", allowing, through a set of menus, the calculation of summary measures of distributional changes. These include the Lorenz curves of net income and changes in a variety of inequality measures and a range of poverty measures supported with diagrams showing the incidence and intensity of poverty.

SAMOD also produces a set of menus, a wide variety of summary tables showing the characteristics of gainers and losers from the specified tax structure change and calculates the overall tax revenue and expenditure effects of a tax policy changes. Diagrams and tables can also be printed and pasted into a document. It also enables the tables to be written to other files for further analysis, using other software (Wilkinson et al., 2009).

The main Operating system of SAMOD has four menu options namely, Design Policy Reform, Run SAMOD, Documentation, and Tools. The Design Policy Reform button links to the part of the model where all the POLICY rules and PARAMETERS are specified. The Run SAMOD button is for producing the output and the Documentation button contains a link to important supporting documentation. The Tools button contains various useful additional tools, for the proper operation of the model (Wilkinson *et al*. 2009). Figure 3-2: shows the SAMOD Operating System.

Figure 4:2 SAMOD operating system



Source, Wilkinson et al. (2009)

SAMOD data input files undergo a series of transformations in preparation for modelling. For example, the weighting factors provide information about the number of each type of household in the population. This means that the aggregate revenue and expenditure values reflect national aggregates and the distributional analysis represents the South African population rather than the sample characteristics (Wilkinson et al., *2009*).

Parameters and details of the SAMOD model

SAMOD has six parameter files. These include the Control File, the Spine File, the Policies File, the Tax Unit File, the Income List File and the Vardesc File. A brief description of parameter files and their application in SAMOD is presented below.

- ***The Control File*** stores information about each system-dataset combination that can be simulated in the model. Essentially, this file tells SAMOD which datasets are available and which tax-benefit system(s) is going to be simulated with each dataset. In addition, Control File documents which parameter files store the information on each system. Though the Control File can contain various worksheets, in SAMOD v1.1 there is only one worksheet. Each sheet of the Control File contains information on one dataset and the systems which can be simulated in combination with this dataset (Wilkinson et al., 2009).

- ***The Spine File*** tells SAMOD which taxes and benefits to simulate and in which order they should be run. It contains a number of worksheets, each characterising the tax-benefit order of calculation of a specific system. However, in SAMOD V1.1 there is only one worksheet in the Spine File. This is because the list of policies and the order they are simulated in does not vary between 2007 and 2008 (Wilkinson et al., 2009).

- ***The Policy Files*** hold all the parameters for each policy in SAMOD. The policies in SAMOD V1.1 are Extended Standard Output (individual level), Standard Output (household level), Income Tax Rebates, Income Tax, Unemployment Insurance Fund Contributions, Unemployment Insurance from UIF contributions, Care Dependency Grant, Foster Child Grant, Child Support Grant, Old Age Grant, Disability Grant, Grant in Aid, Fuel Levy and VAT and Excise Duties. Policy files are broken up into common modules. Each of the policy modules is a self-contained building block and has its own parameters in order to represent a particular component of the policy. According to Wilkinson et al. (2009:16), *"the purpose of using Modules as building blocks of the model is to give a common structure which can be seen as using a standardised language to explain Policy instruments. For example, a benefit Policy may consist of a Module that determines eligibility for the benefit and a Module that calculates the benefit amount for all eligible units"*.

- ***The Tax Unit File*** contains units comprising the individual, the whole household or something in-between. Moreover, they constitute which conditions a person must fulfil to be considered, for example, as a child, a dependent parent or a lone parent (Wilkinson et al., 2009).

- ***The Income List File*** applies the income concept used in the policy simulations**.** An income list is essentially a number of variables which are either added (original income and benefits) or subtracted (taxes and contributions). Income lists are organised like tax units; all income lists used within a system are gathered in a set of income lists, that is, a sheet within an Income List File. An entry of 1 in an income list's column and variable's row shows that the value of this variable is added to the income list, whereas an entry of –1 indicates that the value of the corresponding variable is subtracted, and 0 means that the variable is not included in the income list (Wilkinson et al., 2009:18-19).

- ***The Variable Description (Vardesc)*** contains a description of all the variables used in SAMOD.

Advantages and disadvantages of using SAMOD

In general, microsimulation models provide, at best, a tentative indication about the potential implications of tax changes in well-specified circumstances (Creedy et al., 2002:7). SAMOD provides information about the effects of tax changes on the "morning after" the change. When examining the effects of policy changes, SAMOD produces figures for various demographic groups of the amount of tax paid at various percentile income levels.

The main benefits/advantages of using SAMOD include the following: it is much more straightforward to use an tool for the analysis in this thesis than to design a microsimulation model from scratch; it has been designed to be relatively easy to use and quick to run and can be accessed by a wide range of users; it is quite up to date (the analysis in this thesis is based on a time point of 2007 dataset and 2008 policy rules); it retains the full extent of the heterogeneity contained in the basic survey data used; and it is able to show how an increase in the Child Support Grant affects income distribution as well as the budget. The strength of micro-models, as opposed to macro-models, is the possibility of getting detailed information about the distributional effects of policy changes.

All models have their limitations and these must be recognised when producing policy simulations. Given that no model is without its limitation, it is necessary to treat the output from microsimulation with caution (Creedy et al., 2002).

There are several limitations in using SAMOD to measure child poverty in South Africa. The first is that static microsimulation is limited to calculating the so-called "first round" effects, that is, those financial effects on household incomes from fully applying the rules of the system, everything else remaining the same, including the lack of behavioural reactions by individuals or households (Baroni & Richiardi, 2007). Second, the current version of SAMOD (version 1.1 of February 2009) contains data relating to 31st July 2007 and policy systems (i.e. tax and benefit rules) relating to July 2007 (system 1) and to August 2008 (system 2). A more up-to-date version was not available at the time of the analysis. Third, as Wilkinson et al. (2009) pointed out, the micro-dataset for SAMOD V1.1 was built using a number of different surveys. The IES 2000 was the main dataset and was updated using information from the LFS, the IES 2006 and the Community Survey 2007. The more recent IES 2006 could not be used as the main source as there are a number of methodological changes between the 2000 and 2006 surveys. Wilkinson et al. (2009) maintained that the reasons for selecting the 2000 IES instead of the 2006 update are (a) the IES 2000 is a richer data source as the same respondents were sampled as for the September 2000 Labour Force Survey (LFS), and (b) the IES 2006 only included banded age data for individuals. Despite some shortcomings, however, SAMOD is considered to generate information of great value.

In spite of certain limitations, the lessons drawn from this study serve as a point of departure for other research on the topic. The findings of this investigation will also give insight to policy makers in their endeavour to formulate policy in South Africa.

4.6. Conclusion

Microsimulation is an instrument with which to analyse the tax and benefit policy impacts at the individual and household levels. The distinguishing characteristic of microsimulation models is that they are usually based on individual records from cross-sectional surveys, making it possible to deal with a large number of social and economic issues. Despite their importance in policy issues, the output from microsimulation models should still be treated with caution.

Basically, both static and dynamic microsimulation models help in the application of income distribution analysis and the analysis of tax-benefit rules. However, the conceptual difference between static and dynamic microsimulation is that the static model will take a cross-section of the population at a specified point in time and apply the tax-benefit rules, for example, most of the time, to see the effects of policy changes. The impact shown by static models is also known as the "first round" effect, showing the gainers and losers, whereas the dynamic models differ in the technique by which they simulate the effects of time on population. They can model an individual's transition based upon the occurrence probabilities of real-life events, thus allowing the previous population to be projected in a future time period.

Given the discrimination, poverty and inequality of the past in South Africa, there is a need for a comprehensive approach to address these phenomena through the design of acceptable social policies and implementation strategies. In this regard, microsimulation models in general, and SAMOD in particular, help in quantifying impact on child poverty of current government policies and illustrate the impact of various amendments that could be implemented to analyse the effectiveness of and the extent to which social welfare policies, and particularly the Child Support Grant, deal with child poverty.

In the South African context, SAMOD is the most appropriate tool to assess the various impacts of the Child Support Grant on child poverty. SAMOD can be used to investigate a variety of scenarios, in particular the dynamism between taxation, social welfare policies and child poverty in South Africa. The detailed analytical tool of microsimulation discussed in Chapter 4 helps as a basis for a better understanding of the analysis of social welfare policies and child poverty in South Africa. Chapter-5 provides the methodology of the research and application of SAMOD throughout the research process.

CHAPTER-5: RESEARCH DESIGN AND ANALYTICAL TOOL

5.1. Introduction

The overall research design and analytical tool in this thesis is based on a static microsimulation model called SAMOD (South African microsimulation model) The model, throughout the research, helped to measure the effect of the Child Support Grant in terms of reduction in poverty and inequality of people living in households with children in South Africa. This is because SAMOD explicitly measures the impact of tax-benefit arrangements on household incomes. To this end, combinations of data analysis techniques have been employed throughout the research.

As indicated earlier, the overall aim of this study was to analyse the extent to which social welfare policies such as the Child Support Grant deal with poverty and inequalities of households living with or without children, in South Africa, in order to better inform the policy debate on how child welfare policies can be improved and to provide recommendations to policy makers in South Africa. To this end, SAMOD was employed as it contains a number of variables that are used to simulate proposed existing policies as well as to illustrate the impact of various policies that could be implemented. In the following section, the research philosophy, design, methodologies, procedures and overall framework of the research are discussed.

5.2. Research philosophy

A number of authors (Crotty, 1998; Galliers, 1990; Hatfield, 2003; Henry, 1997; Hussey & Hussey, 1997) have defined a research philosophy as a belief about the way in which data about a phenomenon should be gathered, analysed and used. Crotty (1998) noted that once researchers have a question they are seeking to answer, they must consider what methodologies they will employ, what theoretical and conceptual framework lies behind the methodologies and what epistemology informs this theoretical perspective. In the context of social sciences, Longino (1990) defined *epistemology* as a broad set of approaches to the study of knowledge and a form of proof to justify a claim to facts about the social world. Galliers (1990) observed that the term *epistemology* (what is known to be true), as opposed to *doxology* (what is believed to be true), encompasses the various philosophies of the research approach. He further argued that the purpose of science, then, is the process of transforming things believed into things known: doxa to episteme. He identified two major research philosophies, namely, positivist (sometimes called scientific) and interpretivist (also known as antipositivist). Having presented the above brief discussion of the research philosophy as a background, it is necessary to briefly summarise these approaches.

Positivism refers to a body of techniques for investigating phenomena and acquiring new knowledge of the natural world, as well as the correction and integration of previous knowledge, based on observable, empirical, measurable evidence and subject to laws of reasoning. Positivism is based on the assumption that the only authentic knowledge is scientific knowledge, and that such knowledge can come only from positive affirmation of theories through strict scientific and quantitative methods (Crotty, 1998). Levin (1988) claimed that positivists believe reality is stable and can be observed and described from an objective viewpoint, that is, without interfering with the phenomena being studied. They contend that phenomena should be isolated and that observations should be repeatable. This often involves manipulation of reality with variations in only a single independent variable so as to identify regularities in, and to form relationships between, some of the constituent elements of the social world. Predictions can be made on the basis of the previously observed and explained realities and their inter-relationships. Positivism has a long and rich historical tradition. It is so embedded in society that knowledge claims not grounded in positivist thought are simply dismissed as a-scientific and therefore invalid (Hirschheim, 1985).

It is argued that the key positivist tenets are, therefore, measurement and objectivity, resulting in a focus on quantitative data. Positivists are deductive, where the argument moves from general principles to particular instances. In general, positivist research usually begins with theories, conceptual frameworks and models, defines variables for study, and predicts their relationships through framing hypotheses that are then tested.

Reactions against positivism (interpretivism/antipositivism) began when the German philosopher Hegel voiced opposition to both empiricism, which he rejected as uncritical, and determinism, which he viewed as overly mechanistic (Ashley & Orenstein, 2005). Weber, who introduced the term *antipositivism*, further developed this view. According to this view, which is closely related to antinaturalism, sociological research should concentrate on human cultural values, symbols, and social processes viewed from a subjective perspective (Mommsen, 1992). Interpretivists contend that only through the subjective interpretation of, and intervention in, reality can that reality be fully understood. The study of phenomena in their natural environment is a key factor in the interpretivist philosophy, together with the acknowledgement that scientists cannot avoid affecting those phenomena they study. They admit that there may be many interpretations of reality, but maintain that these interpretations are in themselves a part of the scientific knowledge they are pursuing.

Williamson (2002) noted that the central tenet of interpretivism is that people are constantly involved in interpreting their ever-changing world. Researchers who are interpretivists believe that the social world is constructed by people and is, therefore, different from the world of nature.

Rationale for choice of approach

Both research traditions started in Classical Greek times with Plato and Aristotle (positivists), on the one hand, and the Sophists (anti-positivists) on the other. After long, dark periods in European scientific thought, the renaissance of the discipline came about in the 16th and 17th centuries. Since that time, well-known positivists have included Bacon, Descartes, Mill, Durkheim, Russell and Popper. On the opposing side were Kant, Marx, Freud, Polanyi and Kuhn (Hirschheim, 1985). These various elements of the research approach are further elaborated in the following sections: research design, methodology, procedures, model installation and running and research operationalisation.

5.3. Research design

According to Mouton (2001), research design is a blue print of how one intends conducting the research. The research design or strategy alternatives are many. Neuman, (2000) noted that a research design can include action research, case studies, ethnography, experiment, grounded theory, modelling, operational research, simulation, surveys, and other forms of research. In the context of this research, microsimulation is found to be pertinent and a brief description is presented below, but see Chapter 4 for a more detailed discussion.

The ***microsimulation model*** is defined as *"computer programs that simulate aggregate and distributional effects of a policy, by implementing the provisions of the policy on a representative sample of individuals and families, and then summing up the results across individual units*" (Martini & Trivellato, 1997:85). Merz (1994) defined microsimulation as a forecasting instrument that operates at the level of the individual behavioural entity, such as a person, family, or firm. Such models simulate large representative populations of these low-level entities in order to draw conclusions that apply to higher levels of aggregation such as an entire country. As with experimental forms of research, it is difficult to make a simulation sufficiently realistic so that it resembles real-world events.

The over-riding concern in this research was to provide relevant answers to the research questions, as set out in Chapter 1, and to be rigorous in the operationalisation of methodology. An approach to knowledge investigation within a positivistic view of the world (quantitative research methodology) was considered to suit the objectives of the research. In addition, given the nature of the research problem as outlined earlier, it was decided to use static microsimulation, especially SAMOD, as it is the most appropriate for this research project. This research paradigm will also be explored in the following sections.

5.4. Research approaches

The two major research approaches in social science include quantitative and qualitative research (Gerson & Horowitz, 2002; Mouton, 2001; Neuman, 2000). Quantitative researchers assume that they are independent from the phenomena that are being investigated and they study the object without affecting it or being affected by it as long as they, as researchers, follow scientific procedures (Babbie & Mouton, 2001). As noted by Neuman (2000:122), "*quantitative researchers emphasise precisely measuring variables and testing hypotheses that are linked to general causal casual explanations*". Qualitative research designs focus on qualitative aspects (meaning, experience and understanding) from the viewpoint of the research subjects and in the context in which the action takes place. They also seek to understand human behaviour and human action, through interacting with people to try to understand the world (Flinders & Mills, 1993; Mouton, 2001; Runi & Babbie, 1993).

A quantitative research methodology was chosen for the current study. The rationale behind this choice and, as Mouton (2001) and Babbie and Mouton (2001) have observed, is that quantitative research helps to precisely measure variables and test hypotheses that are linked to general causal explanations. Based on this conceptual framework, the study employed a static microsimulation model called SAMOD to quantify the effect of different policy scenarios in order to gain an understanding of the various policies that could be implemented in terms of reducing child poverty in South Africa.

5.5. Analytical tool: SAMOD

SAMOD is a national level microsimulation model that has been designed to be flexible enough to take into account the particularities of different policies but also to provide a common framework for the implementation of policies and the production of results (Wilkinson et al., 2009). This guaranteed comparability of outputs and transferability of policies hence makes it possible to analyse the effects of the application of policies on the national level.

SAMOD can calculate what benefits and tax credits individuals and households are entitled to under hypothetical tax and benefit systems. Accordingly, the study used the simulated data on the distribution of household disposable income to calculate the number of children living in poverty, based on a selected poverty line of R450 per capita per month.

5.5.1. Data source

Data from a household survey are classified into the categories of households contained in the structural component of the model. The current version of SAMOD (version 1.1 of February 2009), data relating to 31st July 2007 and policy systems (i.e. tax and benefit rules) relating to August 2008 were used throughout the study. The poverty and inequalities of people living in households with children and income distribution indicators were then calculated with these data. The micro-data used in SAMOD were derived from the 2000 and 2005/6 SA Income and Expenditure Survey, the 2000 and 2006 Labour Force Surveys and the 2007 Community Survey (Wilkinson et al., 2009). These surveys were the only large household surveys with the necessary combination of demographic and income information conducted recently. The data has proved to be a very reliable source for the purpose of income analysis and microsimulation (Wilkinson et al., 2009).

5.5.2. Research procedures

In this study, the research procedure reflects the statement of the problem and the different types of methodologies employed. Moreover, it also shows the appropriate ways and relevant steps that were used throughout the research. The major procedures included the following:

- *A literature review* study, which included both primary and secondary data from different sources. Its aim was to review the critical points of current knowledge on and methodological approaches to microsimulation.

- *Partners' permission*: SAMOD is jointly owned by the South African Department of Social Development, the University of Oxford and the University of Essex. All three partners are required to give their permission for individuals or organisations outside these three organisations to use the model. Hence, the research process started after the three partners had given permission and approval to use the model.

- *Practical experiences*: Before commencing with the use of SAMOD, theoretical and practical experiences were gained in terms of operating the data model and interpreting the outputs. This made the use of the model and communication easy at all levels and created a clear understanding of microsimulation,

- *Installation of SAMOD*: The entire content of the SAMOD CD was copied and all the folders were pasted into a new location. This was done onto the C:\ drive into a folder named SAMOD.

- *Navigating*: The SAMOD file was accessed on the computer by opening the Excel file named SAMOD.xls in the folder C:\SAMOD. This opens the main navigation screen known as the SAMOD operating system. From here all other parts of the model, including documentation and tools to run the model to produce output, were accessed.

- *Dataset*: In order to calculate taxes and benefits for the year 2008, one would use the 2008 policy rules together with data referring to the year 2008. However, corresponding data were not available and, even if they had been, preparing and integrating new data into the model would have been a very laborious task. Therefore, government 2008 policy rules on 2007 population baseline datasets were used for simulating various policy scenarios.

- *Calculations*: The micro-output file, SAMOD output, is essentially based on two inputs: (a) household micro-data and (b) rules on how to calculate taxes and benefits. These rules are stored in parameter files. Using these two information sources, the model calculated all taxes and benefits that had been built into the simulation. These calculations were carried out for each household in the dataset and the result was written to a micro-output file.

- *Measurement*: The poverty impact of various scenarios was modelled using the Foster-Greer-Thorbecke (FGT) index of poverty measurement and societal welfare inequalities were measured using the Gini co-efficient.

- *Data processing and presentation*: Computer software was used to place, into categories, the correlation and examination of relationships, analyses and data presentation, using tables, bar graphs, text, pictures, and others.

5.5.3. Baseline dataset

In order to calculate taxes and benefits, the study used the 2008 policy rules on the 2007 population baseline. Corresponding data were not available and integrating new data into the model was thought to be too laborious a task. Therefore, 2007 micro-data was used for simulating policy year 2008. These system-dataset combinations formed the baseline of the dataset. SAMOD was run using the 2008 policy rules on the 2007 population baseline and the output data were stored in the folder indicated in the output path field.

5.6. Definitions of policy scenarios and indicators of measurement

Various policy scenarios entailing different degrees of commitment were investigated to address the poverty and inequalities of households living with or without children. SAMOD was used to simulate several reforms. Five policy scenarios were considered and the study modelled the impact of the Child Support Grant on the poverty and inequalities of households living with or without children. The absolute poverty line on R450 per capita per month per was used, as proposed by the University of Oxford, the Department of Social Development in South Africa and the University of Essex. As indicated in Figure 5:1, five scenarios of the Child Support Grant were tested and selected indicators of measurements were also used for assessing the effect of the proposed scenarios. Definitions of policy scenarios and indicators are grouped into two major categories, as presented below. First, the different policy scenarios are defined. Second, the indicators for measuring each of the scenarios are also clarified.

5.6.1. Definitions of policy scenarios

- *Scenario-I* examined the result of the situation of poverty and the inequalities of people living in households with or without children in the absence of the Child Support Grant.

- *Scenario-II* assessed the poverty and inequalities profile of people living in households with children, under the 2007 population baseline and 2008 government policy rules, that is, where the Child Support Grant is given up to the age of 13 years old and the policy rule provides R210 per child per month.

- *Scenario-III* measured the result of the poverty and inequalities of people living in households with children under the 2007 population baseline and 2008 government policy rules, but with the Child Support Grant given up to the age of 15 years old and the policy rule providing R210 per child per month.

- *Scenario-IV* analysed the result of changes in the poverty and inequalities profile of people living in households with children, under the 2007 population baseline and 2008 government policy rules, but with the Child Support Grant given up to the age of 18 years old and the policy rule providing R210 per child per month.

- *Scenario-V* analysed the result of changes in the poverty and inequalities profile of people living in households with children by universalising the Child Support Grant up to the age of 18 years old and with the policy rule providing R210 per child per month.

5.6.2. Indicators of measurements

The monetary approach defines child poverty with respect to only financial matters, more specifically, in the context of household income from a predefined line of poverty (Gillie, 1996; Ravallion, 1998; Stigler, 1954). When estimating poverty by means of financial matters, the indicators of child poverty measurements mainly use revenue and expenditure of households (for detail, refer to Chapter 3.2.1.3). Despite its drawbacks and limitations, the monetary approach to child poverty measurements was used for practicality and data availability reasons.

The poverty impact of each of these scenarios was measured using the P-alpha measure in the Foster-Greer-Thorbecke (FGT) index of poverty measurement proposed by Foster et al. (1984). These include poverty rate (P0) [headcount ratio], poverty gap (P1) [the depth of poverty], and the severity of poverty (P2) [squared poverty gap].

5.7.2.1. Poverty rate (P0) [headcount ratio]

In this research, the poverty rate (P0) defines the proportion of poor in the population, whose income or consumption fell below the absolute poverty line of R450 per capita per month. The poverty rate (P0) is specified as α = 0, and the formula reduces to $FGT_0 = \frac{H}{N}$, which is the headcount ratio (P_0), or the fraction of the population which lives below the poverty line.

5.7.2.2. Poverty gap (P1) [the depth of poverty]

The poverty gap (P1) shows the average distance of the population from the absolute poverty line of R450 per capita per month, with the non-poor given a distance of zero. It is a measure of the poverty deficit of the entire population specified by α = 1, the formula being $FGT_1 = \frac{1}{N}\sum_{i=1}^{H}\left(\frac{z-y_1}{z}\right)$. In general, it is the amount of income necessary to bring everyone in poverty right up to the poverty line, divided by total population. This can be thought of as the amount that an average person in the economy would have to contribute in order for poverty to be eliminated.

5.7.2.3. The severity of poverty (P2) [squared poverty gap]

The P2 is a measure of poverty severity and takes into consideration distance separating the poor from the poverty line. It takes into account the inequality among the poor. It is indicated by α = 2, and the formula is $FGT_2 = \frac{1}{N}\sum_{i=1}^{H}\left(\frac{z-y_1}{z}\right)^2$, which is the squared poverty gap (P2).

5.7.2.4. Gini co-efficient

The Gini co-efficient usually measures societal welfare inequalities t. Amiel and Cowell (1999) stated that the Gini co-efficient measures the degree of inequality within a society. According to them, if the Gini co-efficient is 0, it means there is absolute equality, and 1 indicates absolute inequality/concentration.

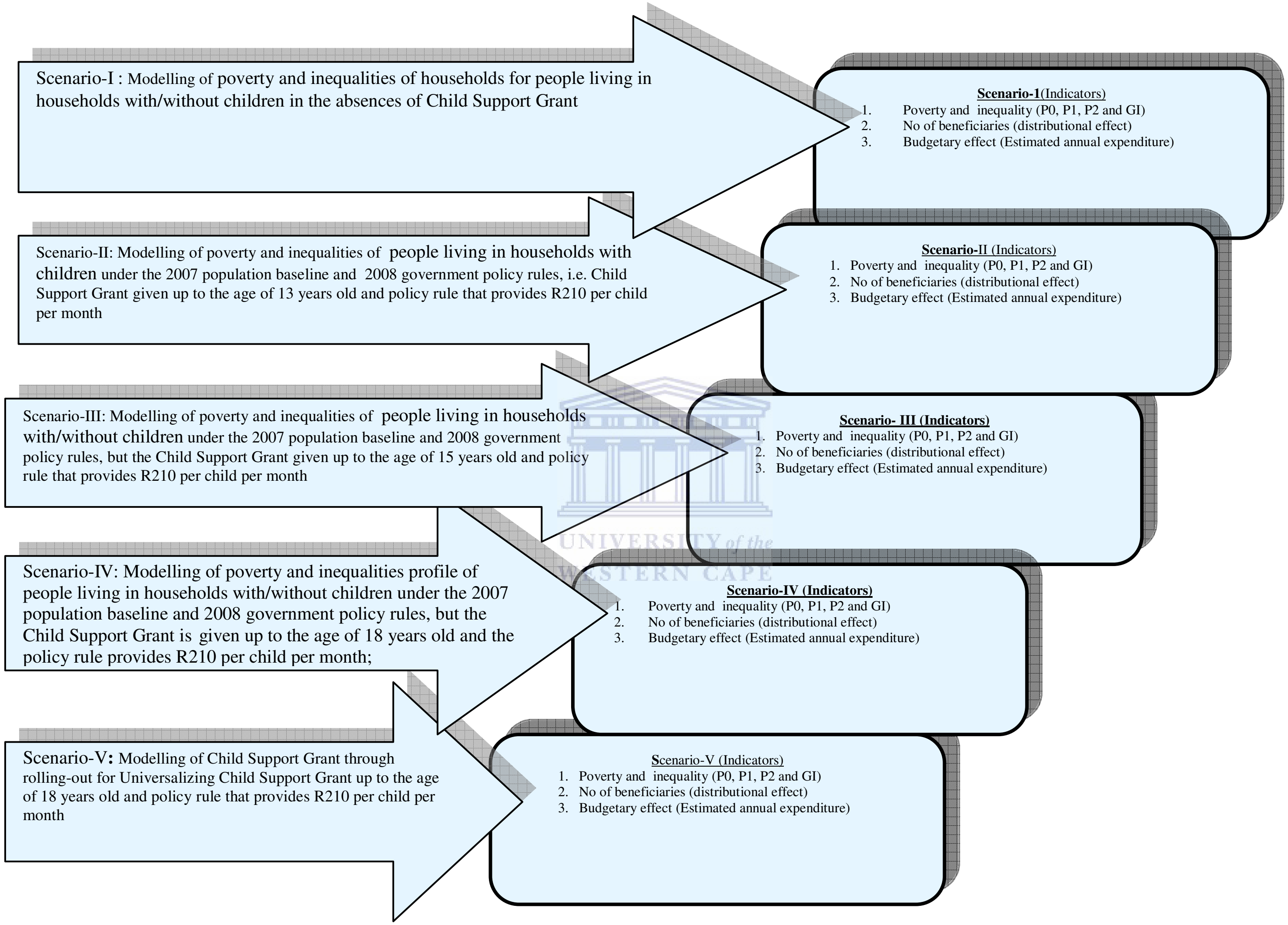
5.7.2.5. Beneficiaries

Creedy et al. (2002), indicated that any kinds of government taxation system, (direct or indirect tax), will have the potential to affect every citizens disposable income. Every tax policy change involves the losers and gainers from the system. In accordance with the research question, this indicator investigates and measures the number of beneficiaries of the Child Support Grant in implementing various policy scenarios.

5.7.2.6. Budgetary implication

This indicator helps to measure the effect that specific policy scenarios have on the national budget and the Treasury. If the funds show an excess of income over expenditure, this will indicate that the programmes are having a favourable effect on the budget and vice versa if fund expenditure exceeds income. The budgetary implication assessments are intended to convey the adequacy of the financing arrangements established for the programmes.

Figure 5:1 Analysis framework used for assessing policy scenarios[8] and indicators of measurements



Source: Own compilation

[8] The calculations are done on the basis of the assumption of full-take up of the grant for each of the scenarios; in practice it is likely that 100% take up will not be achieved

5.7.3. Focus areas of data analysis

With the objective of providing an answer to the research questions and testing the related hypothesis, the analysis of data using SAMOD focused on the following four major points: (1) assessing the different social welfare policies of the Child Support Grant in terms of responding to poverty and inequality rates of people living in households with children, using poverty rate (P0) [headcount ratio], poverty gap (P1) [the depth of poverty], the severity of poverty (P2) [squared poverty gap] and the Gini co-efficient; (2) distinguishing the number of beneficiaries in different policy scenarios; and (3) identifying the budgetary implications of different policy scenarios to the national government or Treasury. During the analysis process, data relating to 31st July 2007 and policy systems (rules) relating to April 2008 were used.

5.7.4. Statistical analysis

According to Jorgensen (1989) and Mouton (1996), data analysis involves reducing the size of the data to a manageable proportion and identifying different patterns as well as themes in the data. At the beginning of the data analysis process, the researcher codes and edits raw data and arranges it in respective themes and categories. Robson (1993:385) noted that "*a code is a symbol applied to a group of words to classify or categorize them. They are typically related to research questions, concepts and themes*".

SAMOD provided the family of commands for organising and summarising data. Analysis of information and data presentation was also done using text, tables and figures. An analysis of SAMOD outputs was carried out using the inbuilt and interlinked tools of STATA. In general, the STATA tools helped to undertake the calculation of the number of beneficiaries, total annual expenditure, poverty rates, headcounts, poverty gap and the Gini co-efficient, as well as the total value of tax revenue with and without subsidies.

5.7.5. Comparison of results

The study applied several methods to evaluate the five scenarios used with respect to the effect of the Child Support Grant in terms of the poverty rate (P0), the poverty gap (P1), poverty severity (P2) and the Gini co-efficient. Efforts have been made to systematically compare such scenarios to discover similarities and differences among the different methods of absolute poverty measurements. In this research study, five policy scenarios were compared, using an evaluation framework. The framework considered each method from the point of view of the poverty rate (P0), the poverty gap (P1), poverty severity (P2) and the Gini co-efficient. The comparison reveals that most of the studied methods' results are different but a number of similarities among results are apparent.

5.8. Conclusion

The various options available for the execution of the research and the logic for the selection of the specific approach, strategy and methods applied in this research project have been explained in this chapter. In addition, a detailed presentation of the research philosophy, strategy and methodology under which the research was conducted was presented. Methodologically, this chapter presented the research design and the relevant characteristics of SAMOD. After an overview of SAMOD, characteristics and important features of the modelling techniques were discussed. In this section, the research design process and the methodology was also explained. Information on how SAMOD was used throughout the research process was also provided.

Furthermore, data sources, procedures, scenario testing, calculating child poverty and statistical analysis were explained.

Considering relevance to the research topic, a positivist approach of research tradition was applied, using a microsimulation model. In the South African context, SAMOD was considered to be the most appropriate analytical tool to assess the various forces of taxation, social welfare policies and child poverty. It is distinctive in its aims, objectives and methodologies. SAMOD was used to investigate a variety of scenarios, in particular the dynamism between taxation, social welfare policies and child poverty in South Africa. The study also showed how selected SAMOD tools can be applied in modelling and scenario analysis.

Based upon the above methodological approach and tool of analysis, Chapter 6 presents an analysis of the micro-dataset that is used by SAMOD and compares it with other external sources of information to test the extent to which the underlying data are adequately robust estimates of the profile of the South African population, with a particular focus on children and child- related grants.

CHAPTER-6: CHILD PROFILE OF SAMOD AND RELATED SOCIAL GRANTS

6.1. Introduction

The main purpose in this chapter, in which the child[9] profile in the model (SAMOD) and child-related social grants in South Africa are analysed, is to estimate the reliability and plausibility of data used in the model and to understand the current situation of related social grants. In addition, analysis will help to establish standards for judging the accuracy of the data. In the context of this research, the demographic analysis possible through SAMOD helps to identify characteristics of children in terms of gender, race, age and province.

Chapter 6, first of all, involves an analysis of the weighted number of children in SAMOD by gender race, age group and province. Second, the chapter provides a comparative analysis of the weighted number of children in SAMOD with estimates made by Hall (2010) [Children's Institute, University of Cape Town] in South Africa. Third, the current situational analysis of the children in South Africa is considered in detail, in relation to access to social services, education, housing, health and basic services. Fourth, the chapter provides a discussion on child-related social grants in South Africa and, finally, offers a conclusion.

[9] Child/children: Refers to any person under the age of 18 years

6.2. Analysis of children weighted in SAMOD

6.2.1. Children weighted in SAMOD by gender

The micro-dataset which underpins SAMOD contains 99684 individuals, and analysis shows that 52,321 (52.5%) of the SAMOD population are female and 47,363 (47.5%) are male. Of these, 39,919 (40.04%) are children. After weighting the data by gender, 59.1% of the children in SAMOD were female and 49.9% were male. Table 6:1 below shows a summary of weighted number of children in SAMOD by gender.

Table 6: 1 Weighted number of children in SAMOD by gender

Gender	Weighted	
	Count	**Percent (%)**
Female	19973	50.09%
Male	19900	49.90%
Total	39873	**100%**

Source: Computed from SAMOD version 1.1 (2009)

6.2.2. Children weighted in SAMOD by race

Table 6:2 below presents the proportions of children weighted in SAMOD by race. The result of the analysis shows about 85.1% African, 8.2% Coloured, 1.7% Indian, 4.8% White, while ‘other’ only represented about 0.1% in weighted data.

Table 6: 2 Weighted number of children in SAMOD by race

Race	Weighted	
	Count	Percent (%)
1.African	33950	85.1%
2. Coloured	3273	8.2%
3. Asian	687	1.7%
4. White	1907	4.8%
5. Others	56	0.1%
Total	**39873**	**100%**

Source: Computed from SAMOD version 1.1 (2009)

6.2.3. Children weighted in SAMOD by age group

Weighted data analysis in SAMOD, by age group, shows that the majority of the children fall within the age group of 12-17 years (36.5%). In addition, data analysis indicates that 34.1% of the children fall within the category of 6-11 years of age and 29.2% of the children are under the age of 0-5 (see Table 6:3 below).

Table 6: 3 Weighted number of children in SAMOD by age group

	Weighted	
Age	Count	Percent (%)
0-5	11621	29.2%
6-11	13610	34.1%
12-17	14642	36.7%
Total	**39873**	**100%**

Source: Computed from SAMOD version 1.1 (2009)

6.2.4. Children weighted in SAMOD by province

The analysis was also focused on a method for determining, from SAMOD weighted children, whether they have uniform distribution across the nine provinces in South Africa. To establish this, detailed analysis was carried out of the weighted number of children in SAMOD by province. The analysis indicates that, in the SAMOD model, KwaZulu-Natal and the Northern Cape have the greatest and the least number of children respectively. In general, the proportion of children across the nine provinces is not similar. Table 6:4 below summarises the weighted number of children in SAMOD by province.

Table 6: 4 Weighted number of children in SAMOD by province

Province	Weighted	
	Count	Percent (%)
1. Eastern Cape	6505	16.3%
2. Free State	2114	5.3%
3. Gauteng	6568	16.5%
4. KwaZulu-Natal	8491	21.3%
5. Limpopo	6044	15.2%
6. Mpumalanga	2929	7.4%
7. North West	2930	7.4%
8. Northern Cape	661	1.7%
9. Western Cape	3632	9.1%
Total	**39873**	**100%**

Source: Computed from SAMOD version 1.1 (2009)

6.3. The Children's Institute's analysis of children in SA using the GHS in 2007

The Children's Act (2005) in South Africa defines children as those under the age of 18 years. Meintjes and Hall (2009) reported that 18.3 million children live in South Africa and they constitute 40% of the population. According to Meintjes and Hall (2009), the child population in South Africa is skewed, with boys constituting 52% and girls 48%.

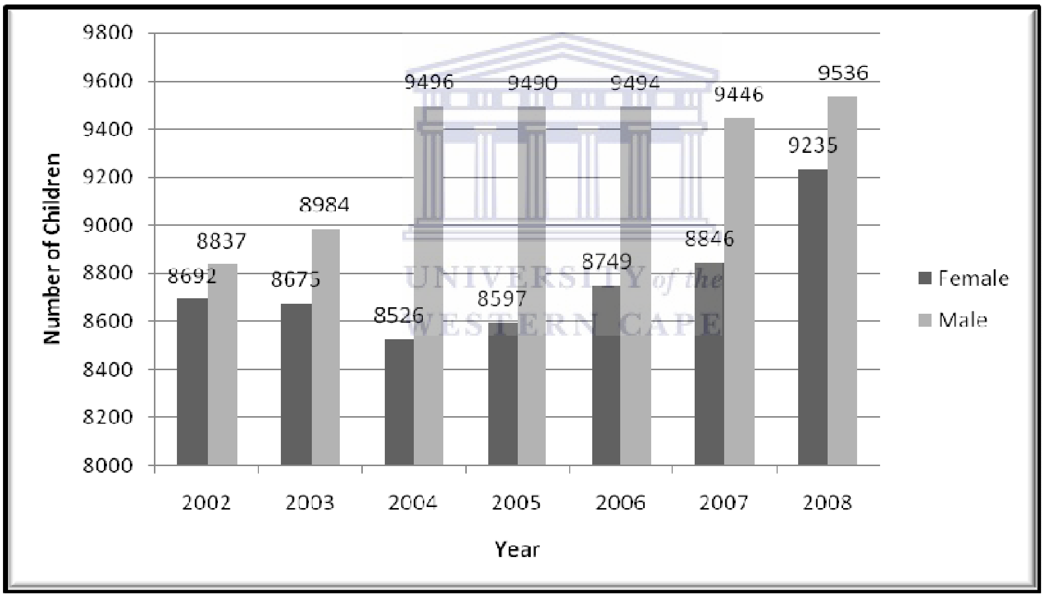
The following section starts with a review of the demographic situation of children in South Africa. It provides the total number of children in South Africa as well as the child population by gender, race, age group and province. With the objective of comparing the result of analysis with SAMOD[10] data, proportions are shown for 2007. Details are presented below:

[10] The current version of SAMOD (version 1.1 of February 2009), data relates to 31st July 2007.

6.3.1. Analysis by gender

Statistically, differences were observed in South African children at gender level for the period 2002-2008. For example, the analysis indicates that in 2007, about 48% of the child population were female and 52% were male. The percentage of women was slightly lower than that of men during the period 2002 to 2008. Figure 6:1 shows the number of children in South Africa by gender (2002-2008).

Figure 6:1 Number of children in South Africa by gender (2002-2008) in 000'



Source: Hall (2010)

According to Meintjes and Hall (2009), the distribution of children across the provinces is slightly different from that of adults. A greater number of children live in rural areas (Limpopo, Eastern Cape, KwaZulu-Natal) while the majority of the adult population lives in metropolitan provinces. A high proportion of children do not live with their biological parents. Thus, parental guidance, which is very important in a child's upbringing, is lacking for this vast number of children.

6.3.2. Analysis by race

Data analysis indicates that in 2007, African children accounted for 84% of the total child population, with Coloured children making up 9%, Indian children 2%, and White children 5 % of the child population. Table 6:5 shows the number of children in South Africa by race.

Table 6: 5 Number of children in South Africa per race group (2002-2007) in 000'

Race	2002	2003	2004	2005	2006	2007	"%"(2007)
1.African	14590	14770	15078	15181	15364	15441	84%
2. Coloured	1518	1512	1534	1522	1518	1567	9%
3. Indian	336	317	310	346	3337	317	2%
4. White	1086	1061	1099	1038	1023	968	5%
Total	**17530**	**17660**	**18021**	**18087**	**18242**	**18293**	**100%**

Source: Hall (2010)

6.3.3. Analysis by age group

In South Africa, analysis of the proportion of children shows differences among various age groups. For example, data analysis indicates that in 2007 children 0-5 years of age represented 33% of the total child population. Similarly, children of 6-11 years accounted for 33% and about 34% of the children were in the age group 12-17 years. Table 6:6 shows the number of children in South Africa by age group.

Table 6: 6 Number of children in South Africa per age group (2002-2008) in 000'

Province	2002	2003	2004	2005	2006	2007	2008	(%) 2007
0 - 5 yrs	5346	5346	5950	6047	6186	6099	6178	33%
6 - 11 yrs	5964	5940	6114	5976	5966	5978	6161	33%
12 - 17 yrs	6219	6374	5958	6063	6092	6216	6432	34%
Total	**17530**	**17660**	**18022**	**18087**	**18243**	**18292**	**18771**	**100%**

Source: Hall (2010)

6.3.4. Analysis by province

At the provincial level, the highest number of children was observed in the KwaZulu-Natal and the Eastern Cape and Gauteng. For example, the total child population in 2007 in KwaZulu-Natal province was 22% (2884000) and in the Eastern Cape 16% (2971000). On the other hand, data analysis indicated that in the Northern Cape, there were 2% (433000) and in the Free State 6% (1138000), the lowest child population observed. Table 6:7 summarises the number of children in South Africa (2002-2007) in different provinces.

Table 6: 7 Number of children in South Africa per region (2002-2007) in 000'

Province	2002	2003	2004	2005	2006	2007	"%"2007
1. Eastern Cape	2836	2881	3216	3137	3181	2971	16%
2. Free State	990	980	1064	1114	1118	1138	6%
3. Gauteng	2741	2779	2642	2656	2720	2884	16%
4. KZN	3833	3830	3792	3841	3817	4023	22%
5. Limpopo	2501	2533	2616	2615	2660	2504	14%
6. Mpumalanga	1306	1319	1308	1351	1402	1474	8%
7. North West	1431	1453	1489	1461	1431	1295	7%
8. N. Cape	301	300	337	337	344	433	2%
9. Western Cape	1591	1585	1559	1572	1571	1571	9%
Total	**17530**	**17660**	**18022**	**18087**	**18243**	**18292**	**100%**

Source: Hall (2010)

From the demographic profile as identified above, it is clear that the government needs to embark on policy programmes that will address the needs of the different population groups, giving priority to the highest population group, in this case Blacks, through policy programmes like affirmative action which will help reduce the inequality created by the history of the past.

6.4. Comparative analysis of children weighted in SAMOD versus the GHS in 2007

In this part of the study, the weighted number of children in SAMOD is compared with estimates made by Hall (2010) [Children's Institute, University of Cape Town] in South Africa. Comparative analysis of the number of weighted children in SAMOD with the number reported in the General Household Survey (GHS) [estimates made by Hall, 2010] produced more or less the same results. The following section presents the findings of the comparative analysis by gender, race, age group and provincial level.

Total numbers: Data analysis shows that the weighted number of children in SAMOD is 50.09%, whereas, the proportion of children in South Africa, based on the GHS in 2007, is 48%.

Gender: Statistically, a small variation can be observed for weighted number of children in SAMOD and the number of children in South Africa, based on the GHS in 2007, by gender. The analysis indicates that the weighted value of female and male children in SAMOD is 50.09% and 49.90% respectively, whereas, the proportion of children in South Africa, based on the GHS in 2007, is 48% female and 52% male.

Race: When comparing the weighted SAMOD data with the estimates made by Hall (2010) [The Children's Institute, University of Cape Town] in South Africa, the number of children, according to race, was more or less the same. The pattern is consistent for all races. For example, the weighted SAMOD data for African was 85.1%, Coloureds 8.2%, Indians 1.7%, and Whites 4.8%. On the other hand, the estimate made by Hall (2010) [Institute of Children] shows that African accounted for 84%, Coloureds 9%, Indians 2%, and Whites 5%.

Age groups: The SAMOD weighting process yielded small variations for age groups as compared with estimates made by Hall (2010), using the GHS. Data analysis shows that the weighted SAMOD data for 0-5 years, 6-11 years, and 12-17 years are 29.2%, 34.1%, and 36.7% respectively, whereas estimates made by Hall indicate that for 0-5 years, 6-11 years, and 12-17 years, the percentages are 33%, 33%, and 34% respectively. The differences are in the range of 2% to 4%.

Province: Data analysis indicates that there are no statistically significant variations between the weighted SAMOD data and estimates made by Hall (2010), using the GHS, by province, in terms of the proportion of children living in each of the nine provinces (see Table 6:8 below).

Table 6: 8 Comparative analysis of weighted children in SAMOD versus GHS

Area	Weighted children in SAMOD		SA children in 2007 in 000' GHS	
	Count	**Percent%**	**Count**	**Percent%**
1.Gender				
Female	19973	50.09%	8846	48%
Male	19900	49.90%	9446	52%
Total	**39873**	**100%**	**18292**	**100%**
2. Race				
African	33950	85.1%	15441	84%
Coloured	3273	8.2%	1567	9%
Asian	687	1.7%	317	2%
White	1907	4.8%	968	5%
Total	**39873**	**100%**	**18292**	**100%**
3. Age group				
0-5 yrs	11621	29.2%	6099	33%
6-11 yrs	13610	34.1%	5978	33%
12-17 yrs	14642	36.7%	6216	34%
Total	39873	100%	18292	100%
4. Province				
1. Eastern Cape	6505	16.3%	2971	16%
2. Free State	2114	5.3%	1138	6%
3. Gauteng	6568	16.5%	2884	16%
4. KwaZulu-Natal	8491	21.3%	4023	22%
5. Limpopo	6044	15.2%	2504	14%
6. Mpumalanga	2929	7.4%	1474	8%
7. North West	2930	7.4%	1295	7%
8. North Cape	661	1.7%	433	2%
9. Western Cape	3632	9.1%	1571	9%
Total	**39873**	**100%**	**18292**	**100%**

6.5. Access to education, child health, and orphans

6.5.1. Access to education

The South African government recognises education as the fundamental pillar of a child's upbringing. At the national level, the South African Constitution of 1996, in section 29(1) (a), states that "*everyone has the right to basic education*", and section 29(1) (6) further states that "*everyone has the right to further education*" and that the state must be responsible in making education "*progressively available and accessible*". Within the context of South Africa, De Lannoy and Lake (2009) observed that, at the provincial level, the Eastern Cape, the Northern Cape and KwaZulu-Natal have seen a significant increase in attendance rates, while in 2007, four provinces (Northern Cape, Gauteng, North West and Western Cape) had attendance rates that were slightly lower than the national average. Also of note was the fact that attendance rates of African (97%) and Coloureds (94%) remain slightly lower than those of Indians (99%) and Whites (99%).

It is argued that education is one of the most effective ways to diminish poverty. This is so because education plays a crucial role in poverty alleviation and the reduction of unemployment as it enables a person to attain qualifications to enter the labour market and advance individual personal growth. If the government of South Africa seeks to create a better future for its children, it should, therefore, focus on creating a friendly environment that is conducive to learning.

6.5.2. Child health

The national government of South Africa acknowledges the importance of good health services to children and has enshrined health care within its legal framework as a basic right, which the government is obligated to provide for children. The South African Constitution of 1996, in section 27, states that everyone has the right to have access to health-care services.

In South Africa, the infant mortality rate shows a disparity between population groups, this being highest for African children and lowest for White children. Indications are that 40% of all deaths of children under five years old are HIV/AIDS-related. More than two thirds of the children who died were underweight for their age and just under half of these were severely malnourished (UNICEF South Africa, 2005).

Lake and Marera (2009), in their projection of the mortality rate of children in South Africa, use the same indicator as used by the World Health Organization, which states that mortality rate is the number of children per 1000 live births who died before their first birthday and the under-five mortality rate is the number of deaths among children before reaching the age of five years, per 1000 live births. Quoting from a survey in 2000, from the South African National Burden of Disease Study (BOD), Lake and Marera (2009) established that the infant mortality rate was 59 deaths per 1000 live births and the under-five mortality rate was 95 deaths per 1,000 live births.

From these statistics, it is clear that the number of child deaths in South Africa is high and warrants an investigation into the causes of child death. According to Bradshaw et al. (as cited in Lake & Marera, 2009), some causes of the high mortality rate in South Africa include low birth weight, diarrhoea, lower respiratory infections and protein-energy malnutrition, which account for 30% of deaths, with HIV/AIDS-related diseases contributing 40% of child deaths for children under the age of five.

Another important aspect of life that influences child health care is hunger as it causes conditions such as malnutrition, which lead to disease. Despite the fact that government has introduced policies to help avert the issue of hunger in South Africa, such as the Child Support Grant and the Foster Care Grant, child hunger remains an issue in the country. Lake and Marera (2009) reported that the provinces with highest reported cases of hunger were the Eastern Cape, Limpopo and the Free State and the lowest were Gauteng and the Western Cape. At the racial level, the most negatively affected are Africans and Coloureds, whereas Indians and Whites are less affected.

6.5.3. Orphans

One of the features of the South African child population is that a reasonable proportion of the population is orphans. Meintjes and Hall (2009:72) define "orphan" according to three different categories: (a) a maternal orphan, being a child whose mother has died; (b) a paternal orphan, being a child whose father has died, and (c) a double orphan, being a child whose father and mother have both died. According to the General Household Survey of 2009 (as cited in Meintjes & Hall, 2009), there were approximately 3.7 million orphans in South Africa, including children without a living biological mother, father or both parents, which equates to 20%[11] of all children in South Africa. They further showed that the number of orphans in South Africa experienced a drastic increase partly because of the ravaging effects of the AIDS pandemic.

[11] It should be noted, however, that this may be an overestimation of orphans, as the Children's Institute includes in its definition of orphanhood, children whose parents are not known about, i.e. children for whom it is not known whether their mother or father is alive or not.

According to Meintjes and Hall (2009), this is an indication of the fact that the majority of children who are orphans live without their mothers and in rural areas. These are important facts, then, for the government to use in the allocation of the Foster Care Grant that will help relieve adults who are charged with taking care of these orphans.

Another important issue in child demography in South Africa is that child-headed households exist. Acording to Meintjes & Hall (2009), child-headed households are where both biological parents are dead and there is no person above the age of 18 to take care of the children. Meintjes and Hall (2009) further maintained that child-headed households only exist for a short period, for example, after the death of an adult, prior to other child-care arrangements being made. The main point was that child-headed households often have parents who are alive but who live elsewhere (migrant workers). They also argued that government should embark on policies to cater for orphans in the country as such children could otherwise end up as street children, either becoming thieves or prostitutes. Table 6:9 below shows the number and proportion of orphans in South Africa in 2007.

Table 6: 9 Number of orphans in SA in 2007

Description	Number of orphans
Maternal orphans	614,000
Double orphans	701,000
Paternal orphans	2,364,000[12]
Total	**3,679,000**

Source: Meintjes and Hall (2009)

[12] A paternal orphan is a child whose father has died but whose mother is alive. Paternal orphans are more likely to be living with their remaining parent - their mother.

The number children living in child-only households increased by 25.4% within a period of five years (2002-2007) in South Africa. Table 6:10 shows the dramatic increase of child-headed households in a short period of time.

Table 6: 10 Number of children living in child-only households, 2002 & 2007

Description	Number of orphans
Child-only household, 2002	118000
Child-only household, 2007	148000

Source: Meintjes and Hall (2009)

6.6. Child-related social grants

As part of the social welfare policies in use today, the South African government provides three different types of social grants for children. These comprise the Child Support Grant (CSG)[13], the Care Dependency Grant (CDG)[14] and the Foster Child Grant (FCG)[15]. A brief description of these grants and an analysis is presented below.

6.6.1. Child Support Grant (CSG)

The main purpose of social welfare policies such as the Child Support Grant is to ensure that children living in poverty are able to receive the lowest amount of income necessary to meet their fundamental subsistence needs. According to the Constitution, the South African

[13] Child Support Grant: Refers to a grant paid to a primary caregiver of a child who satisfies the criteria in terms of Section 6 of the Social Assistance Act of 2004 (Act No 13 of 2004).
[14] Care Dependency Grant: Refers to a grant paid to a parent or a foster parent in respect of a care dependent child in terms of Section 7 of the Social Assistance Act of 2004 (Act No 13 of 2004).
[15] Foster Care Grant: Refers to a grant paid to a foster parent in terms of Section 8 of the Social Assistance Act of 2004 (Act No 13 of 2004).

government is obliged to support children directly when their parents or caregivers are too poor to support them adequately. The Child Support Grant, to the value of R240 per person per month (as of April 2009), is given to caregivers of children, on the basis that the caregivers have very low incomes or no incomes at all. The selection criteria for this grant are closely related to the levels of income poverty and caregivers have to pass an income or means test to prove that they do not have an adequate income.

As part of the Child Support Grant implementation strategy, the South African government has made two main adjustments in eligibility criteria which would affect take-up. The two major changes are related to the age threshold and the income cut-off. The Child Support Grant was initially available only to children until their seventh birthday. It was later extended in different phases to higher age groups (DSD, 2009). As of January 2009, the age threshold increased to include 15-year-old children and there have been numerous indications that the South African government is considering the extension of the Child Support Grant to children under 18 years (Zuma, 2010). Table 6:11 summarises the Child Support Grant beneficiaries in South Africa 2003-2009.

Table 6: 11 Children receiving Child Support Grant in South Africa 2003-2009

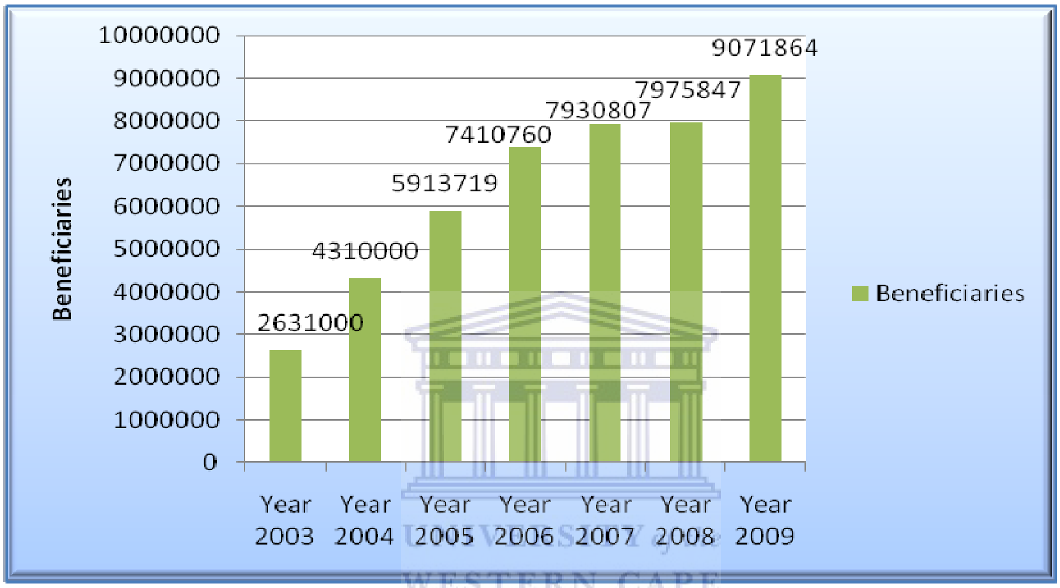
National	Year 2003	Year 2004	Year 2005	Year 2006	Year 2007	Year 2008	Year 2009
Beneficiaries	2, 631, 000	4, 310, 000	5 913 719	7 410 760	7 930 807	7 975 847	9 071 864

Source: Adapted from South Africa Social Security Agency (2009)

6.6.1.1. Trends in allocation of the Child Support Grant in a decade

Since the introduction of the Child Support Grant in South Africa in 1998, the number of beneficiaries has grown in the last decade. Figure 6:2 shows the trends in the allocation of the Child Support Grant in South Africa between 2003 and 2009.

Figure 6:2 Trends in allocation of Child Support Grant from 2003-2009



Source: Adapted from South Africa Social Security Agency (2009)

Distribution of Child Support Grant beneficiaries by province: An analysis of data indicates that, on average, the KwaZulu-Natal and Eastern Cape provinces have had a higher number of Child Support Grant beneficiaries since 2003-2007. On average, the two provinces had 936781 and 691649 beneficiaries per year respectively. However, the lowest number of Child Support Grant beneficiaries was observed in the Northern Cape, that is, 65619 beneficiaries on average. The following table summarises the distribution of Child Support Grant beneficiaries by province by year.

Table 6: 12 Distribution of Child Support Grant beneficiaries[16] by province, as at Apr-07

Province	Apr-00	Apr-01	Apr-02	Apr-03	Apr-04	Apr-05	Apr-06	Apr-07
Eastern Cape	52 914	165 259	268 371	416 271	743 224	1 032 165	1 375 548	1 479 442
Free State	17 284	60 754	102 514	156 374	247 016	328 369	403 586	435 437
Gauteng	58 399	132 877	199 392	325 046	549 616	696 997	842 022	908 904
KwaZulu-Natal	73 615	278 756	482 349	711 562	1 077 249	1 287 866	1 649 766	1 933 088
Limpopo	61 077	167 435	286 389	416 462	737 888	955 634	1 171 855	1 243 294
Mpumalanga	30 254	92 914	130 196	205 110	364 703	468 987	596 962	638 700
North West	34 614	99 604	161 319	211 367	348 921	457 953	579 958	645 426
Northern Cape	9 314	20 269	34 228	47 627	70 755	98 652	116 537	127 567
Western Cape	11 061	61 016	146 219	209 569	268 043	344 114	417 351	449 168
Total	**348 532**	**1 078 884**	**1 810 977**	**2 699 388**	**4 407 415**	**5 670 737**	**7 153 585**	**7 861 026**

Source: Adapted from South Africa Social Security Agency (2009)

***Growth in number of Child Support Grant beneficiaries*: **Data analysis indicates that in terms of percentage changes from April 2006 to April 2007, KwaZulu-Natal accounts for the highest percentage (17.1%) of growth in the number of beneficiaries of the Child Support Grant, followed by the North West at 11.3%, then the Northern Cape at 9.5%. The region that accounts for the lowest percentage of changes from April 2006 to April 2007 of Child Support Grant growth is Limpopo at 6.1%. Table 6:13 shows the percentages in the Child Support Grant recipients' growth rate by region, as at April 2007. The dramatic increases are probably due to a combination of increased take-up and the increase in age threshold of the Child Support Grant.

[16] Beneficiary**:** Refers to any person who receives social assistance in terms of Sections 6, 7, 8, 9, 10, 11, 12 or 13 of the Social Assistance Act of 2004 (Act No 13 of 2004).

Table 6: 13 Child Support Grant beneficiaries' growth rate (April 2000 to April 2007)

Province	% change April /00 - April /01	% change April /01 - April /02	% change April /02 - April /03	% change April /03 - April /04	% change April /04 - April /05	% change April /05 - April /06	% change April /06 - April /07
Eastern Cape	212.3%	62.4%	55.1%	78.5%	38.9%	33.3%	7.6%
Free State	251.5%	68.7%	52.5%	58.0%	32.9%	22.9%	7.9%
Gauteng	127.5%	50.1%	63.0%	69.1%	26.8%	20.8%	7.9%
KwaZulu-Natal	278.7%	73.0%	47.5%	51.4%	19.6%	28.1%	17.2%
Limpopo	174.1%	71.0%	45.4%	77.2%	29.5%	22.6%	6.1%
Mpumalanga	207.1%	40.1%	57.5%	77.8%	28.6%	27.3%	7.0%
North West	187.8%	62.0%	31.0%	65.1%	31.3%	26.6%	11.3%
Northern Cape	117.6%	68.9%	39.2%	48.6%	39.4%	18.1%	9.5%
Western Cape	451.6%	139.6%	43.3%	27.9%	28.4%	21.3%	7.6%
Total	**209.6%**	**67.9%**	**49.1%**	**63.3%**	**28.7%**	**26.2%**	**9.9%**

6.6.2. Care Dependency Grant (CDG)

The Care Dependency Grant (CDG) is given to the caregivers of children who are severely disabled and who need permanent care[17]. It has a value of R1, 010 per month (as of April 2009). Table 6:14 shows that a total of 107 065 South Africans benefited from the Care Dependency Grant as at 2009.

Table 6: 14 Care Dependency Grant recipients in South Africa 1998-2009

National	03	04	05	06	07	08	09
Grant recipients	59 608	80 087	85 698	92 853	99 162	99 621	107 065

Source: Adapted from South Africa Social Security Agency (2009)

[17] Care-dependent child: Refers to a child between the ages of 1 and 18 years who requires and receives permanent home care due to his or her severe mental or physical disability.

Distribution of Care Dependency Grant recipients by region: KwaZulu-Natal province has the highest number of Care Dependency Grant recipients, followed by the Eastern Cape and Gauteng provinces respectively. Amongst all the regions, the Free State has the lowest number of Care Dependency Grant recipients. The information also suggests that the lowest number of grant recipients could be as a result of the Free State having, relatively, the lowest population. Table 6:15 provides a summary of the distribution of Care Dependency Grant recipients by province.

Table 6: 15 Care Dependency Grant recipients in South Africa April2000 to April 2007

	Apr-00	Apr-01	Apr-02	Apr-03	Apr-04	Apr-05	Apr-06	Apr-07
Eastern Cape	4 487	6 256	7 533	12 097	17 524	19 891	20 292	20 414
Free State	778	1 061	1 415	2 525	3 154	3 376	3 581	3 859
Gauteng	2 088	2 977	3 876	7 553	10 249	11 427	11 979	12 577
KwaZulu-Natal	7 678	9 459	10 065	16 120	19 822	21 051	22 986	27 180
Limpopo	2 192	3 106	4 408	6 661	8 548	9 585	10 246	11 092
Mpumalanga	815	1 270	1 602	3 200	4 122	4 256	4 436	4 857
North West	1 220	1 964	2 397	4 476	6 248	7 005	7 580	8 263
Northern Cape	626	705	859	1 355	1 780	2 096	2 434	2 722
Western Cape	2 905	3 471	3 910	5 621	6 158	6 778	6 979	7 263
Total	**22 789**	**30 269**	**36 065**	**59 608**	**77 605**	**85 465**	**90 513**	**98 227**

Source: Adapted from South Africa Social Security Agency (2009)

Care Dependency Grant recipient annual growth rate per province: KwaZulu-Natal accounts for 18.3%, followed by the Northern Cape at 11.8%, and Mpumalanga at 9.5% of changes from April 2006 to April 2007. The region that accounts for the lowest percentage of care dependency grant growth rate from April 2006 to April 2007 is the Western Cape at 4.1%. Table 6:16 shows the percentage of Care Dependency Grant recipients by province, as at March 2009.

Table 6: 16 Care Dependency Grant recipients April 2000-April 2007 (annual growth)

	% change April /00 - April /01	% change April /01 - April /02	% change April /02 - April /03	% change April /03 - April /04	% change April /04 - April /05	% change April /05 - April /06	% change April /06 - April /07
Eastern Cape	39.4%	20.4%	60.6%	44.9%	13.5%	2.0%	0.6%
Free State	36.4%	33.4%	78.5%	24.9%	7.0%	6.1%	7.8%
Gauteng	42.6%	30.2%	94.9%	35.7%	11.5%	4.8%	5.0%
KwaZulu-Natal	23.2%	6.4%	60.2%	23.0%	6.2%	9.2%	18.3%
Limpopo	41.7%	41.9%	51.1%	28.3%	12.1%	6.9%	8.3%
Mpumalanga	55.8%	26.1%	99.8%	28.8%	3.3%	4.2%	9.5%
North West	61.0%	22.1%	86.7%	39.6%	12.1%	8.2%	9.0%
Northern Cape	12.6%	21.8%	57.7%	31.4%	17.8%	16.1%	11.8%
Western Cape	19.5%	12.7%	43.8%	9.6%	10.1%	3.0%	4.1%
Total	**32.8%**	**19.2%**	**65.3%**	**30.2%**	**10.1%**	**5.9%**	**8.5%**

Source: Adapted from South Africa Social Security Agency (2009)

6.6.3. Foster Child Grant (FCG)

The Foster Child Grant (FCG) was designed to support foster parents who have had children placed in their care by the Children's Court because the children have suffered abuse or neglect. This grant has a value of R680 per month (as of April 2009). However, according to a Children's Institute report by Pendlebury et al. (2009), the Foster Child Grant is increasingly being used to provide extra income for relatives and other people caring for children who have lost a parent, or parents, through violence, HIV/AIDS or other diseases. The Children's Institute report indicated that nearly two million children who are eligible for the FCG have not yet managed to gain access to this income support. These children (foster children[18]) and their caregivers (foster

[18] Foster child : Refers to any child who has been placed in the custody of a foster parent in terms of Chapter 3 or 6 of the Child Care Act, 1983 (Act No 74 of 1983) or Section 290 of the Criminal Procedure Act of 1977 (Act No 51 of 1977

parents[19]) face several barriers to accessing the grant, including the overloaded system. The planning of grants' administration and related budgets could be more accurate if sound eligibility figures were used, and the system would thus become more efficient.

Data analysis indicates that many thousands of South African children have benefited from court-ordered foster care and, consequently, the Foster Care Grant. It is, however, doubtful whether this form of care, as provided for in the Children's Amendment Act (2007), can adequately deal with this country's changing needs as vast numbers of children are being left parentless as a result of HIV/AIDS-related diseases (SALRC, 2002).

Table 6: 17 Foster Child Grant (FCG) recipients in South Africa 1998-2009

National	03	04	05	06	07	08	09
Foster Child Grant recipients	142 687	215 765	271 817	351 702	421 883	430 891	474,759

Source: Adapted from South Africa Social Security Agency (2009)

Foster Child Grant (FCG) recipients: In April 2007, KwaZulu-Natal had the highest number of Foster Child Grant (FCG) recipients, followed by the Eastern Cape and Gauteng provinces respectively. Amongst all the regions, in April 2007, the Northern Cape had the lowest number of Foster Child Grant (FCG) recipients. The data suggest that more intervention is needed, however, and mostly in rural regions. Table 6:18 provides a summary of the distribution of Foster Child Grant (FCG) recipients by province.

[19] Foster parent: Refers to any person, except a parent of the child concerned, in whose custody a foster child has been placed under Chapter 3 or 6 of the Child Care Act of 1983, or Section 290 of the Criminal Procedure Act of 1977, or a tutor to whom a letter of tutorship has been issued in terms of Chapter IV of the Administration of Estates Act of 1965 (Act No 66 of 1965).

Table 6: 18 Foster Child Grant recipients by region, as at April 2007

	Apr-00	Apr-01	Apr-02	Apr-03	Apr-04	Apr-05	Apr-06	Apr-07
Eastern Cape	9 081	11 639	12 663	25 602	37 367	51 337	62 966	76 189
Free State	3 747	5 458	6 800	15 302	23 453	31 793	37 670	41 737
Gauteng	6 897	9 235	10 339	19 178	26 893	33 794	38 346	46 446
KwaZulu-Natal	7 320	10 502	12 963	32 715	46 737	55 854	73 773	100 847
Limpopo	1 364	2 020	3 152	9 799	17 283	24 435	32 878	40 059
Mpumalanga	1 245	1 533	1 629	3 629	6 834	11 918	16 756	20 103
North West	1 799	2 094	2 709	7 658	12 766	18 114	25 515	31 246
Northern Cape	3 742	4 392	4 538	7 403	8 385	8 984	10 965	11 513
Western Cape	14 648	14 395	14 630	21 401	23 322	25 232	26 293	27 253
Total	**49 843**	**61 268**	**69 423**	**142 687**	**203 040**	**261 461**	**325 162**	**395 393**

Source: Adapted from South Africa Social Security Agency (2009)

Foster Child Grant (FCG) recipient growth rate: Data analysis indicates that the percentage change from April 2006 to April 2007 was 36.7% in KwaZulu-Natal and 22.4% in North West Province. Table 6:19 summarises the percentage growth rate of grant recipients between April 2000 and April 2007. It shows that the growth rate of grant recipients has been fluctuating over the years. The region that accounts for the lowest percentage of change from April 2006 to April 2007 was the Western Cape at 3.6%.

Table 6: 19 Foster Child Grant recipients' annual growth by region, as at April 2007

	% change April /00- April /01	% change April /01 - April/02	% change April /02 - April /03	% change April /03 - April /04	% change April /04 - April /05	% change April /05 - April /06	% change April /06 - April /07
Eastern Cape	28.2%	8.8%	102.2%	46.0%	37.4%	22.7%	21.0%
Free State	45.7%	24.6%	125.0%	53.3%	35.6%	18.5%	10.8%
Gauteng	33.9%	12.0%	85.5%	40.2%	25.7%	13.5%	21.1%
KwaZulu-Natal	43.5%	23.4%	152.4%	42.9%	19.5%	32.1%	36.7%
Limpopo	48.1%	56.0%	210.9%	76.4%	41.4%	34.6%	21.8%
Mpumalanga	23.1%	6.3%	122.8%	88.3%	74.4%	40.6%	20.0%
North West	16.4%	29.4%	182.7%	66.7%	41.9%	40.9%	22.5%
Northern Cape	17.4%	3.3%	63.1%	13.3%	7.1%	22.1%	5.0%
Western Cape	-1.7%	1.6%	46.3%	9.0%	8.2%	4.2%	3.7%
Total	**22.9%**	**13.3%**	**105.5%**	**42.3%**	**28.8%**	**24.4%**	**21.6%**

Source: Adapted from South Africa Social Security Agency (2009)

6.7. Projections of child-related social security

Each year, the South African Social Security Agency (SASSA) reports on the current and projected financial status of different social security systems. The 2008 report updated the figures and provided projections pertaining to the Child Support Grant, the Foster Child Grant and the Care Dependency Grant. The projections cover the period spanning 2009 to 2012, as indicated below in Table 6:20. Analysis of the data indicates that, as compared with 2010/11, the projection of child-related social grants for the 2011/12 budget year increases by 4.23% for the Child Foster Care Grant, by 4.81% for the Care Dependency Grant and by 20.83% for the Child Support Grant. For example, the proposed Child Foster Care Grant is R710, Care Dependency Grant is R1040 and Child Support Grant is R290 per child per month. The main reason for the increase in social security is to off-set the inflation rate. Details are presented in Table 6:20.

Table 6: 20 Projections of child-related social grants

Grant type	Projection for 2011/12
Child Foster Care Grant	R740
Care Dependency Grant	R1090
Child Support Grant	R290

Source: Adapted from South African Social Security Agency (2008)

Child Support Grant beneficiaries

South Africa's social assistance programme, initiated in its current form in 1998, has expanded dramatically over the past 10 years. This is largely as a result of the extension of the means-tested Child Support Grant (originally targeted at poor children under the age of seven) to include 14-year-olds. The Department of Social Development, which is responsible for administering social grants, applies a means test to applicants. Table 6:21 below shows that Child Support Grant recipients account for the highest percentage of child-focused grants at 93.60%, followed by Foster Care Grants at 5.22% and Child Care Dependency Grants at 1.17%.

Table 6: 21 Distribution of children's grants by grant type, as at 30 June 2008

Type of Grant	Children
Child Support Grant	8, 273, 859
Foster Care Grant	461, 573
Child Dependency Grant	103, 794

Source: South African Social Security Agency (2008)

Analysis of expenditure on child grants

Table 6:22 below shows allocations for the three child-related grants over the period 2003/04 to 2007/08. In the first of these years, the three grants together accounted for 26% of total expenditure on grants.

Table 6: 22 National expenditure on child grants, 2003/04-2007/08 (R million)

Grant type	2003/04	% of total	2004/05	2005/06	2006/07	2007/08	% of total
Foster care	1,142	6	1,563	1,996	2,464	3,404	7.2
Care dependency	639	3.4	760	916	998	1,127	2.4
Child support	7,690	40.6	11,431	14,143	17,936	19,176	40.4
Total child grants	9,471	50	13,754	17,055	21,398	23,707	50
All social grants	**18,942**	**100**	**27,508**	**34110**	**42,796**	**47,414**	**100**

Source: National Treasury (2007)

6.8. Conclusion

With the objective of assessing the validity and reliability of the weightings of children in the SAMOD model, a comparison was made with the estimates of Hall (2010) [Children's Institute, University of Cape Town] in South Africa. The result of the comparison gave an estimate of the robustness of the SAMOD data. In general, comparative analyses of the children weighted in SAMOD with the estimates of Hall (2010) indicated that the number of children by gender, race, age group and provincial level is more or less the same. As part of the data analysis process, small variations were observed. However, given the apparent robustness of the micro-data which underpins SAMOD, it is acceptable to use SAMOD as a tool to explore the interplay between the social welfare policies of the Child Support Grant and child poverty in South Africa.

Data extracted from the South African Social Security Agency indicate that the Child Support Grant accounts for the highest proportion of grants, followed by the Foster Care Grant and the Child Disability Grant. The annual growth rate of child-related grant recipients is 5.2%, which has significantly increased from the year 2007/08. Over R69 billion was spent on child-related social grant disbursements during this period. The following chapter presents the results gathered from a simulation of the effects of the social welfare policies of the Child Support Grant on the poverty and inequalities of people living in households with children in South Africa.

CHAPTER-7: SIMULATIONS OF THE CHILD SUPPORT GRANT

7.1. Introduction

The main purpose of the microsimulation and statistical analysis used in this research is to assess the impact of the Child Support Grant in terms of responding to child poverty, as well as to gauge the potential impact of proposed policy reforms and poverty interventions. Based on the theoretical and conceptual framework presented above, as a background, the relationships between the Child Support Grant, as a social welfare policy, and child poverty in South Africa are analysed in this chapter.

Considering the ideological approaches and models of welfare states, that is, the residual, institutional and developmental social welfare models, selection of different scenarios have been made. In general, five scenarios of possible Child Support Grant reform have been identified and the study has modeled the poverty and inequality rates of people living in households with children using the Foster-Greer-Thorbecke (FGT) indices of poverty measurement, which include poverty (headcount ratio), the depth of poverty (poverty gap), and the severity of poverty (squared poverty gap).

The five scenarios are as follow:

- Scenario I, in which the changes in poverty and inequality rates of people living in households with children in the absence of a Child Support Grant in South Africa are simulated and analysed;
- Scenario II, in which the poverty and income inequality profiles of people living in households with children under the 2007 population baseline and 2008 government

policy rules, that is, a Child Support Grant given up to the age of 13 years old and a policy rule that provides R210 per child per month are simulated and investigated;

- Scenario III, in which the effect of the Child Support Grant for people in households living with children, using government 2008 policy rules on the 2007 population baseline, is simulated and examined. The eligibility of the beneficiaries is based on means-test criteria and the children, including 15-year-olds, can access the grant and policy rule that provides R210 per child per month;

- In Scenario IV, changes in the poverty and inequalities profile of people living in households with children under the 2007 population baseline and 2008 government policy rules, but with the Child Support Grant given up to the age of 18 years old and the policy rule providing R210 per child per month, are simulated and explored; and

- In Scenario V, changes in the poverty and inequalities profile of people living in households with children and given an envisioned universal child support grant up to the age of 18 years old and applying the policy rule that provides R210 per child per month are simulated and the results analysed.

Simulation of social welfare policies pertaining to the Child Support Grant in South Africa have been analysed using SAMOD. The following sections include descriptions of (a) the basis of poverty analysis, (b) the ideological approaches underpinning selection of the five scenarios, (c) modelling (microsimulation of five policy scenarios of the Child Support Grant in South Africa); and (e) the relationship between the Child Support Grant and child poverty and a link with the hypothesis, as well as the research questions.

With the objective of investigating the social welfare policies of the Child Support Grant and the poverty and inequalities of people living in households with children in South Africa, SAMOD has been used in different scenarios to arrive at an understanding of how these relationships function. The different scenarios modelled were developed in consultations between the researcher, the lead supervisor and the co-supervisor. This section of the report presents a review of the basis of the poverty analysis line, methodology underlying the microsimulation modelling generally, and the Child Support Grant, and will include discussion on the task of calibrating the model with household survey data.

7.2. Unit of analysis and quantification of poverty

Foster-Greer-Thorbecke (FGT) metric is a generalised measure of poverty within an economy. It combines information on the extent of poverty in three levels:

1. *Poverty Rate/Poverty Incidence/Poverty Head Count Index*, denoted as P0, is the proportion of the total population whose income is below the poverty line. In the context of this research, P0 represents the proportion of the population that is unable to buy a basket of goods.

2. *Poverty Depth/Poverty Gap Index,* denoted as P1, which indicates the proportion of people who are living below the poverty line. In general, it shows the amount of money needed to eliminate poverty up to the specified poverty line through direct targeting of the poor. However, it does not show the severity of poverty among the poor people and also does not show the inequity within the poor.

3. *Poverty Severity/Squared Poverty Gap,* denoted as P2, defines the average squared relative poverty gap. P2 can be likened to the poverty gap, the only difference being that

the poverty gaps are squared and this gives a bigger weight to the largest poverty gaps. In general, P2 helps to show the inequality among the poor and the level of severity (Foster, Greer, & Thorbecke, 1984). FGT indices are used in measuring poverty. The method helps in measuring the share of individuals who are below the poverty line. The following sections present the analysis of child poverty and inequality in South Africa, using the FGT indices.

Based on consultation with the University of Oxford's Centre for the Analysis of South African Social Policy, the Department of Social Development of the Government of the Republic of South Africa and the University of Essex experts, the methodology of analysing a number of different poverty lines was adopted by SAMOD team. The results of this analysis are discussed below.

7.3.2. Per capita income approach and adult equivalence (ADEQ[20]) scale

There is no generally acceptable standard for measuring child poverty. Analysts hold endless discussions without having a common point of agreement (see section 3.2.1). However, literature in the field (Atkinson & Bourguignon, 1982 Banks & Johnson, 1994; Blackorby & Donaldson, 1993; Coulter et al., 1992; Deaton & Paxson 1998, Dieden & Gustafsoon, 2002; Woolard, 2002, 2003;) has shown that both the per capita income approach and the adult

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[20] Adult equivalence (ADEQ) scale can be calculated using an exponent of less than 1 to capture economies of scale associated with larger households, i.e. ADEQ = (Adults + 0.5*children)0.9 . Adult equivalence can be employed rather than, say, household size, because it recognises that having a large number of children has different implications for, say, a household's food needs, than having a large number of adults.
General formula for ADEQ = $(A + \alpha K)^{\beta}$
A = represents the number of adults; K= is the number of children; α = adjusts for age equivalence; β = adjusts for economies of scale
NOTE: In the context of SA, adult equivalence (ADEQ) applied by a few researchers as indicated below:
ADEQ = $(\text{Adults} + 0.5*\text{children})^{0.85}$ (the scale used by Woolard 2002)
ADEQ = $(\text{Adults} + 0.5*\text{children})^{0.9}$ (the scale used by May et al. 1995)

equivalence (ADEQ) scales have been used for measuring child poverty. For example, using a per capita income approach (absolute poverty line), a number of studies have been conducted in South Africa (e.g. Dieden & Gustafsoon 2003; Woolard, 2002, 2003). Studies have also been conducted in South Africa (e.g. Dieden & Gustafsoon 2002; NIEP, 1996; Woolard, 2001) using the adult equivalence scale (relative poverty). Barnes (2009:7) summarized the previous studies on child poverty in South Africa as presented below.

Table 7: 1 summary of the previous studies of child poverty in South Africa.

Table 1: Poverty rates from previous studies of child poverty in South Africa

Source: author (date)	Data source	Poverty line	Equivalisation	Monetary resource measure	Percentage of children in poverty	
					%	Age
Absolute						
Dieden & Gustafsson (2003)	IES/OHS 1995	R 122.56 per month	per capita	income	28.4	0-14
Woolard (2002)	OHS 1995	R 200 per month [a]	per capita	income	38.9	0-17
Woolard (2003)	IES 2000	R 215 per month	per capita	income	54.3	0-17
Woolard (2002)	OHS 1999	R 200 per month	per capita	income	58.1	0-17
Woolard (2002)	OHS 1999	R 400 per month	per capita	income	64.7	0-17
Proudlock et al. (2008)	GHS 2006	R 1200 per month	none [b]	expenditure	68.0	0-17
Haarmann (1999)	PSLSD 1993	R 319 per month	$(\text{household size})^{0.9}$	expenditure	72.0	0-6
Woolard (2003)	IES 2000	R 430 per month	per capita	income	74.9	0-17
Woolard (2002)	OHS 1995	R 400 per month [a]	per capita	income	75.8	0-17
Relative						
Dieden & Gustafsson (2003)	IES/OHS 1995	50% of median	per capita adjusted for	income	44.8	0-14
Dieden & Gustafsson (2003)	IES/OHS 1995	50% of median	per capita	income	49.2	0-14
Woolard (2001)	OHS 1999	Bottom 40% of households	$(\text{adults} + 0.6\ \text{children})^{0.9}$	income	59.3	0-6
World Bank (1995)	PSLSD 1993	Bottom 40% of households	adult equivalents [d]	expenditure	60.0	0-5
NIEP/UNICEF (1996)	PSLSD 1993	Bottom 40% of households	adult equivalents [e]	expenditure	60.0	0-5
May (1998)	IES 1995	Bottom 40% of households	$(\text{adults} + 0.5\ \text{children})^{0.9}$	expenditure	60.0	?
Streak et al. (2008)	IES 2005/06	Bottom 40% of households	per capita	income	65.5	0-17
Barnes et al. (2007)	Census 2001	40% of mean	modified OECD	income	78.7	0-17

Notes: Year of poverty estimate is the same as the data source. Table ordered by poverty rate (within absolute and relative categories).
[a] The poverty line is reported in 1999 Rand as child poverty was calculated on the OHS 1995 at the same time as on the OHS 1999.
[b] Total household income used.
[c] Exact adjustment not reported.
[d] Reported as 'total consumption was divided by the number of "adult equivalents" (which was calculated using the consumption requirements of children and adults) and adjusted to take into account economies of scale' (World Bank, 1995: 5).
[e] The World Bank (1995) analysis was used in this study.

Source: Barnes (2009:7)

Statistical analysis, using SAMOD, indicates that there are 25,084 (households). Of which 9,681 (17%) people living in households without children. Whereas about 15,403 (83%) people living in households with children. An analysis of individual people (as opposed to households) shows that out of a total of 99 684 individuals in the study, 39 919 (40%) are children, while the other 59 765 (60%) are adults.

The mean and median per capita incomes of all the households are 1281 and 466 respectively (using the per capita income approach). However, if the adult equivalence approach is used, the mean and median incomes rise to 1 700 and 694 respectively. This represents a 33% increase in mean per capita income and a 49% increase in median per capita income. For people living in households with children, the mean and median per capita incomes increase by 48% and 56% respectively. However, for people living in households without children, the mean and median increase by 7% and 8% respectively.

The proportion of households that are poor (absolute poverty, using the 450 poverty line) is 53%, using the per capita income approach. However, the proportion falls to 27%, using the adult equivalence scale. It seems this drastic difference can be attributed to the fact that the majority of people are living in households with children; thus, since child dependents then count as less than 1 under the adult equivalence approach, the result in an increase in per capita income and, thus, an apparent drastic fall in poverty.

In light of the above data, it would appear that the per capita approach is more relevant and appropriate in using SAMOD.

7.3. Ideological approaches underpinning selection of scenarios

A number of authors (Esping-Andersen, 1990; Titmuss, 1963, 1974) have provided an ideological basis and classification of the welfare system in different ways. For example, Titmuss (1974) classified three types of welfare systems. These include the residual, industrial-achievement, and institutional-redistribution systems. According to him, the "residual" model of public provision for welfare is conditional and limited in that it targets only those in need and had its roots in the "Poor Law" thinking of before the 19th century. He further argued that it is heavily reliant on the non-formal sector, in particular the family and other voluntary organisations such as the church or mutual-aid societies. Titmuss (1963) noted that the "industrial-achievement" model, on the other hand, responds to social needs on the grounds of merit and achieved status differentials, work performance and production. Titmuss indicated that the 'institutional-redistribution" model is based on the universality of social needs and welfare as a right of citizenship and built on Keynesian notions of social and economic intervention by the State.

Esping-Andersen (1990) linked together welfare effort (measured in terms of welfare expenditure per GNP), welfare instruments (e.g., contributory pensions, means test, etc.), and welfare outcomes (e.g., redistributive potentialities). This typology of the European welfare states proposes a three-fold classification: the liberal/free market, the conservative/corporatist or social market, and the social democratic/Scandinavian models. The following section shows the ideological bases and their links with the different scenarios which are going to be modelled in this part of the research.

7.2.1. Neoliberal view (means-tested or conditional)

Pratt (2001) and Axford (1995) observed that neoliberalism is the set of economic theories and policies developed by contemporary monopoly capital to consolidate its global expansion and achieve control of the world markets it needs in order to survive. Pratt (2001) asserted that the liberal/free market regimes are characterised by selectivist residual welfare, which is a targeted, means-tested welfare for the poor and places limits on the realm of social rights. The liberal/free market model may include features such as welfare recipients having relative equality, market differentiated welfare among the majority, means-tested poor relief, and private pensions and private expenditure on health. Axford (1995) pointed out that this is typical of the USA welfare system, which relies on a high degree of private market supplementation for those not entitled to benefits, and is increasingly evident in the contemporary Australian welfare system.

Peters (1997) noted that, according to the neoliberal view, where the free market is prominent and only when people are unable to participate in the money economy for reasons beyond their control, are social grants used to relieve poverty. The South African ANC-led government adopted the neoliberal policies of a social welfare system, using the means test or conditionality before offering for social security grants.

7.2.2. Conservative view

The conservative view is also known as a corporatist or social market approach. It is a type of welfare state that upholds status differences by linking welfare benefits (social rights) to compulsory membership in occupationally differentiated welfare schemes, for example, of social insurance. Accordingly, welfare outcomes are limited by features such as income maintenance benefits, other corporatist contributions and earning-related characteristics. In general, it is a situation where corporate and other employers provide for social security and local communities fulfil the function for people not currently or previously linked to an employer. This type of welfare regime, based on employee rights and benefit adequacy, tends to be characteristic of the European welfare state systems, such as Germany.

7.2.3. Social democratic view

The social democratic view is known as the universal view. Using this approach, generous universal provision is made by the State in order to achieve comprehensive social security and equality. Importantly, these systems with a high degree of benefit equality do not regard equality in terms of minimal needs and, what is more, avoid the dualism of state and markets. This is characteristic of Scandinavian social democratic states (e.g., Sweden, Norway, Denmark), and also the United Kingdom, to some extent, where redistribution and social solidarity were major objectives, at least before the dismantling of the welfare state by Margaret Thatcher.

7.2.4. South Africa: Institutional social welfare model

Considering the large-scale government spending and involvement in social welfare policies, it is difficult to categorise South Africa's social welfare system as neoliberal economies. For example, 9,071,864 (more than 50%) of the children in South Africa received the Child Support Grant in 2009 (SASSA, 2009). Neoliberal economics usually targets the poorest of the poor.

On the one hand, as Bean (cited in Koteze, 1995), observed, the institutional model of social welfare places strong focus on the government to take active and positive steps to establish minimum living standards and be directly concerned with the distribution of income. On the other hand, the developmental social welfare approaches combine social and economic policies as special tools to enhance the dynamics of social development processes (Lombard, 1996; Midgley, 1995; Patel, 2005). Details are presented in Section 2:5. Hence, in the context of this research, the proposed five policy scenarios are classified as institutional and developmental social welfare models. Major ideological underpinnings and policy scenarios used are summarised in Table 7:2 below.

Table 7: 2 Major ideological underpinnings and proposed policy scenarios

Ideological underpinnings	Scenarios
1. What would constitute child poverty in SA in the absence of the Child Support Grant?	Scenario I: analyses changes in poverty and inequality rates of people living in households with children in the absence of the Child Support Grant;
2. Institutional model (focuses on large-scale and active involvement of government to take social responsibility for the welfare of its citizens)	Scenario II: investigates the extent of poverty and income inequality profiles of people living in households with children under the 2007 population baseline and 2008 government policy rules, i.e. the Child Support Grant given up to the age of 13 years old and policy rule that provides R210 per child per month;
3. Institutional model (focuses on large scale and active involvement of government to take social responsibility for the welfare of its citizens)	Scenario III[21]: investigates the effect of the Child Support Grant on people living in households with children, using government 2008 policy rules on 2007 population baseline. The eligibility of the beneficiaries is based on means-test criteria and the children, including those who are 15 years old, can access the grant and policy rule that provides R210 per child per month;
4. Developmental approaches for social welfare (combine social and economic policies to enhance dynamics of social development processes).	Scenario IV: explores changes in poverty and inequality rates of people living in households with children under the 2007 population baseline and 2008 government policy rules, but the Child Support Grant is given up to the age of 18 years old and the policy rule provides R210 per child per month;
5. Developmental approaches for social welfare (combine social and economic policies to enhance dynamics of social development processes).	Scenario V: analyses the result of changes in the poverty and inequalities profile of people living in households with children by universalising the Child Support Grant up to the age of 18 years old and with the policy rule providing R210 per child per month

[21] **Scenario III**, is a more joined-up version of Scenario II, but it takes into account the South African Schools Act (1996), which made basic education compulsory for children aged 7 to 15 years).

7.4. Simulation and statistical analysis

Baroni and Richiardi (2007) noted that the main purposes of microsimulation models are to analyse and forecast the individual impacts of alternative economic and social policy measures. The models allow quantification of some of the policies' effects at the micro level. In general, they are an integral part of so-called evidence-based policy making and are valuable instruments for politicians.

For the current research, a static microsimulation model called SAMOD was used to quantify the effect of different policy scenarios in order to gain an understanding of the various policies that could be implemented in terms of reducing child poverty in South Africa. Wilkinson et al. (2009) explained that SAMOD is a national-level microsimulation model that has been designed to be flexible enough to take into account the particularities of different policies and also to provide a common framework for the implementation of policies and the production of results. This guaranteed comparability of outputs and transferability of policies, therefore, makes it possible to analyse the effects of the application of policies on the national level.

Data analysis was done using statistical software STATA version 10.1. Kohler and Kreuter (2005) maintained that the main reason for using this software is its advantage in handling large data sets with relatively easy and quick-to-use functionality. Throughout the research process, data analysis was made at the individual level, but not at the household level. Accordingly, household income was divided amongst individuals equally within the household. It was assumed that income is in practice divided equally (whereas this is in reality unlikely to be the case), but there is insufficient evidence at present of a better way to equivalise income in the South Africa context. This served to deflate child poverty, and to factor in income from other people in the household. The following section presents the simulation and statistical analysis of five policy scenarios.

7.4.1. Simulation of Scenario I

Rawls' theory of justice explains the principles and values of how social and economic advantages should be distributed to all members of society. Gorovitz, (2001) and Sarkar (2006) noted that Rawls provided a reasoned argument for why it was right for the State to redistribute wealth in order to help the poor and disadvantaged groups in society. Several authors in the field of social welfare policies (Lund et al., 2009; Marcus, 2004; Rawlings & Rubio, 2005; Tabor, 2002) also stressed that the distribution of national resources using different methods of execution such as social security, mainly through cash transfers, is an essential part of poverty reduction strategies and for addressing increasing vulnerability both in developed and developing countries. They also believed that social security measures are important elements of poverty reduction at the individual and household level.

The purpose of modelling Scenario I was to analyse changes in poverty and inequality profiles of people living in households with children in the absence of the Child Support Grant in South Africa. The policy scenario helped to quantify the outcomes of the absence of the Child Support Grant for the child and the primary caregiver. By removing the monetary amount of all child support grants from the total household's income and subsequently measuring the resulting poverty and inequality in the absence of the Child Support Grant, Scenario I quantified the poverty profile.

In an attempt to understand the effect of cash transfer, that is, the social welfare policies of the Child Support Grant on poverty and inequality, as well as addressing the vulnerability of people in households living with children, modelling has been done using SAMOD. The Foster-Greer-Thorbecke (FGT) indices of measuring poverty, that is, poverty rate (P0), poverty gap (P1) and poverty severity (P2) helped in the quantification-of-poverty exercise. In addition, social welfare inequality of the society was measured using the Gini co-efficient (see Annexure 1). A summary of the analysis of policy Scenario I is presented below.

Syntax used

An analysis of SAMOD outputs was carried out using the built-in and interlinked tools of STATA. In general, the STATA tools helped to undertake the calculation of the number of beneficiaries, total annual expenditure and detailed analysis of poverty. Box 7:1 below indicates the types of syntax that was used in the analysis process.

Box 7: 1 STATA syntax used in the analysis of Scenario I.


```
log using scenario-1
set memory 500m
adopath+ "C:\SAMOD\TOOLS\Stata tools"
insheet using "C:\SAMOD\Output\sa_2008&s1output_ext_std_sa.txt"
n_ben co_bch, label ( "CSG" ) takeup
total_exp co_bch, label ( "CSG" )
bys cohhid: egen hh_inc07 = sum(std_dispy)
bys cohhid: gen nHHmem = _N
gen pcap_inc07= hh_inc07/nHHmem
replace pcap_inc07 = 0.1 if pcap_inc07 <=0
gen n_ch_in_hh=0
forvalues n=1(1)25{
bys cohhid: replace n_ch_in_hh=n_ch_in_hh+1 if codag[`n']<18
}
gen anydepch=0
replace anydepch=1 if n_ch_in_hh>0

*POVDECO
*FOR TOTAL POPULATION

povdeco pcap_inc07, pl(450)
preserve
keep if anydepch==1

*FOR PEOPLE IN HHOLDS WITH CHILDREN
```

```
povdeco pcap_inc07, pl(450)
povdeco pcap_inc07, pl(450) by(codrc)
povdeco pcap_inc07, pl(450) by(codgn)
povdeco pcap_inc07, pl(450) by(codur)
povdeco pcap_inc07, pl(450) by(codrgn1)
restore
preserve
keep if anydepch==0

*FOR PEOPLE IN HHOLDS WITHOUT CHILDREN

povdeco pcap_inc07, pl(450)
povdeco pcap_inc07, pl(450) by(codrc)
povdeco pcap_inc07, pl(450) by(codgn)
povdeco pcap_inc07, pl(450) by(codur)
povdeco pcap_inc07, pl(450) by(codrgn1)
restore

*INEQDECO
*FOR TOTAL POPULATION

ineqdeco pcap_inc07
preserve
keep if anydepch==1

*FOR PEOPLE IN HHOLDS WITH CHILDREN

ineqdeco pcap_inc07
ineqdeco pcap_inc07, by(codrc)
ineqdeco pcap_inc07, by(codgn)
ineqdeco pcap_inc07, by(codur)
ineqdeco pcap_inc07, by(codrgn1)
restore
preserve
keep if anydepch==0

*FOR PEOPLE IN HHOLDS WITHOUT CHILDREN

ineqdeco pcap_inc07
ineqdeco pcap_inc07, by(codrc)
ineqdeco pcap_inc07, by(codgn)
ineqdeco pcap_inc07, by(codur)
ineqdeco pcap_inc07, by(codrgn1)
restore
log close
```


7.4.1. Poverty analysis

Poverty is measured by Foster-Greer-Thorbecke (FGT) indices that display the percentage of people with an equivalent amount of disposable income below the poverty line of 60% of the median. These statistics display the income components of the average individual within each decile. Inequality is measured by the Gini co-efficient. A summary of the analysis is presented below. The results of the analysis are summarised in statistics that are all listed in Annexure 1.

7.4.1.1. Analysis of poverty for people living in households with children

In the course of the research, the poverty profile of households with or without children was examined. Data analysis indicates that a total of 82,655 observations are of households with children, of which 48,996 are poor. The average per capita income (pcap_inc07) amongst the poor is R207.818, whereas the average poverty gap (P1) [poverty line - pcap _inc07] amongst the poor is R242.182. Table 7:3 demonstrates the poverty profile, using income per capita as the welfare measure and absolute poverty at R450 for people in households living with children, according to race, gender, urban/rural environment and province. For all observations of people in households living with children, the analysis result showed that the poverty rate (P0), the poverty gap (P1), and poverty severity (P2) are 0.59, 0.32 and 0.21 respectively. Poverty quantification according to race, gender, rural/urban environment and provincial level is presented below:

Poverty quantification by race: At the level of race, the results show that for people in households living with children, there is a difference in the poverty profile amongst different race groups in South Africa. For example, in African households, the poverty rate (P0), the poverty gap (P1) and poverty severity (P2) produced the following indicators: 67%, 36% and 25% respectively. For Coloured households, is the figures were 34%, 15% and 9%. The analysis also shows very low poverty and welfare inequality in Indian and White families living with children.

Poverty quantification by gender: Statistically no significant variation was observed, at gender level, for people in households living with children. The analysis indicates that the poverty rate (P0), the poverty gap (P1), and poverty severity (P2) for females living in households with children are 60%, 32% and 21%, whereas, for males, the following is indicated: 57%, 31% and 20% respectively.

Poverty quantification by rural/urban environment: Results at this level show that the poverty rate (P0), the poverty gap (P1,) and poverty severity (P2) for people living in households with children in rural areas are 75% and 42% and 29% respectively. Results for urban households indicated the following: 42%, 20% and 13% respectively.

Poverty quantification by province: The highest poverty profile was observed for people living in households with children in Limpopo, the Eastern Cape and the Free State provinces. In Limpopo, the poverty rate (P0), the poverty gap (P1) and poverty severity (P2) were 0.72, 0.42 and 0.28 respectively. In the Eastern Cape, the poverty rate (P0), the poverty gap (P1), and poverty severity (P2) were 73%, 42% and 29% respectively. In the Free State, the poverty rate (P0), the poverty gap (P1), and poverty severity (P2) were 66%, 37% and 26% respectively, whereas, people living in households with children in the Western Cape were observed to have the lowest level of poverty profile, when compared to other provinces. For example, in the Western Cape, the poverty rate (P0), the poverty gap (P1) and poverty severity (P2) were 28%, 11% and 6% respectively.

Table 7: 3 Simulated poverty profile for people living in households with children in S I

All observations			
All obs	Poverty rate index %) (a=0)	Poverty gap index (a=1)	Poverty severity index (a=2)
	0.59278	0.31902	0.21407
Race			
Race	a=0	a=1	a=2
1. African	0.66663	0.36337	0.24526
2. Coloured	0.34289	0.15283	0.09274
3. Indian	0.07806	0.02717	0.01184
4. White	0.02226	0.01255	0.00867
5. Others	0.28846	0.19996	0.16028
Gender			
Gender	a=0	a=1	a=2
1. Female	0.60522	0.32625	0.21881
2. Male	0.57797	0.31042	0.20842
Rural/Urban Environment			
Environment	a=0	a=1	a=2
0.Rural	0.75858	0.42793	0.29209
1.Urban	0.42458	0.20854	0.13492
Province			
Province	a=0	a=1	a=2
1.Western Cape	0.28865	0.11775	0.06823
2. Eastern Cape	0.70568	0.40891	0.28510
3. Northern Cape	0.56577	0.28071	0.17968
4. Free State	0.66040	0.37730	0.26307
5. KwaZulu-Natal	0.65515	0.35267	0.23538
6. North West	0.58625	0.30531	0.20242
7. Gauteng	0.36786	0.17617	0.11215
8. Mpumalanga	0.61675	0.31675	0.20417
9. Limpopo	0.72865	0.41548	0.28544

Source: Computed from SAMOD version 1.1 (2009)

7.4.1.2. Analysis of poverty profile for people living in households without children

As part of the analysis process, the study undertook poverty quantification for people living in households without children. Data analysis was done using the Foster-Greer-Thorbecke (FGT) indices and the Gini co-efficient index (GI). A summary of the analysis is presented below.

1. *First,* analysis for all observation indicated poverty rate (P0), poverty gap (P1) and poverty severity (P2) for people living in households without children was 20%, 11% and 8% respectively.

2. *Second*, quantification of poverty at the racial level indicated that, for people living in households without children, there was a difference in poverty profile amongst different race groups in South Africa. For example, in African households, the poverty rate (P0), the poverty gap (P1), and poverty severity (P2) was 26%, 14% and 10%. For Coloured households, it was 0.13, 0.06 and 0.03. The analysis shows little poverty amongst Indian and White people living in households without children.

3. *Third*, statistically no significant variation was observed, at gender level, for people living in households without children. The analysis indicated the poverty rate (P0), the poverty gap (P1), and poverty severity (P2) for females living in households containing children was 21%, 11% and 7%, whereas, for males, it was 23%, 11% and 8% respectively.

4. *Fourth,* the poverty rate (P0), the poverty gap (P1), and poverty severity (P2) for people living in households without children in rural households was 30% and 16% and 11% whereas, in urban households, it was 18%, 8% and 6% respectively.

5. *Fifth*, provincially, the highest poverty profile was observed for people living in households without children in Eastern Cape, Limpopo, and the Free State provinces. In the Eastern Cape, the poverty rate (P0), the poverty gap (P1), and poverty severity (P2) were 32%, 17% and 13%. In Limpopo, the poverty rate (P0), the poverty gap (P1), and poverty severity (P2) were 29%, 16% and 12%. In the Free State, the poverty rate (P0), the poverty gap (P1), and poverty severity (P2) were 28%, 17% and 13%, whereas, people living in households without children in the Western Cape showed the lowest level of poverty profile, compared to other provinces. In the Western Cape, the poverty rate (P0), the poverty gap (P1), and poverty severity (P2) were 7%, 3% and 2% respectively. The following table summarises the result of the analysis.

Table 7: 4 Simulated poverty profile for people living in households without children S I

All observations			
All obs	Poverty rate index %) (a=0)	Poverty gap index (a=1)	Poverty severity index (a=2)
	0.20958	0.11097	0.08047
Race			
Race	a=0	a=1	a=2
1. African	0.26754	0.14256	0.10396
2. Coloured	0.13076	0.06035	0.03791
3. Indian	0.01227	0.01208	0.01190
4. White	0.00428	0.00289	0.00269
5. Others	0.00000	0.00000	0.00000
Gender			
Gender	a=0	a=1	a=2
1. Female	0.21553	0.11159	0.07955
2. Male	0.20501	0.11049	0.08118
Rural/Urban Environment			
Environment	a=0	a=1	a=2
0.Rural	0.30705	0.16578	0.11897
1.Urban	0.16013	0.08316	0.06094
Province			
Province	a=0	a=1	a=2
1.Western Cape	0.07127	0.03231	0.02292
2. Eastern Cape	0.32169	0.17969	0.13106
3. Northern Cape	0.19314	0.08953	0.05874
4. Free State	0.28722	0.17113	0.13292
5. KwaZulu-Natal	0.21459	0.11493	0.08424
6. North West	0.22713	0.11854	0.08563
7. Gauteng	0.13746	0.06478	0.04435
8. Mpumalanga	0.23456	0.11759	0.08380
9. Limpopo	0.29447	0.16586	0.12174

Source: Computed from SAMOD version 1.1 (2009)

7.4.1.3. Analysis of inequality for people living in households with children

Amiel and Cowell (1999) observed that the Gini co-efficient measures the degree of inequality within a society. According to them, if the Gini co-efficient is 0, it means there is absolute equality, and 1 indicates absolute inequality/concentration. The inequality rate for all observations of people living in households with children was very high and the Gini co-efficient was 0.67. The inequality profile, using the Gini co-efficient for all observations of people living in households with children, according to race, gender, urban/rural environment, and provincial levels, is presented below.

Inequality profile by race: When examining racial categories, the difference in the Gini co-efficients become apparent. The inequality for African people living in households with children was 0.59, whereas for White people living in households with children, it was 0.41. Furthermore, the Gini co-efficient for Coloured people living in households with children was 0.54 and for Indian households, 0.46. Therefore, the least inequality pertains to a White household.

Inequality profile by gender: There is no notable welfare inequality for people living in households with children in either the female or the male categories as the Gini co-efficient was 0.67 for both.

Inequality profile by rural/urban environment: The Gini co-efficient showed that there was a high welfare inequality difference between people living in households with children in rural areas and those in urban areas as the Gini co-efficient was 0.58 and 0.64 respectively.

Inequality profile by province: The highest inequality was observed for people living in households with children in the Free State, the Northern Cape and the Eastern Cape. Their Gini co-efficients were 0.71, 0.69 and 0.66, respectively, whereas people living in households with children in the Western Cape showed the lowest inequality profile compared to other provinces, that is, a Gini co-efficient of 0.58. Table 7.4 below shows the simulated inequality profile for people living in households with children in Scenario I (see Annexure 1).

Table 7: 5 Simulated inequality profile for people living in households with children S I

All observations	Gini
	0.67131
Race	
1. African	0.59597
2. Coloured	0.54672
3. Indian	0.46563
4. White	0.41038
5. Others	0.55982
Gender	
1. Female	0.66776
2. Male	0.67455
Rural/urban Environment	
0.Rural	0.58151
1.Urban	0.64568
Province	
1.Western Cape	0.58735
2. Eastern Cape	0.66865
3. Northern Cape	0.69321
4. Free State	0.71958
5. KwaZulu-Natal	0.65582
6. North West	0.62744
7. Gauteng	0.65138
8. Mpumalanga	0.61595
9. Limpopo	0.68064

Source: Computed from SAMOD version 1.1 (2009)

7.4.1.4. Analysis of inequality for people living in households without children

The research results clearly indicate that a large majority of people living in households without children had relatively less welfare inequality. Even though the inequality rate for people living in households without children was high, when compared to people living in households with children, it was relatively low. The summary of the findings at different levels is presented below.

As part of the research analysis, the inequality profile of people living in households without children, for all observations, was examined. The Gini co-efficient for all observations of people living in households without children was 0.64.

Welfare inequality by race: The highest Gini co-efficient inequality was observed for African people living in households without children and the lowest Gini co-efficient inequality was observed for White people living in households without children, that is, 0.58 and 0.47 respectively.

Welfare inequality by gender: The results showed welfare inequality in both female and male groups as the Gini co-efficient was 0.66 and 0.63 respectively.

Welfare inequality by rural/urban environment: The Gini co-efficient showed high welfare inequality between rural and urban areas as the Gini co-efficient was 0.68 and 0.62 respectively.

Welfare inequality by province: The highest inequality was observed for people living in households without children in the Eastern Cape, Northern Cape and Free State, the Gini coefficient being 0.68, 0.67 and 0.66 respectively, while people living in households without children in the Western Cape and Mpumalanga displayed the lowest inequality profile, when compared with other provinces. For example, in the Western Cape, the Gini co-efficient was 0.59 and in Mpumalanga, 0.60.

Table 7: 6 Simulated inequality for people living in households without children S I

All observation	Gini
	0.64821
Race	
1. African	0.58332
2. Coloured	0.53316
3. Indian	0.53699
4. White	0.47408
5. Others	0.49866
Gender	
0. Female	0.66003
1. Male	0.63815
Rural/Urban Environment	
0.Rural	0.68178
1.Urban	0.62031
Province	
1.Western Cape	0.59011
2. Eastern Cape	0.68804
3. Northern Cape	0.67430
4. Free State	0.66844
5. KwaZulu-Natal	0.64170
6. North West	0.65458
7. Gauteng	0.61128
8. Mpumalanga	0.60732
9. Limpopo	0.68069

Source: Computed from SAMOD version 1.1 (2009)

7.4.1.5. Major findings

Scenario I was modelled with the objective of analysing to what extent there would be poverty and inequality for people living in households with or without children in SA in the absence of the Child Support Grant. Thus, the scenario was used to evaluate and quantify the extent to which the measured poverty and inequality is deepened by the removal of the Child Support

Grant from the total household income and, subsequently, to measure the resulting poverty and inequality.

In the absence of the Child Support Grant, Scenario I revealed that the rate of poverty and inequality for people living in households with children was very high. For example, the result of simulation clearly indicated that the overall poverty rate (P0) for people living in households with children on the absolute poverty line of R450 per capita per month was 59% after excluding the benefits of the Child Support Grant. In order to assess the level of the average poverty gap (P1) and poverty severity index (P2) on the absolute poverty line of R450 per capita per month, the model was simulated and the results indicated 31% and 21% respectively, after excluding the benefits of the Child Support Grant. Therefore, the average poverty gap index (P1) indicated that the amount of money transfer that is needed to lift the poor out of poverty for each person represents R139.50 of the absolute poverty line. The poverty severity index (P2) [R94.50] also implied that the very poor in the population were even further below the absolute poverty line of R450 per capita per month. With the aim of measuring the level of the Gini co-efficient after excluding the benefits of the Child Support Grant, the model was simulated, and the result showed 0.67 for all observations. In Scenario I, the South African national Child Support Grant expenditure was simulated at ***R0 in total per annum and with no recipients***. Annexure 1 shows the detailed result of the simulation.

A need exists to bring about social justice for poor people living in households with children and to reduce the poverty and welfare inequality in society. In this regard, Rawls' theory of justice explains that social and economic advantages should be distributed to all members of society. The South African Constitution (1996) also compels government to take measures and provide effect to the set of socio-economic rights of children recognised in the Bill of Rights.

Gates (1980) emphasised that institutional rules and models are key elements in the implementation of social welfare policies. Gates further argued that the formulation of clear and concise implementation modalities depends on effective programming. Marcus (2004) and Rawlings and Rubio (2005) also noted that the distribution of national resources through social welfare policies, such as cash transfer, is an essential part of poverty reduction at the household level. They believed that social security measures are important elements of poverty reduction.

The study argues that, with the objective to reduce poverty and inequality of people living in households with children and to bring about sustainable social development, the government should implement appropriate implementation modalities of social welfare policies and institutional arrangements (new regulations, policies, protocols, procedures, etc.) and adequate resources/cash transfers. Monitoring and evaluation are also very decisive factors for poverty reduction especially for those people living in households with children in South Africa.

7.4.2. Simulation of Scenario II

Neo-liberal/free market regimes are characterised by a selectivity/means-tested implementation modality of social welfare, which restricts the scope of people's social rights. Axford (1995) observed that this is a classical United States of America welfare system, which relies on a high degree of private market welfare system inputs. Peters (1997) indicated that, according to the neoliberal view, social welfare policies are implemented to relieve poverty only when people are unable to participate in the money economy for reasons beyond their control.

Leatt, Rosa, and Hall (2005) reported that means-test/selectivity modalities for social security are procedures undertaken to make a decision about whether or not an individual or family should be given definite kinds of benefits from the government. According to them, the term *test* mainly entails eligibility criteria for access to the benefits. In the context of South Africa, the two pieces of legislation which provide for social grants are the Social Assistance Act 13 of 2004 and the Social Security Agency Act 9 of 2004. The South African government also adopted the neoliberal policies of a social welfare system through using means tests or conditionality for social security. Accordingly, the government decided that only the most vulnerable groups of people should receive the grants. Two main conditions are prerequisites for qualifying for grants, that is, age and amount of money/property that people have.

The purpose of the modelling of Scenario II was to investigate the extent of poverty and income inequality profiles for people living in households with or without children under the 2007 population baseline and the 2008 government policy rules, by which the Child Support Grant is given up to the age of 13 years old and the policy rule that provides R210 per child per month is applicable. In general, the policy scenario helped to quantify the outcomes resulting from granting of the Child Support Grant.

With the objective of investigating issues pertaining to poverty and inequality amongst people living in households with or without children for all observations, according to race, gender, rural/urban environment and various provinces in South Africa, simulations were created using SAMOD, and relationships were investigated using the Foster-Greer-Thorbecke (FGT) indices for measuring poverty. Social welfare inequality in society was also measured using the Gini co-efficient (See Annexure 2). A summary of the analysis of policy Scenario II and major findings are presented below.

7.4.2. Syntax used in Scenario II

Throughout the research process, data analysis was done using statistical software STATA version 10.1. Kohler and Kreuter (2005) claimed that the main reason for using this software is its advantage in handling large data sets with relative ease and because it is quick to use. STATA helped in analysing a large amount of data without difficulty. In general, an analysis of information was carried out using text, tables and figures. Box 7:2 below depicts the types of syntax that was used in the analysis process.

Box 7: 2 STATA syntax used in the analysis of Scenario II.

```
log using scenario-2
set memory 500m
adopath+ "C:\SAMOD\TOOLS\Stata tools"
insheet using "C:\SAMOD\Output\sa_2008&s2output_ext_std_sa.txt"
n_ben co_bch, label ( "CSG" ) takeup
total_exp co_bch, label ( "CSG" )
bys cohhid: egen hh_inc07 = sum(std_dispy)
bys cohhid: gen nHHmem = _N
gen pcap_inc07= hh_inc07/nHHmem
replace pcap_inc07 = 0.1 if pcap_inc07 <=0
gen n_ch_in_hh=0
```

```
forvalues n=1(1)25{
bys cohhid: replace n_ch_in_hh=n_ch_in_hh+1 if codag[`n']<18
}
gen anydepch=0
replace anydepch=1 if n_ch_in_hh>0

*POVDECO

*FOR TOTAL POPULATION

povdeco pcap_inc07, pl(450)
preserve
keep if anydepch==1

*FOR PEOPLE IN HHOLDS WITH CHILDREN

povdeco pcap_inc07, pl(450)
povdeco pcap_inc07, pl(450) by(codrc)
povdeco pcap_inc07, pl(450) by(codgn)
povdeco pcap_inc07, pl(450) by(codur)
povdeco pcap_inc07, pl(450) by(codrgn1)
restore
preserve
keep if anydepch==0

*FOR PEOPLE IN HHOLDS WITHOUT CHILDREN

povdeco pcap_inc07, pl(450)
povdeco pcap_inc07, pl(450) by(codrc)
povdeco pcap_inc07, pl(450) by(codgn)
povdeco pcap_inc07, pl(450) by(codur)
povdeco pcap_inc07, pl(450) by(codrgn1)
restore

*INEQDECO

*FOR TOTAL POPULATION

ineqdeco pcap_inc07
preserve
keep if anydepch==1

*FOR PEOPLE IN HHOLDS WITH CHILDREN

ineqdeco pcap_inc07
ineqdeco pcap_inc07, by(codrc)
ineqdeco pcap_inc07, by(codgn)
ineqdeco pcap_inc07, by(codur)
ineqdeco pcap_inc07, by(codrgn1)
restore
preserve
keep if anydepch==0

*FOR PEOPLE IN HHOLDS WITHOUT CHILDREN

ineqdeco pcap_inc07
```

```
ineqdeco pcap_inc07, by(codrc)
ineqdeco pcap_inc07, by(codgn)
ineqdeco pcap_inc07, by(codur)
ineqdeco pcap_inc07, by(codrgn1)
restore

log close
```

7.4.3. Quantification of poverty and inequality in Scenario II

The use of Foster-Greer-Thorbecke (FGT) indices of measuring poverty to quantify poverty is a widely applied practice to help in understanding individual level vulnerability. In this regard, FGT indices are useful tools in designing appropriate social welfare policies; they provide a yardstick for measuring and determining the extent of certain poverty lines and thus help to develop an appropriate policy and development strategy. In the context of this research, the consumption expenditure is based on the absolute poverty line of R450 per capita per month. In addition, quantification of inequality has been done using the Gini co-efficient.

7.4.4. Poverty analysis at the household level in Scenario II

7.4.4.1. Analysis of poverty for people in households living with children in Scenario II

In Scenario II, the level of poverty and inequality among people in households living with or without children was simulated. Analysis of Scenario II revealed that the incidence of poverty and inequality was very high for people in households living with children. Table 7:7 shows the poverty profile for people living in households with children according to race, gender, rural/urban environment and provinces. The findings of the analysis of Scenario II are presented in the following section.

For all observations of people in households living with children, the poverty rate (P0) was 53% and the poverty gap index (P1) was 0.21.

Child poverty by race: Children living in African and Coloured families were shown to be very poor, when compared with other races. For example, data analysis indicated that the poverty rate (P0) was about 60% for people living in households with children in African families and about 28% for people living in households with children in Coloured families, whereas the poverty rate (P0) was only 7% for people living in households with children in Indian families and about 2% for people living in households with children in White families. In general, the poverty gap and poverty severity were very high for people living in households with children in African families, followed by Coloured families.

Child poverty by gender: Statistically only small variations were observed at gender level for people living in households with children. The analysis indicated the poverty rate (P0) for female people living in households with children was 54% and for male people living in households with children of the same type, 52%.

Child poverty by rural/urban environment: The poverty rate, poverty gap and poverty severity were very high for people living in households with children in rural households. The result of the analysis showed that the poverty rates (P0) for people living in households with children in rural and urban households were 69% and 36% respectively.

Child poverty by province: Data analysis indicated that there are variations on the poverty profile for people living in households with children in various provinces. For example, the poverty rate (P0), the poverty gap (P1) and poverty severity (P2) for people living in households with children was very high in Limpopo, the Eastern Cape and the Free State. The poverty rate

(P0) of these provinces was 66%, 65% and 61% respectively, whereas the poverty rate (P0) for people living in households with children in Gauteng was about 31% and in the Western Cape, approximately 22%.

Table 7: 7 Simulated poverty profile for people living in households with children S II

All observations			
All obs	Poverty rate index %, (a=0)	Poverty gap index (a=1)	Poverty severity index (a=2)
	0.53331	0.21848	0.11660
Race			
Race	a=0	a=1	a=2
1. African	0.60359	0.24981	0.13385
2. Coloured	0.28003	0.09856	0.04896
3. Indian	0.07201	0.01405	0.00495
4. White	0.02016	0.00837	0.00482
5. Others	0.28846	0.12829	0.07285
Gender			
Gender	a=0	a=1	a=2
1. Female	0.54422	0.22195	0.11781
2. Male	0.52034	0.21434	0.11516
Rural/Urban Environment			
Environment	a=0	a=1	a=2
0.Rural	0.69501	0.29073	0.15463
1.Urban	0.36928	0.14518	0.07801
Province			
Province	a=0	a=1	a=2
1.Western Cape	0.22433	0.07394	0.03590
2. Eastern Cape	0.65224	0.28121	0.15356
3. Northern Cape	0.49684	0.18911	0.09757
4. Free State	0.61610	0.27854	0.15968
5. KwaZulu-Natal	0.58515	0.23987	0.12563
6. North West	0.52119	0.21119	0.11264
7. Gauteng	0.31548	0.12323	0.06553
8. Mpumalanga	0.56412	0.21307	0.10802
9. Limpopo	0.66896	0.27895	0.14982

Source: Computed from SAMOD version 1.1 (2009)

7.4.4.2. Analysis of poverty for people in households living without children in Scenario II

As indicated in Tables 7:6, 7:7, 7:8, and 7:9, the levels of poverty and inequality for people living in households without children are shown. Results of the simulation are presented below.

Poverty by race (no children): Data analysis indicated that the poverty rate (P0) was about 26% for people living in households without children in African families and about 13% for people living in households without children in Coloured families, whereas the poverty rate (P0) was only 1.2% for people living in households without children in Indian families and about 0.04% for people living in households without children in White families. The, poverty gap index and poverty severity index are also relatively high for people living in households without children in African families, followed by Coloured families.

Poverty by gender (no children): Statistically, no significant variation was observed at gender level for households living without children.

Poverty by rural/urban environment (no children): The poverty rate, the poverty gap and poverty severity were observed to be very high for people living in households without children in rural households. The result of the analysis showed that the poverty rates (P0) for people living in households without children in rural households were 30%.

Poverty by province (no children): Data analysis indicates that there are variations on the poverty profile for people living in households without children in various provinces. For example, the poverty rate (P0) for people living in households without children is very high in the Eastern Cape at 32%, Limpopo at 29%, and the Free State at 28%.

Table 7: 8 Simulated poverty profile for people living in households without children S II

All observations			
All obs	Poverty rate index %) (a=0)	Poverty gap index (a=1)	Poverty severity index (a=2)
	0.20958	0.11097	0.08047
Race			
Race	a=0	a=1	a=2
1. African	0.26754	0.14256	0.10396
2. Coloured	0.13076	0.06035	0.03791
3. Indian	0.01227	0.01208	0.01190
4. White	0.00428	0.00289	0.00269
5. Others	0.00000	0.00000	0.00000
Gender			
Gender	a=0	a=1	a=2
0. Female	0.21553	0.11159	0.07955
1. Male	0.20501	0.11049	0.08118
Rural/Urban Environment			
Environment	a=0	a=1	a=2
0.Rural	0.30705	0.16578	0.11897
1.Urban	0.16013	0.08316	0.06094
Province			
Province	a=0	a=1	a=2
1.Western Cape	0.07127	0.03231	0.02292
2. Eastern Cape	0.32169	0.17969	0.13106
3. Northern Cape	0.19314	0.08953	0.05874
4. Free State	0.28722	0.17113	0.13292
5. KwaZulu-Natal	0.21459	0.11493	0.08424
6. North West	0.22713	0.11854	0.08563
7. Gauteng	0.13746	0.06478	0.04435
8. Mpumalanga	0.23456	0.11759	0.08380
9. Limpopo	0.29447	0.16586	0.12174

Source: Computed from SAMOD version 1.1 (2009)

7.4.4. Analysis of inequality for people living in households with children in Scenario II

Theoretically, the Gini co-efficient measures the degree of inequality within a society. According to Amiel and Cowell (1999), if the Gini co-efficient is 0, it means there is absolute equality, and 1 indicates absolute inequality/concentration. Simulation for a social welfare inequality profile was done in the course of the current research, and the Gini co-efficient result for all observations of people living in households with children according to race, gender, urban/rural environment, and province are presented below.

Data analysis indicated that the inequality rate for people living in households with children was high, with the Gini co-efficient showing 0.61.

Welfare inequality by race: At the racial level, the highest Gini co-efficient inequality was observed for African people living in households with children and the lowest Gini co-efficient inequality was observed in White people living in households with children, that is, 0.51 and 0.40 respectively. The least inequality (0.40) was shown for the White race group.

Welfare inequality by race: A small variation in welfare inequality was observed in both female- and male-headed households with children, as the Gini coefficient was 0.60 and 0.62 respectively.

Welfare inequality by rural/urban environment: The Gini co-efficient showed high welfare inequality in rural and urban areas, as the Gini co-efficient was 0.47 and 0.61 respectively.

Welfare inequality by province: The highest inequality was observed for people living in households with children in the Free State and the Northern Cape, with Gini co-efficients of 0.66 and 0.64, respectively, whereas people living in households with children in Mpumalanga showed the lowest inequality profile as compared with other provinces. For example, in Mpumalanga, the Gini co-efficient was 0.55.

Table 7: 9 Simulated inequality profile of people living in households with children S II

All observations	Gini
	0.61536
Race	
1. African	0.51752
2. Coloured	0.51172
3. Indian	0.45863
4. White	0.40929
5. Others	0.53742
Gender	
1. Female	0.60849
2. Male	0.62231
Rural/Urban Environment	
0.Rural	0.47976
1.Urban	0.61471
Province	
1.Western Cape	0.56032
2. Eastern Cape	0.58644
3. Northern Cape	0.64929
4. Free State	0.66486
5. KwaZulu-Natal	0.58735
6. North West	0.57123
7. Gauteng	0.62465
8. Mpumalanga	0.55044
9. Limpopo	0.59534

Source: Computed from SAMOD version 1.1 (2009)

7.4.4.6. Major findings for Scenario II

Microsimulation modelling of Scenario II was undertaken with the assumption of full take-up under the 2007 population baseline and 2008 government policy rules. The research simulation modelled the poverty and inequality impact of extending the Child Support Grant to children up to 13 years of age and applying the policy rule that provides R200 per child per month, using the poverty rate (P0), the poverty gap (P1), poverty severity (P2) and the Gini co-efficient. The overall poverty rate for people living in households with children with an absolute poverty line of R450 per capita per month was 53% after including the benefits of a Child Support Grant. The average poverty gap index was 21%. This shows that the amount of money transfer that is needed to uplift the poor from poverty for each person represents about 24% of the absolute poverty line. The poverty severity index, designated by P2, indicated 13%. This implies that the poor in the population are not far off from the absolute poverty line of R450 per capita per month. The Gini co-efficient for people living in households with children, after including the benefits of the Child Support Grant, was 0.61. In this simulation, there were ***7,664,483*** grant beneficiaries and the estimated total expenditure on the Child Support Grant was ***R26,140,264,608***. (Annexure 2 shows the detailed result of the simulation).

Increasing overall household income through the provision of the Child Support Grant increased the income of the households and reduced the poverty level of people living in households with children. Even though there was a reduction in poverty for people living in households with children under Scenario II, the level or the degree of reduction was very low. This clearly indicates that there is a need to move on from the 2008 government policy rules of implementation to another, better strategy. In general, this shows a lack of good institutional arrangements and implementation modalities of poverty and inequality reduction for people living in households with children.

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7.4.3. Simulation of Scenario III

Local and international evidence has shown that increasing family incomes through cash transfers or subsidies reduces poverty levels in households and enhances children's development. Cash transfers provide effective, immediate relief for the needs of poor children. However, poor households must share everything in order to survive, even income earmarked for child support. Increasing overall household income, therefore, has a huge influence on all members of the household. As other members of a household are better able to meet their own basic needs, the chance of targeted grants reaching their intended beneficiaries also rises (Barrientos & Dejong, 2004; Lund et al,, 2008; Marcus, 2004; Rawlings & Rubio, 2005; Save the children, 2005, Schubert, 2005).

The philosophical underpinning of Scenario III is based on the view of a neoliberal/free-market implementation modality of social welfare policies. It mainly focuses on the principles and values of a system with a high degree of private-market welfare, that is, selectivity/means-tested implementation modalities of social welfare.

The main purpose of Scenario III was to examine the effect of the Child Support Grant on people living in households with or without children, using the government 2008 policy rules on the 2007 population baseline. The eligibility of the beneficiaries is based on means-test criteria and the children, including 15-year-olds, can access the grant and policy rule that provides R210 per child per month (Scenario III is a more “joined-up” version of Scenario II, but it takes into account the South African Schools’ Act (1996), which made basic education compulsory for children aged 7 to 15 years). In order to assess the poverty and inequality effect of Scenario III, on people living in households with or without children, simulation was done and analysis undertaken (see Annexure 3). Analysis also focused on all observations made according to race, gender, rural/urban environment and provincial level. Each of the themes and syntax used in STATA is presented below.

7.4.3.1. Syntax used in Scenario III

The types of syntax used in the analysis process are presented below in Box 7:3.

Box 7: 3 STATA syntax used in the analysis of Scenario III.

```
log using scenario-3
set memory 500m
adopath+ "C:\SAMOD\TOOLS\Stata tools"
insheet using "C:\SAMOD\Output\sa_2008&s3output_ext_std_sa.txt"
n_ben co_bch, label ( "CSG" ) takeup
total_exp co_bch, label ( "CSG" )
bys cohhid: egen hh_inc07 = sum(std_dispy)
bys cohhid: gen nHHmem = _N
gen pcap_inc07= hh_inc07/nHHmem
replace pcap_inc07 = 0.1 if pcap_inc07 <=0
gen n_ch_in_hh=0
forvalues n=1(1)25{
bys cohhid: replace n_ch_in_hh=n_ch_in_hh+1 if codag[`n']<18
}
gen anydepch=0
replace anydepch=1 if n_ch_in_hh>0

*POVDECO
*FOR TOTAL POPULATION

povdeco pcap_inc07, pl(450)
preserve
keep if anydepch==1

*FOR PEOPLE IN HHOLDS WITH CHILDREN

povdeco pcap_inc07, pl(450)
povdeco pcap_inc07, pl(450) by(codrc)
povdeco pcap_inc07, pl(450) by(codgn)
povdeco pcap_inc07, pl(450) by(codur)
povdeco pcap_inc07, pl(450) by(codrgn1)
restore
preserve
keep if anydepch==0

*FOR PEOPLE In HHOLDS WITHOUT CHILDREN

povdeco pcap_inc07, pl(450)
```

```
povdeco pcap_inc07, pl(450) by(codrc)
povdeco pcap_inc07, pl(450) by(codgn)
povdeco pcap_inc07, pl(450) by(codur)
povdeco pcap_inc07, pl(450) by(codrgn1)
restore

*INEQDECO
*FOR TOTAL POPULATION

ineqdeco pcap_inc07
preserve
keep if anydepch==1

*FOR PEOPLE IN HHOLDS WITH CHILDREN

ineqdeco pcap_inc07
ineqdeco pcap_inc07, by(codrc)
ineqdeco pcap_inc07, by(codgn)
ineqdeco pcap_inc07, by(codur)
ineqdeco pcap_inc07, by(codrgn1)
restore
preserve
keep if anydepch==0

*FOR PEOPLE IN HHOLDS WITHOUT CHILDREN

ineqdeco pcap_inc07
ineqdeco pcap_inc07, by(codrc)
ineqdeco pcap_inc07, by(codgn)
ineqdeco pcap_inc07, by(codur)
ineqdeco pcap_inc07, by(codrgn1)
restore
log close
```


7.4.4. Poverty analysis in Scenario III

7.4.4.1. Analysis of poverty for people living in households with children in Scenario III

Scenario III was simulated to analyse the level of poverty and inequality among people living in households with children. A microsimulation model called SAMOD helped in analysing the output by means of computer-based statistical software called STATA. Foster-Greer-Thorbecke (FGT) indices such as the poverty rate (P0), the poverty gap (P1) and poverty severity (P2) and the Gini co-efficient were used to estimate the extent of poverty. Scenario III revealed that the incidence of poverty and inequality was very high for people living in households with children. Table 7:10 shows the poverty profile of people living in households with children, according to race, gender, rural/urban environment and provincial categories. The following section presents the findings of the analysis of Scenario III.

Child poverty by race: Children living in African and Coloured families are very poor when compared with other races. For example, data analysis indicated that the poverty rate (P0) was about 59% for people in African families living in households with children and about 26% for people in Coloured families living in households with children, whereas the poverty rate (P0) was only 6% for people in Indian families living in households with children and about 2% for people in White families living in households with children. In general, the poverty gap and poverty severity were very high for people in African families, followed by Coloured families, living in households with children.

Child poverty by gender: Statistically, only a small variation was observed at gender level for people living in households with children. The analysis indicated the poverty rate (P0) for female people living in households with children was 53% and for males, 51%.

Child poverty by rural/urban environment: The poverty rate, poverty gap and poverty severity were very high for people living in households with children in rural areas. The results of the analysis show that the poverty rates (P0), for people living in households with children in rural areas and in urban areas were 68% and 36% respectively.

Child poverty by province: Data analysis indicated that there are variations in the poverty profile for people living in various provinces in households with children. For example, the poverty rate (P0), the poverty gap (P1) and poverty severity (P2) for people living in households with children was very high in Limpopo, the Eastern Cape and the Free State. The poverty rate (P0) of these provinces was indicated to be 65%, 64% and 60% respectively, whereas the poverty rate (P0) for people living in households with children in Gauteng was about 31% and in the Western Cape, about 21%.

Table 7: 10 Simulated poverty profile for people living in households with children S III

All observations			
All obs	a=0	a=1	a=1
	0.52293	0.20445	0.10475
Race			
Race	a=0	a=1	a=1
1. African	0.59288	0.23389	0.12027
2. Coloured	0.26792	0.09156	0.04397
3. Indian	0.06393	0.01142	0.00341
4. White	0.02016	0.00781	0.00427
5. Others	0.28846	0.12765	0.07209
Gender			
Gender	a=0	a=1	a=1
1. Female	0.53355	0.20796	0.10603
2. Male	0.51029	0.20028	0.10322
Rural/Urban Environment			
Environment	a=0	a=1	a=1
0.Rural	0.68304	0.27144	0.13806
1.Urban	0.36051	0.13649	0.07096
Province			
Province	a=0	a=1	a=1
1.Western Cape	0.21103	0.06837	0.03224
2. Eastern Cape	0.64192	0.26285	0.13729
3. Northern Cape	0.48679	0.17665	0.08820
4. Free State	0.60765	0.26409	0.14599
5. KwaZulu-Natal	0.57387	0.22460	0.11247
6. North West	0.51021	0.19793	0.10179
7. Gauteng	0.31097	0.11701	0.06016
8. Mpumalanga	0.55396	0.19781	0.09636
9. Limpopo	0.65607	0.25942	0.13331

Source: Computed from SAMOD version 1.1 (2009)

7.4.4.4. Analysis of inequality for people living in households with children for Scenario III

Data analysis indicated that the inequality rate for people living in households with children was extremely high and the Gini co-efficient for people living in households with children was 0.60.

Inequality by race: The highest Gini co-efficient inequality was observed for African people living in households with children and the lowest Gini co-efficient inequality was observed for

White people living in households with children, that is, 0.50 and 0.40 respectively. *Inequality by gender*: A small variation of welfare inequality was observed in both female- and male-headed households as the Gini co-efficient was 0.60 and 0.61 respectively.

Inequality by rural/urban environment: The Gini co-efficient showed welfare inequality in rural and urban areas as 0.46 and 0.61 respectively.

Inequality by province: The highest inequality was observed for people living in households with children in the Free State and the Northern Cape, with a Gini co-efficient of 0.65 and 0.64 respectively, whereas people living in households with children in Mpumalanga showed the lowest inequality profile when compared to other provinces. For example, in Mpumalanga, the Gini co-efficient was 0.54.

Table 7: 11 Simulated inequality profile for people living in households with children S III

All observations	Gini
	0.60757
Race	
1. African	0.50697
2. Coloured	0.50685
3. Indian	0.45747
4. White	0.40912
5. Others	0.53652
Gender	
1. Female	0.60057
2. Male	0.61468
Rural/Urban Environment	
0.Rural	0.46667
1.Urban	0.61036
Province	
1.Western Cape	0.55642
2. Eastern Cape	0.57511
3. Northern Cape	0.64328
4. Free State	0.65688
5. KwaZulu-Natal	0.57813
6. North West	0.56338
7. Gauteng	0.62148
8. Mpumalanga	0.54136
9. Limpopo	0.58359

Source: Computed from SAMOD version 1.1 (2009)

7.4.4.6. Major findings for Scenario III

In Scenario III, SAMOD simulated the effect of the Child Support Grant on people living in households with children, using government 2008 policy rules on the 2007 population baseline. The eligibility of the beneficiaries was based on means-test criteria, and the children, including those who are15 years old, could access the grant and benefit from the policy rule that provides R210 per child per month. The conditions modelled in Scenario III approved to have considerable impact on reducing poverty and inequality for people living in households with children. For example, modelling indicated that the overall poverty rate for people living in households with children with an absolute poverty line of R450 per capita per month was 52%, after including the benefits of the Child Support Grant. The average poverty gap index was 0.20. This indicated that the amount of money transfer that is needed to uplift the poor from poverty for each person represents about 20% of the absolute poverty line. The poverty severity index (P2) for people living in households with children was 0.10. This implies that the poor in the population are not far off from the absolute poverty line of R450 per capita per month. The Gini co-efficient for people living in households with children, after including the benefits of the Child Support Grant, was 0.60. In this simulation, there were ***11,934,964*** grant beneficiaries and the estimated total expenditure on the Child Support Grant was ***R30,076,110,305***. (See Annexure 3 for detailed results of the simulation).

Results for Scenario III indicated a relative reduction in poverty and inequality, but still a number of people living in households with children were suffering high rates of poverty and social welfare inequalities. However, the government continues to use the selectivity/means-test modality for implementing the Child Support Grant. Government rationale behind the implementation modalities of the means tests is that limited resources should be channelled to those most in need. However, the means-test modality in practice sometimes excludes those who are in need and eligible for the grant, while including those who are not eligible.

It can be argued that the selectivity/means-test implementation modality for social welfare policies is not in line with South African constitutional rights and not in line with the international legal instruments signed by the South African government.

7.4.4. Simulation of Scenario IV

The purpose of the modelling of Scenario IV was to assess changes in poverty and inequality rates of people living in households with children under the 2007 population baseline and 2008 government policy rules, with the Child Support Grant given up to the age of 18 years old and the policy rule providing R210 per child per month. The policy scenario helped to quantify the outcomes resulting from poverty/inequality of people living in households with children.

Scenario IV was used to to analyse the extent to which social welfare policies, in particular, the Child Support Grant, have an impact on people living in households with children in South Africa. In this scenario, three techniques of the FGT theoretical model of poverty quantification were considered: poverty rate (P0), poverty gap (P1) and poverty severity (P2). In addition, social welfare inequality was identified using the Gini co-efficient (see Annexure IV). Analysis of policy Scenario IV and the quantification of a poverty/inequality profile are presented below.

Syntax used for Scenario IV

Analysis of data was made using computer-based statistical software called STATA. In order to arrive at conclusions, the degree of correlation between information was analysed. The next box presents a description of STATA syntax used for the analysis of Scenario IV.

Box 7: 4 STATA syntax used in the analysis of Scenario IV

```
log using scenario-4
set memory 500m
adopath+ "C:\SAMOD\TOOLS\Stata tools"
insheet using "C:\SAMOD\Output\sa_2008&s4output_ext_std_sa.txt"
n_ben co_bch, label ( "CSG" ) takeup
total_exp co_bch, label ( "CSG" )
bys cohhid: egen hh_inc07 = sum(std_dispy)
bys cohhid: gen nHHmem = _N
gen pcap_inc07= hh_inc07/nHHmem
```

```
replace pcap_inc07 = 0.1 if pcap_inc07 <=0
gen n_ch_in_hh=0
forvalues n=1(1)25{
bys cohhid: replace n_ch_in_hh=n_ch_in_hh+1 if codag[`n']<18
}
gen anydepch=0
replace anydepch=1 if n_ch_in_hh>0

*POVDECO
*FOR TOTAL POPULATION

povdeco pcap_inc07, pl(450)
preserve
keep if anydepch==1

*FOR PEOPLE IN HHOLDS WITH CHILDREN

povdeco pcap_inc07, pl(450)
povdeco pcap_inc07, pl(450) by(codrc)
povdeco pcap_inc07, pl(450) by(codgn)
povdeco pcap_inc07, pl(450) by(codur)
povdeco pcap_inc07, pl(450) by(codrgn1)
restore
preserve
keep if anydepch==0

*FOR PEOPLE IN HHOLDS WITHOUT CHILDREN

povdeco pcap_inc07, pl(450)
povdeco pcap_inc07, pl(450) by(codrc)
povdeco pcap_inc07, pl(450) by(codgn)
povdeco pcap_inc07, pl(450) by(codur)
povdeco pcap_inc07, pl(450) by(codrgn1)
restore

*INEQDECO
*FOR TOTAL POPULATION

ineqdeco pcap_inc07
preserve
keep if anydepch==1

*FOR PEOPLE IN HHOLDS WITH CHILDREN

ineqdeco pcap_inc07
ineqdeco pcap_inc07, by(codrc)
ineqdeco pcap_inc07, by(codgn)
ineqdeco pcap_inc07, by(codur)
ineqdeco pcap_inc07, by(codrgn1)
restore
preserve
keep if anydepch==0

*FOR PEOPLE IN HHOLDS WITHOUT CHILDREN

ineqdeco pcap_inc07
```

```
ineqdeco pcap_inc07, by(codrc)
ineqdeco pcap_inc07, by(codgn)
ineqdeco pcap_inc07, by(codur)
ineqdeco pcap_inc07, by(codrgn1)
restore

log close
```

7.5.4. Poverty analysis for Scenario IV

7.5.4.1. Analysis of poverty for people living in households with children in Scenario IV

Scenario IV was used to analyse the level of poverty and inequality among for people living in households with children. A microsimulation model called SAMOD helped in analysing the outputs by means of computer-based statistical software called STATA. Foster-Greer-Thorbecke (FGT) indices such as poverty rate (P0), poverty gap (P1) and poverty severity (P2) and the Gini co-efficient were used to estimate the extent of poverty. Scenario IV revealed that the incidence of poverty and inequality decreased for people living in households with children. Table 7:12 shows a summary of the poverty profile for people living in households with children, according to race, gender, rural/urban environment and provincial levels. The following section presents the findings of the simulation and analysis result of Scenario IV (details are presented in Annexure 4). The overall poverty rate for people living in households with children for all observations was 51%.

Child poverty by race: Children living in African and Coloured families were shown to be very poor, when compared with other races. For example, data analysis indicated that the poverty rate (P0) was about 58% for people living in households with children in African families and about 25% for people living in households with children in Coloured families, whereas the poverty rate (P0) was only 6% for people living in households with children in Indian families and about 2%

for people living in households with children in White families. In general, poverty gap (P1) and poverty severity (P2) were very high for people living in households with children in African families, followed by Coloured families.

Child poverty by gender: Statistically, only a small variation was observed, at gender level, for people living in households with children. The analysis indicated the poverty rate (P0) for people living in female headed households with children was 52% and for males, 50%.

Child poverty by rural/urban environment: The poverty rate, poverty gap and poverty severity was very high for people living in households with children in rural households. Results of the analysis showed that the poverty rates (P0) for people living in households with children in rural households were 65% and 35%.

Child poverty by province: Data analysis indicated that there were variations on the poverty profile for people living in households with children in various provinces. For example, the poverty rate (P0), the poverty gap (P1) and poverty severity (P2) for people living in households with children was very high in Limpopo, the Eastern Cape and the Free State. The poverty rate (P0) of these provinces accounted for 65%, 63% and 60% respectively, whereas the poverty rate (P0) for people living in households with children in the Western Cape was about 20%. Table 7:12 summarises the poverty rate (P0), the poverty gap (P1) and poverty severity (P2) in the different categories

Table 7: 12 Simulated poverty profile for people living in households with children S IV

All observations			
All obs	a=0	a=1	a=2
	0.51789	0.19416	0.09603
Race			
Race	a=0	a=1	a=1
1. African	0.58783	0.22219	0.11029
2. Coloured	0.26027	0.08648	0.04019
3. Indian	0.06393	0.01020	0.00301
4. White	0.02016	0.00753	0.00385
5. Others	0.28846	0.12316	0.06605
Gender			
Gender	a=0	a=1	a=2
1. Female	0.52794	0.19747	0.09720
2. Male	0.50592	0.19023	0.09465
Rural/Urban Environment			
Environment	a=0	a=1	a=2
0.Rural	0.68223	0.25713	0.12518
1.Urban	0.35117	0.13028	0.06647
Province			
Province	a=0	a=1	a=2
1.Western Cape	0.20586	0.06406	0.02899
2. Eastern Cape	0.63752	0.24817	0.12431
3. Northern Cape	0.46956	0.16799	0.08211
4. Free State	0.60287	0.25228	0.13557
5. KwaZulu-Natal	0.56902	0.21366	0.10309
6. North West	0.51349	0.18860	0.09376
7. Gauteng	0.30185	0.18829	0.08920
8. Mpumalanga	0.54129	0.18829	0.088920
9. Limpopo	0.65634	0.24657	0.12219

Source: Computed from SAMOD version 1.1 (2009)

7.5.4.4. Analysis of inequality for people living in households with children in Scenario IV

Theoretically, the Gini co-efficient measures the degree of inequality within a society. According to Amiel and Cowell (1999), if the Gini co-efficient is 0, this means there is absolute equality, and 1 indicates absolute inequality/concentration. Simulation for a social welfare inequality profile was done and the Gini co-efficient result for all observations for people living in households with children, according to race, gender, urban/rural environment, and provincial levels are presented below.

Data analysis indicated that the inequality rate for people living in households with children was *relatively* low and the Gini co-efficient for people living in households with children was 0.60.

Inequality by race: At the racial level, the highest Gini co-efficient inequality was observed for African people living in households with children and the lowest Gini co-efficient inequality was observed in White people living in households with children, that is, 0.49 and 0.40 respectively. The least inequality accounted for the White race group, that is, 0.40.

Inequality by race: There was a small variation of welfare inequality in both female and male groups as the Gini co-efficient was 0.59 and 0.60 respectively.

Inequality by rural/urban environment: The Gini co-efficient showed welfare inequality in rural and urban areas as was 0.45 and 0.60 respectively.

Inequality by province: The highest inequality was observed for people living in households with children in Free State with a Gini co-efficient of 0.65. People living in households with children in the Mpumalanga have the lowest inequality profile, when compared with other provinces, with a Gini co-efficient of 0.53.

Table 7: 13 Simulated inequality profile for people living in households with children S IV

All observations	Gini
	0.60223
Race	
1. African	0.49909
2. Coloured	0.50436
3. Indian	0.45607
4. White	0.40885
5. Others	0.53737
Gender	
1. Female	0.59496
2. Male	0.60966
Rural/Urban Environment	
0.Rural	0.45413
1.Urban	0.60693
Province	
1.Western Cape	0.55531
2. Eastern Cape	0.56604
3. Northern Cape	0.63909
4. Free State	0.65055
5. KwaZulu-Natal	0.57163
6. North West	0.55824
7. Gauteng	0.61837
8. Mpumalanga	0.53583
9. Limpopo	0.57561

Source: Computed from SAMOD version 1.1 (2009)

7.5.4.6. Major findings for Scenario IV

The research simulation modelled changes in poverty and inequality rates of people living in households with children under the 2007 population baseline and 2008 government policy rules, with the Child Support Grant given up to the age of 18 years old and the policy rule providing R210 per child per month, using the poverty rate (P0), the, poverty gap (P1), poverty severity (P2) and the Gini co-efficient. The overall poverty rate for people living in households with children with an absolute poverty line of R450 per capita per month was 51% after including the benefits of the Child Support Grant. The average poverty gap index was 19%. This shows that the amount of money transfer that is needed to uplift the poor from poverty, for each person, represents about 19% of the absolute poverty line. The poverty severity index (P2) indicated 3%. This implies that the poor in the population are not far off from the absolute poverty line of R450 per capita per month. The Gini co-efficient for people living in households with children, after including the benefits of the Child Support Grant, was 0.60. In this simulation, there were ***12,928,605*** grant beneficiaries and the estimated total expenditure on the Child Support Grant was ***R32,580,085,021***. (Annexure 4 shows the detailed result of the simulation).

Results of analysis of the simulation indicated that extending the Child Support Grant to the age of 18 years and under the 2008 government policy rules (i.e., a means test that provides R210 per child per month) has an impact on the poverty rate (P0) the poverty gap (P1), poverty severity (P2) and the Gini co-efficient. Modelling of Scenario IV proved that the rate of poverty and inequality was reduced, so revising and establishing new institutional arrangements (designing new policies, rules, regulations, models, procedures, steps, etc.) and considering the Child Support Grant up to the age of 18 years would be a good strategy for reducing poverty and inequality amongst people living in households with children in South Africa. In addition, the modelling of policy Scenario IV also indicated that an increase in the Child Support Grant has a positive correlation with the reduction of child poverty in South Africa.

7.4.5. Simulation of Scenario V

As discussed earlier (in Chapter 2), Rawls' theory of justice explains two fundamental principles of justice: First, the right to have basic liberty equal to others, and second, the right to have social and economic advantages distributed to all members of society. Rawls (1971) noted that the theory of justice conveys equal rights for all individuals and denies injustice toward any particular group of individuals, regardless of age, sex, colour, religion, race and social status. Rawls, in his theory of justice, explained that in the societal function, resources must be distributed to all members of that society, upholding an acceptable standard of living within the particular society. Gorvoitz (2001) agreed that Rawls provided a powerful instrument for illuminating social problems within a society. He further noted that Rawls' theory provides a conceptual framework, in a society assumed to consist of free and equal persons, that explains the significance of political and personal liberties, of equal opportunity, and of co-operative arrangements that benefit the more and the less advantaged members of society.

From the above theoretical arguments, one can easily understand the existing positive relationship between the successful implementation of social welfare policies and the reduction of social problems such as poverty, inequality and discrimination.

The purpose of modelling Scenario V was to explore changes in poverty and inequality rates for people living in households with or without children by giving an envisioned universal child support grant to benefit children up to the age of 18 years and applying a policy rule that provides R210 per child per month. The policy scenario helped to quantify the outcomes resulting from a universal child support grant and subsequent measurements of the resulting poverty/inequality for people living in households with or without children.

In line with Rawls' theory of justice and conceptual arguments, Scenario V was used to analyse the extent to which social welfare policies, in particularly the Child Support Grant, has an impact on people living in households with or without children in South Africa. In this scenario, three indices of the FGT theoretical model of poverty quantification were considered: poverty rate (P0), poverty gap (P1) and poverty severity (P2). In addition, social welfare inequality is measured using the Gini co-efficient (See Annexure 5). Analysis of policy Scenario V and the quantification of poverty/inequality profiles are presented below.

Syntax used for Scenario V

Analysis of data was made using computer-based statistical software called STATA. In order to arrive at conclusions, the degree of correlation between information was analysed. The next box presents a description of STATA syntax used for the analysis of Scenario V.

Box 7: 5 STATA syntax used for the simulation of Scenario V

```
log using scenario-5
set memory 500m
adopath+ "C:\SAMOD\TOOLS\Stata tools"
insheet using "C:\SAMOD\Output\sa_2008&s5output_ext_std_sa.txt"
n_ben co_bch, label ( "CSG" ) takeup
total_exp co_bch, label ( "CSG" )
bys cohhid: egen hh_inc07 = sum(std_dispy)
bys cohhid: gen nHHmem = _N
gen pcap_inc07= hh_inc07/nHHmem
replace pcap_inc07 = 0.1 if pcap_inc07 <=0
gen n_ch_in_hh=0
forvalues n=1(1)25{
bys cohhid: replace n_ch_in_hh=n_ch_in_hh+1 if codag[`n']<18
}
gen anydepch=0
replace anydepch=1 if n_ch_in_hh>0

*POVDECO

*FOR TOTAL POPULATION

povdeco pcap_inc07, pl(450)
preserve
keep if anydepch==1
```

```
*FOR people in HHOLDS WITH CHILDREN

povdeco pcap_inc07, pl(450)
povdeco pcap_inc07, pl(450) by(codrc)
povdeco pcap_inc07, pl(450) by(codgn)
povdeco pcap_inc07, pl(450) by(codur)
povdeco pcap_inc07, pl(450) by(codrgn1)
restore
preserve
keep if anydepch==0

*FOR people in HHOLDS WITHOUT CHILDREN

povdeco pcap_inc07, pl(450)
povdeco pcap_inc07, pl(450) by(codrc)
povdeco pcap_inc07, pl(450) by(codgn)
povdeco pcap_inc07, pl(450) by(codur)
povdeco pcap_inc07, pl(450) by(codrgn1)
restore

*INEQDECO

*FOR TOTAL POPULATION

ineqdeco pcap_inc07
preserve
keep if anydepch==1

*FOR people in HHOLDS WITH CHILDREN

ineqdeco pcap_inc07
ineqdeco pcap_inc07, by(codrc)
ineqdeco pcap_inc07, by(codgn)
ineqdeco pcap_inc07, by(codur)
ineqdeco pcap_inc07, by(codrgn1)
restore
preserve
keep if anydepch==0

*FOR people in HHOLDS WITHOUT CHILDREN

ineqdeco pcap_inc07
ineqdeco pcap_inc07, by(codrc)
ineqdeco pcap_inc07, by(codgn)
ineqdeco pcap_inc07, by(codur)
ineqdeco pcap_inc07, by(codrgn1)
restore

log close
```

7.4.4. Poverty analysis for Scenario V

7.7.4.1. Analysis of poverty of people living in households with children for Scenario V

Analysis of data indicated that the overall observation of the poverty rate (P0) for people living in households with children as simulated in Scenario V was 50%. This means that nearly half of the people living in households with children were below the absolute poverty line of R450. This shows that the amount of money that is needed to uplift the poor from poverty, for each person, represents about 19% of the absolute poverty line, and the poverty gap (P1) index is 0.19. It implies that the poor in the population were close to the absolute poverty line of R450. A summary of the poverty analysis, according to race, gender, rural/urban environment and provincial categories, is presented in Table 7:14 below.

Poverty analysis by race shows that, for people living in households with children, there is a difference in the poverty profile amongst different race groups. For example, in people living in African households with children, the poverty rate (P0) was 57% and for people living in Coloured households with children, it was 25%. The analysis also shows a very low poverty rate of 6% for people living in Indian households with children and 2% for people living in White households with children.

Poverty analysis by gender: Statistically, variation was observed for people living in households with children at gender level. The analysis indicated the poverty rate (P0) was 51% for female-headed households with children and 49% for male-headed households with children.

Poverty analysis by rural/urban environment: Results showed that the poverty rate (P0), for people living in households with children in rural areas was 66%, whereas in urban households, it was 34%.

Poverty analysis at Provincial level: The highest poverty profile was observed for people living in households with children in Limpopo and the Eastern Cape. For example, the poverty rate for people living in households with children in Limpopo province was 63%. The poverty rate for people living in households with children (P0) was 62 and the poverty gap (P1) and poverty severity (P2) were 0.24 and 0.11 respectively. On the other hand, in the Eastern Cape, the poverty rate for people living in households with children was 62%, and the poverty gap (P1) and poverty severity (P2) were 24% and 12% respectively. Table 7:14 summarises the poverty rate (P0), the poverty gap (P1) and poverty severity (P2) in the different categories.

Table 7: 14 Simulated poverty for people living in households with children in S V

All observations			
All obs	a=0	a=1	a=1
	0.50925	0.19110	0.09432
Race			
Race	a=0	a=1	a=1
1. African	0.57810	0.21857	0.10824
2. Coloured	0.25507	0.08585	0.03996
3. Indian	0.06393	0.01020	0.00301
4. White	0.02016	0.00753	0.00385
5. Others	0.28846	0.12316	0.06605
Gender			
Gender	a=0	a=1	a=1
1. Female	0.51928	0.19444	0.09552
2. Male	0.49731	0.18712	0.09288
Rural/Urban Environment			
Environment	a=0	a=1	a=1
0.Rural	0.66952	0.25366	0.12397
1.Urban	0.34666	0.12763	0.06424
Province			
Province	a=0	a=1	a=1
1.Western Cape	0.19824	0.06278	0.02841
2. Eastern Cape	0.62807	0.24518	0.12277
3. Northern Cape	0.46726	0.16714	0.08130
4. Free State	0.59984	0.24953	0.13304
5. KwaZulu-Natal	0.55975	0.21037	0.10150
6. North West	0.50404	0.18543	0.09204
7. Gauteng	0.29991	0.11026	0.05490
8. Mpumalanga	0.53166	0.18334	0.08600
9. Limpopo	0.63947	0.24106	0.11925

Source: Computed from SAMOD version 1.1 (2009)

7.7.4.4. Analysis of inequality for people living in households with children

Data analysis for all observation of people living in households with children indicates a Gini co-efficient of 60%. An analysis of the inequality profile for people living in households with children according to race, gender, urban/rural environment, and provincial levels is presented below.

Inequality by race: The inequality rate at a racial level shows dissimilarities of the Gini co-efficient. Based upon the results of data analysis, the highest racial-level Gini co-efficient was observed for other racial groups of people living in households with children and the lowest Gini co-efficient was observed in White people living in households with children, that is, 0.53 and 0.40 respectively.

Inequality by gender: Data analysis showed that for welfare inequality, in the female and male categories, the Gini co-efficient was 0.59 and 0.60 respectively.

Inequality by rural/urban environment: Analysis showed welfare inequality in rural was 0.46 and urban areas 0.60.

Inequality by province: The highest inequality was observed for people living in households with children in the Free State and the Northern Cape, with a Gini co-efficient of 0.65 and 0.63 respectively, whereas households with children in Mpumalanga showed the lowest inequality profile, when compared with other provinces, with a Gini co-efficient of 0.53. Table 7:15 shows a summary of the simulated inequality profile of people living in households with children in Scenario V.

Table 7: 15 Simulated inequality profile of people living in households with children in SV

All observations	Gini
	0.60280
Race	
1. African	0.50273
2. Coloured	0.50456
3. Indian	0.45216
4. White	0.40423
5. Others	0.53400
Gender	
1. Female	0.59586
2. Male	0.60985
Rural/Urban Environment	
0.Rural	0.46079
1.Urban	0.60597
Province	
1.Western Cape	0.55281
2. Eastern Cape	0.56921
3. Northern Cape	0.63998
4. Free State	0.65106
5. KwaZulu-Natal	0.57338
6. North West	0.55995
7. Gauteng	0.61715
8. Mpumalanga	0.53683
9. Limpopo	0.57779

Source: Computed from SAMOD version 1.1 (2009)

7.6.4.6. Conclusion and major findings in Scenario V.

Simulation of an envisioned universal child support grant has been undertaken in Scenario V. It included a universal child support grant up to age 18 and R210 per month per child. A universal child support grant proved to have the potential to make a considerable impact on reducing the poverty rate, the poverty gap, poverty severity and the Gini co-efficient reading. The overall poverty rate for people living in households with children with an absolute poverty line of R450 per capita per month was 50%, after including the benefits of a universal child support grant of R210 per child. The average poverty gap index was 19%. This shows that the amount of money transfer that is needed to relieve poverty for each person represents about 19% of the absolute poverty line (R85.50). The poverty severity index (P2) was 9% (R40.50). This implies that the poor in the population were close to the absolute poverty line of R450 per capita per month. The Gini co-efficient for people living in households with children, after including the benefits of the Child Support Grant, was 0.60. In this simulation, there were ***17133756*** grant beneficiaries and the estimated total expenditure on the Child Support Grant was **R43,177,064,430**. (Annexure 5 shows the detailed result of the simulation).

Analysis of Scenario V, which simulated the application of a universal child support grant, indicated that the poverty rate (P0), the poverty gap (P1) and poverty severity (P2) showed a decrease in poverty as well as a decline of social welfare inequalities for people living in households with children. This is one of the indications that there is a need for more effort, dedication and commitment from the government of South Africa for the design and implementation of an appropriate strategy for a universal child support grant for children up to 18 years old.

Successful implementation of the social welfare policy of a universal child support grant and the reduction of poverty in South Africa also requires active involvement of the political authorities. According to Goodnow (cited in Anderson, 1997), and Barberton (2006), this is due to the fact that those in authority are in power and their consent and co-operation are very influential in the success of policy implementation.

Thus, it could be argued that the State's grant programme for poor children, in so far as it excludes large groups of children, is not reasonable in terms of section 27(2) of the South African 1996 Constitution and is, therefore, unconstitutional. The government is constitutionally obliged to provide social assistance to everyone who is unable to support himself or herself, and it should continue to progressively realise this right for all, beginning with children. In this regard, the conceptual and theoretical framework of Rawls' theory of justice builds logical explanations and key arguments for the implementation of social welfare policies. It also demonstrates the interconnectivity of social welfare policies and the rights of human beings, in general, and the child, in particular. Several international and national conventions and legal instruments deal with children's legal rights. The South African government has also signed the UN Convention on the Rights of the Child (1989) Article 27 and the African Charter on the Rights and Welfare of the Child (1990), Article 5 which points out children have the right to adequate standard of living and food for his/her development..

Several authors (Alston, 1998; Dawes, 2006; Prion, 2004) have claimed that a rights-based approach is a conceptual framework for the process of social development that is normatively based on international human rights standards and operationally directed to promoting and protecting human rights. Nyamu-Musembi and Cornwall (2004) and UNHCR (2002) noted that a rights-based approach seeks to analyse inequalities which lie at the heart of development problems and to redress discriminatory practices and unjust distributions of power that impede development progress. In this research, argued that Rawls' theory of justice is all about bringing about social and economic justice and claiming citizenship rights of marginalised groups of people in social development processes. Rawls' theory of justice helps to promote equality and social transformation, thus empowering, especially, the most vulnerable segments of the society such as children, women and disabled people. Furthermore, Rawls theory of justice, distributive justice and the concept of relative deprivation are linked with social welfare rights and a reduction of child poverty. The South African Constitution (1996) provides for socio-economic rights for the child and the right to have special protection for children.

The new Children's Act (2005) also creates the framework for the realisation of children's constitutional rights. The modelling of ScenarioV clearly indicated that there is a huge and dramatic reduction of child poverty when using the universal child support grant model. Hence, it is imperative that all relevant stakeholders must be able to design special instruments such as rules, regulations, procedures, functions and steps that would ensure the effective and efficient implementation of a universal child support grant in South Africa.

7.5. Comparative analysis of policy scenarios

In this section of the study, five scenarios were used to measure the impact of the simulated conditions, in terms of quantifying the poverty and inequality profiles for people living in households with children. The poverty impact of each simulation was assessed using the poverty rate (P0), the poverty gap index (P1) the poverty severity index (P2) and the Gini co-efficient.

Simulation results of SAMOD were used to identify the relationship between the social welfare policy of the Child Support Grant and child poverty in South Africa. A substantial difference in the impact of different policy scenarios was observed during the study. Table 7:16 includes the poverty rate (P0), the poverty gap (P1), poverty severity (P2) and the Gini co-efficient for people living in households with children, measured at various levels. As Table 7:16 illustrates, the magnitude of the poverty and inequality profile for people living in households with children varies with different policy scenarios. The results were calculated with the absolute poverty line of R450 per capita per month. A comparison of poverty and inequity profiles over different scenarios suggests a significant variance of poverty profiles for people living in households with children. The complete set of calculations for all the poverty and inequality profiles for people living in households with children are provided in Annexures 1-5. Table 7:16 below compares the poverty-reducing impact of the current social security system as measured with the different poverty lines included in the analysis.

Table 7: 16 Analysis of the poverty and inequality effect of scenarios

Unit of poverty measurements	Poverty and inequality profile for people living in households with children				
	S-I	S-II	S-III	S-IV	S-V
• The overall poverty rate (P0)	0.59278	0.53331	0.52293	0.51789	0.50925
• The poverty gap (P1)	0.31902	0.21848	0.20445	0.19416	0.19110
• The average poverty severity (P2)	0.21407	0.11660	0.10475	0.09603	0.09432
• The Gini co-efficient	0.67131	0.61536	0.60757	0.60223	0.60280

Source: Computed from SAMOD version 1.1 (2009)

Poverty rates**:** The proportion of a population that lives below the official poverty line is presented here below (Figure 7:1). Table 7:17 above shows the poverty rate (P0) for people living in households with children, in each scenario, under different policy systems in South Africa. The greatest effect on poverty rate (P0) reduction for people living in households with children was observed in Scenario V, that is, 50.9%, and the lowest effect was observed in Scenario I, that is, 59.28%.

Figure 7: 1 Comparative analysis of the poverty rate (P0) for all scenarios

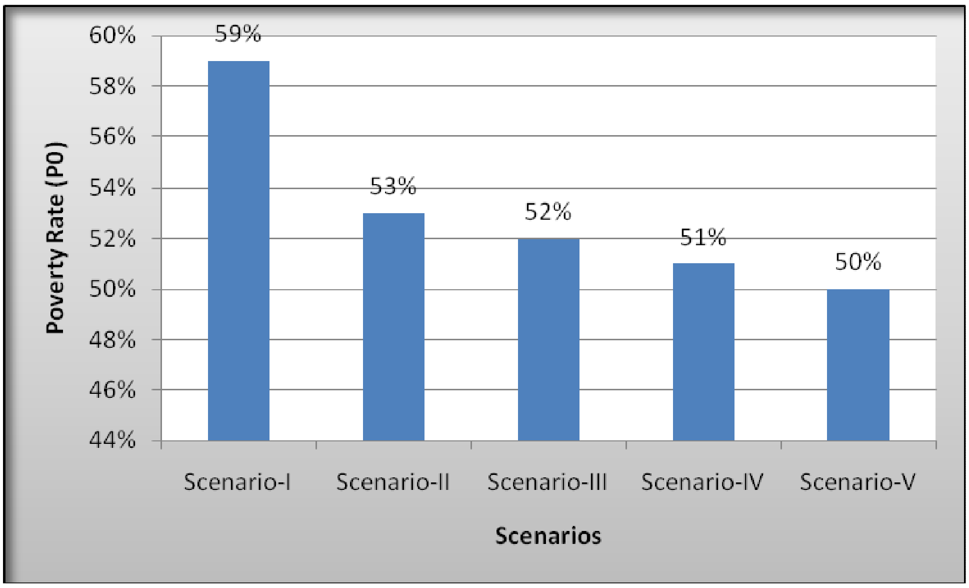

Table 7: 17 Comparative analysis of poverty rates (P0) for people living in households with children

Scenario type	Result of simulation: Poverty rates
Scenario I	59%
Scenario II	53%
Scenario III	52%
Scenario IV	51%
Scenario V	50%

Source: Computed from SAMOD version 1.1 (2009)

Poverty gap**:** describes the percentage of the population whose per capita income or expenditure is below the poverty line. This means the population cannot afford to buy a basic basket of goods. The poverty gap (P1) has been calculated by ranking individuals in a population in order of their command over resources, from 1 to *N*, where person 1 has the least resources and person *N* has the greatest. The greatest effect on the poverty gap index for people living in households with children was observed in Scenario V, that is, 9.4%. The average poverty gap index is 19.1%. This indicates that through the successful implementation of Scenario V, the amount of money that is needed to relieve poverty for each person represents about R40.5 of the absolute poverty line. The poverty gap measures the depth of poverty, based on the aggregate poverty deficit of the poor relative to the poverty line. The poverty gap index increases with the distance of the poor below the poverty line, and thus gives a good indication of the depth of poverty. A decline in the poverty gap index reflects an improvement in the current situation. Table 7:18 below shows that a comparative analysis of poverty gap (P1) for people living in households with children

Table 7: 18 Comparative analysis of poverty gap (P1) for people living in households with children

Scenario type	Poverty gap (P1)	Amount of money needed to relive at the absolute poverty line 450
Scenario I	0.59278	R139.00
Scenario II	0.53331	R94.50
Scenario III	0.52293	R90.00
Scenario IV	0.51789	R87.00
Scenario V	0.50925	R85.50

Source: Computed from SAMOD version 1.1 (2009)

Poverty severity/ squared poverty gap (P2): is the mean shortfall of the total population from the poverty line (counting the non-poor as having zero shortfall), expressed as a percentage of the poverty line. This measure reflects the depth of poverty as well as its incidence. The indicator is often described as measuring the per capita amount of resources needed to eliminate poverty, or reduce the poor's shortfall from the poverty line to zero, through perfectly targeted cash transfers. Table 7:19 below shows the simulated poverty severity (P2) of five scenario analyses for people living in households with children.

Table 7: 19 Comparative analysis of poverty severity (P2) for people living in households with children

Scenario type	Result of simulation: Poverty severity index (P2)
Scenario- I	0.21407
Scenario II	0.11660
Scenario III	0.10475
Scenario IV	0.09603
Scenario V	0.09432

Source: Computed from SAMOD version 1.1 (2009)

***Gini co-efficient*: **The Gini ratio (or index of income concentration) is a statistical measure of income equality, ranging from 0 to 1. A measure of 1 indicates perfect inequality; that is, one person has all the income and the rest have none. A measure of 0 indicates perfect equality (everyone having exactly the same income). A low Gini co-efficient indicates more equal income or wealth distribution, while a high Gini co-efficient indicates more unequal distribution. The Gini index is the Gini co-efficient expressed as a percentage. The analysis of the five simulated scenarios clearly indicated that the lowest Gini co-efficient identified in Scenario IV and V, expressed with a Gini index of 60%.

Table 7: 20 Comparative analysis of Gini co-efficient for people living in households with children

Scenario type	Result of simulation: Gini co-efficient
Scenario I	0.67131
Scenario II	0.61536
Scenario III	0.60757
Scenario IV	0.60223
Scenario V	0.60280

Source: Computed from SAMOD version 1.1 (2009)

7.6. Funding a Universal Child Support Grant

Financing social services is one of the rights of the child enshrined in the South African Constitution (1996). This means government is responsible to take measures and provide effect to the set of socioeconomic rights of children recognized in the Bill of Rights. Although much progress has been made towards the realization of the rights of children in South Africa, in term of accessing the Child Support Grant, still much remains to be done.

Purpose:

In the following section the author presents an overview of the fiscal policy and sources of government revenue; provide explanation on financing grants, and undertakes simulation modelling exercise for funding for a universal child support grant. The section concludes with a set of issues relating to funding of the universal child support grant in South Africa.

7.6.1. An overview of fiscal policy

There are different definitions and explanations given for government fiscal policy. For example, Smithies cited in Vaish (1980:132) defines a fiscal policy as "situation whereby governments uses its expenditure and revenue programs to produce desirable effects and avoid undesirable effects and the national income, production and employment". Cichon, (2004) also describes fiscal policy as the use of public finance or expenditure, taxes, borrowing and financial administration to further national economic objectives. Analysts such as Vaish, (1980) and Cichon, (2004) indicate that fiscal policy is the budgetary power house of any government and a popular instrument to influence the size and components of social protection measures. Gebre,

(1992) notes that deciding the type of revenue raising mechanism to finance social protection measures is part of the overall government fiscal policy planning and financing strategies.

7.6.2. Government revenue and financing grants

7.6.2.1. Government revenues

Dickert and Houser, (1998) note that both developed and developing countries undertakes two major categories of governments' tax collection system, i.e. direct and indirect taxes. According to them, the most direct taxes include personal income tax, corporate income tax and wealth or inheritance taxes. Whereas, the most common indirect taxes are Value-Added Tax (VAT), selected sales and excise taxes.

The World Bank (1991) defines VAT as an indirect tax, which is compulsory on goods and services at each stage of production, starting from raw materials to final product. In the context of South Africa, VAT is levied on the value additions at different stages of production at the rate of 14% (Value-Added Tax Act, 89 Of 1991). The essential characteristics of a VAT taxes are generally to transactions related to goods and services. According to the Tax Act, 89 Of 1991, VAT is a proportional to the price charged for the goods and services and charged at each stage of the production and distribution process. The taxable person (vendor) may deduct the tax paid during the preceding stages that is the burden of the tax is on the final consumer (Tax Act, 89 Of 1991). The following table shows that the recent revenue trends for the various tax types in South Africa in 2008/2009.

Table 7: 21 Revenue trends for the various Tax types in millions

Various Tax types	Actual amount of revenues collected in 2008/09	February 2009 Estimate
Personal income tax	195,146	207,450
Company income tax	165,539	160,000
Secondary Tax on companies	20,018	19,000
Value added tax	154,343	168,807
Fuel levy	24,884	30,090
Excise duty	20,185	22,600
Customs duty	22,751	24,635
Other	22,235	26,722
Total	**625,100**	**659,304**

Source: Adapted from the SARS, 2010

From the above table one can conclude that in 2008/09 the highest income tax is personal income (31.2%) followed by company income tax (26.5%) and indirect tax VAT (24.7%). Whereas, fuel levy, customs duty and excise duty are 3.9%, 3.6% and 3.2% respectively. This shows that there is a huge potential to finance social grants from income tax and value added tax.

7.6.2.2. Financing mechanisms of social grants

There are two ways of financing cash transfers/grants by the government. These include: (a) revenue obtained from direct tax (which is directly charged on personal or corporate income) and (b) indirect tax (such as VAT, the price charged for the goods and services at each stage of the production and distribution process). The following is a brief description of these two revenue streams.

Direct tax: literature in the field indicates that financing cash transfers using a direct tax method imposes the burden on the small proportion of the population. For example, in the context of South Africa, Rhee (2007:49) notes that "…financing BIG using direct income grant system, means only 13% of the total population in South Africa will be paying back in the form of increased income tax…". She further argues that such a financing system implies a larger net benefit, but it also brings a larger net tax burden than the case of indirect tax.

Indirect tax: an alternative way of financing cash transfer is through increasing indirect taxes. In this regard, Le Roux cited in Taylor Committee, (2002) undertook an analysis on how to finance the BIG through VAT. His model mainly focused on the VAT and excise taxes, creating a negative expenditure tax framework. Le Roux's model reflects on the net impact of the grant plus the taxes used to finance the grant. He argues that the impact of a grant plus a VAT increase has a more progressive net impact than when a grant is financed by an income tax increase. Rhee (2007:49) indicate that if the grant is financed by increasing indirect taxes, everyone pays some more tax than they did before, and the financial burden for financing cash transfer is therefore more evenly spread.

Le Roux, (2003) also indicates that VAT increases taken by themselves can be regressive. This means that even if every citizen and permanent resident receive the grant, only some portion of the population pays back as a result of increased tax. Le Roux, (2002, 2003) indicates that due to the economic stratifications within a society, i.e. rich, middle income and the poor, the consumption patterns of individuals vary accordingly. The so called the middle income and the poor people would contribute small amounts, whereas the rich will pay much larger amounts as a result of their consumption pattern. In this regard Rhee, (2007) shows empirically how to finance the BIG through increasing VAT. According to her, as a result of increase of VAT the large majority of the people (80%) of the population would benefit from the system and about 20% of the population pays back a greater amount than what they receive.

Le Roux (2003) calculates that a R100 grant paid to every legal resident in South Africa (man, woman and child), financed out of an increase in VAT of about 7%, and a proportionate increase (i.e. a 50% increase) in excise and fuel taxes, would put a burden on those with high consumptions. Le Roux cited in Taylor Committee, (2002: 44) clearly indicates that the rich would contribute much more than they would receive. According to him, funding grants through indirect taxes is meant to have net distributive effects, i.e. the poor (those at the bottom of the income range) would gain in net terms, the less poor (middle income range) would experience no net gains or losses and the rich (top income group) would carry the net burden. Arguably, therefore increasing the VAT % will burden the rich and appears to be the best strategy to transfer money from the rich to the poor with the objective to bring about social development. This means government's role would be by and large the facilitation of the grant administration processes, without any expenditure accruing to government.

7.6.2.3. Summary of arguments for BIG

The design and implementation of Basic Income Grant (BIG) in South Africa has captured the attention of politicians, academicians, researchers, civil societies and became an interesting subject of study in the past few years.

Considering some of the limitations of the implementation modalities of social welfare policies in South Africa, the Taylor Committee (2002) undertook an extensive and long consultative process at various levels. These included workshops, seminars and conferences with different role players such as civil societies, government representatives and as the basis for policy reform. The Taylor Committee also considered a range of issues arising from the 1996 South African

Constitution that focused on the socio economic rights of the citizens. Moreover, the Taylor Committee has taken further steps and proposed strategy of the implementation of the social welfare policies in South Africa. All the economists in the Committee agreed that

> *Taxes on goods and services progressively reduce the net benefit to the lower and middle-income groups, reducing the cost of the grant while shifting some of the financing burden away from higher income taxpayers. The strategy targets the very poorest at the expense of the lower middle-income groups. This problem can be addressed by constructing a tiered VAT structure that places a greater emphasis on luxury goods. Taxes on income and corporate profits focus the greatest burden on the highest income groups, and create a more uniform distribution of benefits across the lower and lower middle-income groups. Combination strategies allow policy-makers to more flexibly adjust the net cost of the grant, while balancing tax burdens to minimise the economic costs of higher taxation.* Taylor Committee, (2002: 42)

Rhee, (2007) reviewed South African literature (e.g. Le Roux, 2001; 2002; 2003; Samson et al., 2002; 2003) and identified two broad categories of arguments. According to Rhee, some argued that BIG in South Africa lead to increased earnings and income, thereby decreasing poverty and inequity; stimulate economic growth as a result of a demand for labour intensive local goods and services; shifts the weight of social responsibilities to the wealthiest group of people in the society; support children and women by reducing poverty and destitution; and increases female labour participation in the society. On the other hand, some argued that the implementation of BIG in South Africa would foster dependency on benefits; have a crowding out effect on government spending; makes social assistance a substitute for work; show that government does not have the capacity to deliver the proposed plan; and questions about its financial affordability for a long period of time. However, Rhee (2007) in her empirical study showed that the implementation of BIG in South Africa is feasible and only requires 2% of the total GDP.

7.6.3. Simulation modeling of VAT

As indicated earlier, Le Roux (2002; 2003) argues that if the grant is financed by indirect tax, i.e. VAT, everyone pays a certain amount of tax, however the rich carries the greater financial burden for social responsibilities. The author supports Le Roux's assertion, i.e. financing the universal child support grant can be done by increasing the rate of VAT. In addition, the author will demonstrate that VAT can be used to also finance the universal child support grant. To this end, the author will make use of a microsimulation model.

The purpose of simulation modeling of VAT was to analyse the amount of money needed to implement a Universal Child Support Grant in South Africa. By increasing the current amount of VAT from 14% to various VAT levels and subsequently measuring the resulting increase of finance the simulation modeling exercise quantified the amount of money required.

Syntax used

An analysis of SAMOD outputs has been carried out using the built-in and interlinked tools of STATA. In general, the STATA tools helped to undertake the calculation of the number of beneficiaries, total annual expenditure and detailed analysis of VAT. Box-6: below indicates the types of syntax that have been used in the analysis process.

Box 7: 6 STATA syntax used in the analysis of various VAT Scenario

```
log using scenario- 6-11
set memory 500m
adopath+ "C:\SAMOD\TOOLS\Stata tools"
insheet using "C:\SAMOD\Output\sa_2008&s5output_ext_std_sa.txt"
n_ben co_bch, label ( "CSG" ) takeup
total_exp co_bch, label ( "CSG" )
n_ben co_vat, label ( "VAT" )
total_exp co_vat, label ( "VAT" )
log close
```

Literature in the field indicates that those who consume more would pay more towards the cost. The modeling exercise of SAMOD indicates that under the 2007 dataset and 2008 policy system of the government the 14% VAT provides revenue of **R61, 722,081,037**. An increase of VAT by 2.5% would bring an additional income of **R24, 124,956,717**. This is the additional VAT that will be required to move from a means tested child grant to a universal child support grant given the modeling approach adopted for the SAMOD, where no assumptions are made with regard to the expenditure of the grant. If one assumes that most new recipients of the grant will spend it, the increase in VAT required would be significantly less, because part of the grant will be recuperated from these expenditures.

Simulation results

With an attempt to understand the financial effect of increasing VAT at different rates, simulation modelling has been made using SAMOD, at the rate of 14%, 15%, 16%, 16.5%, 17%, 18%, 19% and 22%. Accordingly, the simulation modelling exercise proved that government indirect tax revenue increased by R157,391,306,644; R167,167,151,662; R176,774,463,128; R181,516,263,361; R186,217,532,254; R195,500,581,558; R204,627,577,893; and R231,110,882,509 respectively. By only raising the VAT amount by 2.5% government's revenue increased to R24, 124,956,717. Ultimately, this amount is needed to implement the universal child support grant. This raises a multitude of questions about the impact of the universal child support grant components in the implementation of the grant especially for households living with children.

In general, all these imply that universal child support grant can be implemented in South Africa and has the potential in terms of addressing the child poverty and inequality rate in South Africa. The estimated overall cost of implementing the Child Support Grant under the five different scenarios is presented in the table below. The table also shows the total cost of each scenario divided by the total number of children, which gives the estimated annual cost of the Child Support Grant per child in the country. Table 7:22 below presents a comparison of simulated government revenue.

Table 7: 22 Simulation modelling of various VAT rates in SAMOD

Various types of VAT rate proposal	Scenarios	SAMOD Simulation result	SAMOD Simulated and adjusted VAT result
• Estimated amount of government revenue @ VAT 14%	S5	R61,722,081,037	R157,391,306,644
• Estimated amount of government revenue @ VAT 15%	S6	R65, 555,745,750	R167,167,151,662
• Estimated amount of government revenue @VAT 16%.	S8	R69, 323,318,874	R176,774,463,128
• Estimated amount of government revenue @VAT 16.5%	S12	R71, 182,848,377	R181,516,263,361
• Estimated amount of government revenue @VAT 17%	S9	R73, 026,483,237	R186,217,532,254
• Estimated amount of government revenue @ VAT 18%	S10	R76, 666,894,729	R195,500,581,558
• Estimated amount of government revenue @VAT 19%	S11	R80, 246,108,978	R204,627,577,893
• Estimated amount of government revenue @VAT 22%	S7	R90, 631,718,631	R231,110,882,509

Source: Computed from SAMOD version 1.1 (2009)

Note: As compared with the actual indirect tax revenue recorded in 2008/2009, the simulated indirect tax is found to be much lower. This is partly due to the fact that SAMOD includes only data collected from households. SAMOD does not include indirect tax revenue collected by the government from other sources, overseas visitors and final purchases by commercial sectors. However, in other studies, e.g. Woolard, (2005:47) indirect tax estimates based on household expenditure came to about 70% of the actual tax income, whereas in the case of SAMOD it amounts to less than 40%. The author used an adjustment ratio based on the 2008/2009 indirect tax revenue collected. Calculation was made based on the following formula. Adjusted result VAT revenue= VAT, Simulation modelling result*2.55 ratio. This gave an adjusted result to match between the simulated and recorded indirect tax revenue.

7.6.4. Estimating the extent of the funding gap

Estimating the extent of funding gap entailed calculating the difference between the costing outcomes in Scenario V and the amount of current budgets allocated for Child Support Grant in South Africa. The calculation itself is simple. Table 7-23 below provides information on the extent of the funding gap under the 2007 population baseline and 2008 government policy rules.

The most significant challenge for the implementation of the universal child support grant identified in this research is the fact that little amount of money allocated by the government. In order to implement Scenario-V (Universal Child Support Grant), the analysis indicates that about **R43, 177,064,430** is required. In the 2008, government policy rules the actual amount of government expenditure is R **R19, 176,000,000**. The funding gap is **R24, 001,064,430**. However, it can be argued that the proposed amount of money can be obtained from increasing the VAT and without bringing additional financial burden on the government side.

Table 7: 23 Allocation of budget under 2008 policy scenario and estimated for Scenario-V.

Cost estimation/assessment area	Amount in Rand
Estimated amount of budget, under scenario-V, i.e. through Universalizing the Child Support Grant and extending it up to the age of 18 years old and policy rule that provides R210 per child per month	R43,177,064,430
Actual amount of budget, under 2008 government policy rules, that is, the Child Support Grant given up to the age of 13 years and the policy rule that provides R210 per child per month	R19,176,000,000
Funding Gap	**R 24,001,064,430**

Source: Computed from SAMOD version 1.1 (2009)

The above table illustrates that estimated amount of budget from VAT 14% is insufficient in its budgets to meet the anticipated obligations under the Scenario V. This means there is a funding gap between current government revenue obtained from VAT 14% and estimated amount of budget expenditure in Scenario V. According to the above table an additional **R24, 001,064,430** is needed to deliver the services required by Scenario V.

7.6.5. Filling the funding gap

The South African government needs to look at the design and implementation modality of the universal child support grant with a view to improving the situation of children in the country and to address the specific needs. In the context of South Africa, the study argues that the universal child support grant can be financed by increasing the existing VAT (14%) to VAT (16.5%). Such an adjustment will produce an additional Rand amounting to **24,124,956,717**. An increase by 2.5% would simply fill the funding gaps. This approach in the context of South Africa is financially affordable as well as feasible. Here the role of the government is that of an intermediary and the process will not bring any additional cost to the government.

7.6.6. Key issues

The analysis of VAT simulation modeling exercise identified that a range of issues related to government revenue, financing mechanism of cash transfers, implementation of the Universal Child Support Grant in South Africa, funding required and filling the funding gaps. Throughout the process, few keys issues were observed and a summary presented as follows:

- Simulation modeling proved that universal child support grant in South Africa is helpful in poverty and inequality reduction for households living with children and feasible as well as affordable.

- Implementation of the universal child support grant in South Africa, every child gets the grant, but some portions of the population (the richest people) pays more or carries the burden.

- Increasing indirect tax brings net additional tax burden on the richest part of the society and benefits to the poor. Hence, it is one of the income distribution mechanism to the poor in general and the children in particular.

- The role of the government is only to play an intermediary role and does not bear any financial burden of the cash transfer.

- The implementation of the universal child support grant has the potential to bring about significant improvement in the lives of children in particular and family and the community in South Africa in general.

- The implementation of VAT based universal child support grant is good mechanism to foster social solidarity.

- Considering the context of South Africa, the study anticipates there will be responses to an increase in VAT, mainly from labour union and business community. However, participation and involvement of all people is deemed suitable, in relation to generate common understanding about financing grants through increasing VAT.

7.7. Conclusion

The primary objective of this chapter was to investigate the relationship between the social welfare policies of the Child Support Grant and child poverty in South Africa, using five policy scenarios.

The general framework of the research and SAMOD enabled the study to model the five policy scenarios. The poverty impact of each of these scenarios has been modelled using the poverty rate (P0), the poverty gap (P1) and poverty severity (P2) and the Gini co-efficient. Based on the simulation result from different scenarios, an increase in the receipt of a child support grant is associated with reducing the child poverty rate, the poverty gap, poverty severity and the Gini co-efficient for people living in households with children. The following results were obtained as a result of the modelling:

Scenario I: Analysis indicated that with an absolute poverty line of R450 per capita per month the poverty rate (P0) for people living in households with children was 59.2% after excluding the benefits of the Child Support Grant. With an absolute poverty line of R450 per capita per month, the result produced from the simulated model was a poverty gap index of 31.9% (R143.60) after excluding the benefits of the Child Support Grant for people living in households with children. The average poverty severity index (P2), with an absolute poverty line of R450 per capita per month, was simulated in the model and the result indicated 21.4% (R96.33), after excluding the benefits of the Child Support Grant for people living in households with children. The simulated model and the results showed a Gini co-efficient of 0.67 for people living in households with children. In this scenario, the total number of Child Support Grant recipients equalled 0 and total estimated per annum expenditure on Child Support Grant per annum was also R0.

Scenario II shows the overall poverty rate for people living in households with children, with an absolute poverty line of R450 per capita per month, was 53.3%, after including the benefits of the Child Support Grant. The poverty gap index (P1) for people living in households with children with an absolute poverty line of R450 per capita per month was 0.21848 (R98.3), after including the benefits of the Child Support Grant. The average poverty severity index with an absolute poverty line of R450 per capita per month was 0.11660 (R52.5), after including the benefits of the Child Support Grant for people living in households with children. The Gini co-efficient, after including the benefits of the Child Support Grant, was 0.61 for people living in households with children. The estimated total number of beneficiaries was **7664483**, with an associated expenditure on the Child Support Grant of **R26, 140,264,608**.

Scenario III illustrates that the overall poverty rate, with an absolute poverty line of R450 per capita per month, was 52.2% for people living in households with children after including the benefits of the Child Support Grant. The poverty gap, with an absolute poverty line of R450 per capita per month, was 0.20445 (R92) for people living in households with children, after including the benefits of the Child Support Grant. The average poverty severity (P2), with an absolute poverty line of R450 per capita per month, was 0.10475 (R47.1) after including the benefits of the Child Support Grant. The Gini co-efficient, after including the benefits of the Child Support Grant, was 0.61 for people living in households with children. In this scenario, the estimated number of beneficiaries was ***11934964*** and the total expenditure per annum on the Child Support Grant was ***R30, 076,110,305***.

Scenario IV shows that the overall poverty rate (P0), with an absolute poverty line of R450 per capita per month, was 51.7% for people living in households with children after including the benefits of the Child Support Grant. The poverty gap (P1), with an absolute poverty line of

R450 per capita per month was 0.19416 (R87.4) for people living in households with children, after including the benefits of the Child Support Grant. The average poverty severity index (P2), with an absolute poverty line of R450 per capita per month, was 0.09603 or 9.6 % (R43.2) for people living in households with children, after including the benefits of the Child Support Grant. The Gini co-efficient, after including the benefits of the Child Support Grant was 0.60223 for people living in households with children. The total number of Child Support Grant recipients was ***12,928,605*** and the total per annum expenditure on the Child Support Grant was ***R32, 580,085,021***.

Scenario V shows that the overall poverty rate (P0), with an absolute poverty line of R450 per capita per month, was 50.9% for people living in households with children after including the benefits of the Child Support Grant. The poverty gap (P1), with an absolute poverty line of R450 per capita per month was 0.19110 (R85.9), after including the benefits of the Child Support Grant. The average poverty severity (P2), with an absolute poverty line of R450 per capita per month, was 0.09432 or 9.4% (R43.4) for people living in households with children, after including the benefits of the Child Support Grant. The Gini co-efficient, after including the benefits of the Child Support Grant, was 0.60 for people living in households with children. The total number of Child Support Grant recipients was ***17,133,756*** and total per annum expenditure on the Child Support Grant was ***R43, 177,064,430***.

The modelling exercise also helped in investigating the possibility of financing a universal child support grant through increasing the current VAT by 2.5%.

The final chapter of the thesis will present the specific findings of the study and specific conclusions will be drawn and recommendations made. The hypothesis developed in Chapter 1 helped the study to answer the general research question and examine, empirically, the relationships between social welfare policies pertaining to the Child Support Grant and child poverty in South Africa. Within the framework of the investigation, recommendations for intervention will be made and future research possibilities will be suggested.

CHAPTER-8: CONCLUSION, RECOMMENDATIONS & FURTHER RESEARCH

8.1. Introduction

This study was begun with the broad aim of analysing the extent to which social welfare policies, and particularly the Child Support Grant, deal with poverty and inequalities of people living in households with children in South Africa. Accordingly, a microsimulation model for South Africa (SAMOD) was used for assessing the impact of the Child Support Grant in terms of responding to poverty and inequalities, as well as to gauge the potential impact of possible policy reforms and poverty interventions. As has been discussed in the previous chapters, five scenarios of possible Child Support Grant reform were identified and the study modelled the poverty and inequality impact on people living in households with children. The poverty and inequality profiles for people living in households with children were measured using the Foster-Greer-Thorbecke (FGT) indices of poverty measurement for poverty rate (P0), poverty gap (P1), poverty severity (P2) and Gini co-efficient. Computer-based statistical software, called STATA, was also used for data entry and manipulation, to define and label variables; to recode and compute variables; to undertake basic statistical analysis; to make estimates; and for hypothesis testing. The results of the study clearly indicated that there is a positive correlation between cash transfer (the Child Support Grant) and child poverty reduction. An increase in the Child Support Grant amount and number of child beneficiaries in modelling produced a positive effect in addressing increasing child poverty and vulnerability.

The sections below provide a summary of the modelling results of social welfare policies pertaining to the Child Support Grant, in terms of responding to child poverty in South Africa, using microsimulations.

First, the result of modelling, using the poverty and inequality profile of people living in households with or without children in the absence of a Child Support Grant, was presented.

Second, the modelling result of the poverty and inequality profile of people living in households with children under the 2007 population baseline and 2008 government policy rules, that is, the Child Support Grant given up to the age of 13 years and application of the policy rule that provides R210 per child per month, was provided.

Third, the result and effect of the Child Support Grant on people living in households with children using government 2008 policy rules on the 2007 population baseline, that is, the eligibility of the beneficiaries up to 15 years old who can access the grant and the policy rule that provides R210 per child per month, were presented.

Fourth, the result of changes in the poverty and inequalities profile of people living in households with children under the 2007 population baseline and 2008 government policy rules were analysed, the eligibility for Child Support Grant is given up to the age of 18 years old on means test criteria and the policy rule provides R210 per child per month provided.

Fifth, the modelling result of the Child Support Grant through rolling-out of a universalising child support grant up to the age of 18 years old and a policy rule that provides R210 per child per month was presented.

This chapter provides general conclusions and recommendations related to the research topic. Moreover, some lessons learnt from the experiences in South Africa as well as guidelines for further research activities in terms of this broad topic will be presented below.

8.2. Conclusion

The ratification of the Convention on the Rights of the Child by almost all countries in the world in the early 1990s put the promotion of children's rights, expansion of social welfare policies and care of children higher up on the agenda of the poverty debate (Lim, 2006: September, 2006; Sloth-Nielsen, 2004). Since the advent of democracy in South Africa, the SA government has also taken a leading position by introducing significant social welfare policy changes. In this regard, the adoption and implementation of the *White Paper for Social Welfare* as national policy was one of the bold steps taken in terms of extensive expansion of access to social security benefits and creative approaches to pressing social needs (Patel, 2005). Major objectives of social welfare policies in South Africa are alleviating poverty and enabling the previously disadvantaged communities to have access to basic social services. So far, many social welfare policies have been developed and the overall result of these is very positive.

The focus of this research was to investigate the correlation between social welfare policies and child poverty in South Africa using the SAMOD on the Child Support Grant, to arrive at an understanding of how these relationships function. The research was based upon the hypothesis that ***"The existing social welfare policies of the Child Support Grant are not optimal in responding to child poverty in South Africa"***. Within the limited scope of this study, the research was successful in pointing to the importance and positive impact of the social welfare policies of the Child Support Grant on child poverty in South Africa. Investigations conducted in the course of this research also clearly indicated that the social welfare policies of the Child Support Grant on child poverty in South Africa provide strong support in terms of responding to the poverty and inequality of people living in households with children. The different policy scenarios simulated also appear to indicate that current government policy has a positive effect in terms of child poverty reduction. However, government is not adequately responding to the poverty and inequality profile of people living in households with children in South Africa. A summary of the major findings of the research is presented below:

Scenario I

The purpose of the modelling of Scenario I was to analyse changes in poverty and inequality rates of people living in households with or without children in the absence of a Child Support Grant in South Africa. In general, the policy scenario helped to quantify the outcomes of the absence of a Child Support Grant for the child and primary caregiver by removing the monetary amount of all child support grants from the total household income and, subsequently, measuring the resulting poverty in the absence of the Child Support Grant. By doing so, it gave an overview of the lessons learnt from this scenario and the impact of an expansion of a key government poverty alleviation programme. Using the absolute poverty line of R450 per capita per month, Scenario I quantified the poverty and inequality profiles of people living in households with or without children.

The results of the simulations are summarised in statistics that are listed in Annexure 1. These statistics display the income components of the average individual within each decile. Poverty is measured by a poverty rate (P0), a poverty gap index (P1), and poverty severity (P2) that in combination display the percentage of people with an equivalised disposable income below the poverty line of 60% of the median. Inequality is measured by the Gini co-efficient. The result of simulation clearly indicated that the overall poverty rate (P0), with an absolute poverty line of R450 for people living in households with children, was 59.2%, after excluding the benefits of the Child Support Grant. In assessing the poverty gap index (P1), with an absolute poverty line of R450 per capita per month, the simulated model and the result produced 31.9% (R143.60), after excluding the benefits of the Child Support Grant. In order to assess the level of the poverty severity index (P2) with an absolute poverty line of R450 per capita per month, the model was simulated and the result indicated 21.4% (R96.33), after excluding the benefits of the Child Support Grant. With the objective of measuring the level of the Gini co-efficient, after excluding the benefits of the Child Support Grant, the result gained from the simulated model showed 0.67. Annexure 1 shows the detailed result of the simulation. The South African national Child Support Grant expenditure under Scenario I was estimated to have reached R0 in total per annum expenditure and the case of no recipients was also modelled.

It can be argued that the South African Constitution (1996) states that government is responsible for taking measures and providing effect to the set of socio-economic rights of children recognised in the Bill of Rights. Chapter 2, section 28(1)(c) of the constitution provides children the right to basic nutrition, shelter, basic health-care services and social services, with the aim of ensuring that vulnerable children receive the basic necessities. In addition, in section 28 of the Bill of Rights, the State has a strong obligation to implement the qualified rights of section 27. This means that government must cater for all children in need by providing programmes and ensuring the roll-out of services as quickly as administratively possible, not subject to any limitations (South African Constitution , 1996). In light of the status of South Africa's children, there is optisism that the new Children's Act will facilitate a process towards the realisation of children's rights in general and especially the rights of those children with added vulnerabilities such as poverty, abuse, exploitation and ill-health. The purpose of the Act is to give effect to the rights of children as contained in section 28 of the Constitution as well as other international instruments ratified by South Africa. As a result of this research, it is argued that institutional arrangements (new regulations, policies, protocols, procedures, etc.), adequate resources/cash transfers, political championship, monitoring and evaluation are very decisive factors for child poverty reduction in South Africa.

Scenario II

The microsimulation modelling of Scenario II was undertaken with the assumption of full take-up under the 2007 population baseline and 2008 government policy, that is, where the Child Support Grant is given to children up to the age of 13 years old and a 2008 policy rule that provides R210 per child per month is applied. The implementation of the policy system requires fulfilment by the primary caregiver of the child or children of the following criteria: (a) the child and care-giver must be South African citizens or permanent residents; (b) the child and the caregiver should be resident in South Africa at the time of application; (c) the applicant must be the primary care-giver of the child/children concerned; (d) the applicant and spouse must meet the requirements of the means test; (f) the applicant cannot apply for more than six non-biological children; and (g) the child cannot be cared for in a state institution. In addition, the caregiver should pass the means test if he/she is single, the income should not be above R9,600 per annum; and, if married, the income should not be above R13,200 per annum. A grant is payable by cash at a specific pay point on a particular day, by electronic deposit into a bank account or a post bank account or to an institution (e.g., a. children's home).

In this scenario, the impact of a poverty and inequality profile for people living in households with or without children using the poverty rate (P0), poverty gap index (P1), poverty severity index (P2), and Gini co-efficient was modelled. In this simulation, there were ***7664483*** grant beneficiaries. The overall poverty rate (P0) for people living in households with children, with an absolute poverty line of R450 per capita per month, was 53.3%, after including the benefits of the Child Support Grant. The poverty gap index (P1), with an absolute poverty line of R450 per capita per month, was 21.8% (R98.3), after including the benefits of the Child Support Grant. The poverty severity index (P2), with an absolute poverty line of R450 per capita per month, was 11.6% (R52.5) after including the benefits of the Child Support Grant. The Gini co-efficient, after including the benefits of the Child Support Grant, was 0.61. The estimated total expenditure on the Child Support Grant was ***R26, 140,264,608***. Annexure 2 shows the detailed result of the simulation.

In Scenario II, it can be argued that even though there was a reduction of the poverty and inequality profile of for people living in households with children, the degree of reduction was very low. In general, a lack of optimal/suitable institutional arrangements and implementation modalities was evident. This clearly indicates that there is a need to move out of the current strategy of implementation to a better strategy.

Scenario III

SAMOD simulated a full take-up of the Child Support Grant up to the age of 15 and R210 per month per child for this scenario. Child support grant simulations were estimated with a means-tested approach of the government social policy implementation model in South Africa. Annexure 3 illustrates the poverty and inequality impact on people living in households with children, using the poverty rate (P0), poverty gap index (P1), poverty severity index (P2), and Gini co-efficient. Full take-up of the Child Support Grant among children aged 15 was observed to have had a considerable impact on reducing the poverty and inequality impact on people living in households with children. Full take-up of the Child Support Grant among children aged 0-15 had a noticeable impact, generally, on the child poverty rate, the poverty gap, the poverty severity and the Gini co-efficient.

The analysis showed that the extension of the Child Support Grant to age 15 and R210 per month per child decreased the poverty and inequality impact on people living in households with children. Annexure 3 shows the simulation result of Scenario III and illustrates the overall poverty rate, with an absolute poverty line of R450 per capita per month, was 52.2% for people living in households with children, after including the benefits of the Child Support Grant. The poverty gap (P1), with an absolute poverty line of R450 per capita per month, was 20.4% (R92) for people living in households with children, after including the benefits of the Child Support Grant. The average poverty severity (P2), with an absolute poverty line of R450 per capita per month, was 10.5% (R47.1) after including the benefits of the Child Support Grant. The Gini co-efficient, after including the benefits of the Child Support Grant, was 0.61 for people living in households with children. In this scenario, the estimated number of beneficiaries was ***11,934,964*** and the total expenditure per annum on child support grants was ***R30, 076,110,305***.

The government's intention behind implementing a means test modal is to channel limited resources to those most in need. However, Hall (2007) clearly indicated that the administrative costs of implementing the means test are very high and noted the degree to which the current means test modality excludes those who are in need and eligible for the grant, while including those who are not eligible. For example, the load of providing documentary proof to ensure that the Child Support Grant is correctly targeted may mean that eligible caregivers are excluded because of difficulties in obtaining the required documentation. In addition, the modelling process demonstrated that the rate of poverty reduction is still low. It seems there is a lack of good institutional arrangements and implementation modalities.

Scenario IV

The purpose of the modelling of Scenario IV was to assess changes in poverty and inequality rates of people living in households with children, under the 2007 population baseline and 2008 government policy rules, but with the Child Support Grant given up to the age of 18 years and the policy rule that provides R210 per child per month. The policy scenario helped to quantify the outcomes of a means test criteria and subsequently measure the resulting poverty/inequality of people living in households with children.

Extending the Child Support Grant to children up to age 18, with R210, has a substantial effect, reducing the poverty and inequality profile of people living in households with children. Results of the study show the overall poverty rate (P0), with an absolute poverty line of R450 per capita per month, was 51.7% for people living in households with children, after including the Child Support Grant. The poverty gap (P1), with an absolute poverty line of R450 per capita per month, was 19.4% (R87.4) for people living in households with children, after including the benefits of the Child Support Grant. The average poverty severity index (P2), with an absolute poverty line of R450 per capita per month, was 9.6% (R43.2) for people living in households with children, after including the benefits of the Child Support Grant. The Gini co-efficient, after including the benefits of the Child Support Grant, as 0.60223 for people living in households with children. The total number of child support grant recipients was ***12,928,605*** and total per annum expenditure on the Child Support Grant was ***R32, 580,085,021***.

Even though the Child Support Grant has had a positive impact on many families in terms of child poverty reduction and bringing about social development, many poor children are unable to access the Child Support Grant due to the age limit. The means test implementation modality of the social welfare policies of the Child Support Grant is not properly addressing child poverty in South Africa. Hence, it is recommended that, in order for the South African government to fulfil its international and constitutional obligations to children, as well as to reduce child poverty at maximum level, the government must extend the Child Support Grant to all children under the age of 18 and eliminate the means test.

Scenario V

The main purpose of the modelling of Scenario V was to explore the result of changes in the poverty and inequalities profile of people living in households with children, through universalising the child support grant up to the age of 18 years old and the policy rule providing R210 per child per month. The policy scenario helped to quantify the outcome when the Child Support Grant is given after a means test and, subsequently, to measure the resulting poverty/inequality rates for people living in households with children.

The poverty and inequality profile of people living in households with children was modelled with a view to identifying the impact of extending the Child Support Grant to children up to 18 years of age, using the poverty rate (P0), the poverty gap index (P1), poverty severity (P2) and the Gini co-efficient. In this simulation, the overall poverty rate (P0), with an absolute poverty line of R450 per capita per month, for people living in households with children, after including the benefits of the Child Support Grant, was 50.9%. The poverty gap (P1), with an absolute poverty line of R450 per capita per month, was 19.1% (R85.9), after including the benefits of the Child Support Grant. The average poverty severity (P2), with an absolute poverty line of R450 per capita per month, was 9.4% (R42.4) for people living in households with children, after including the benefits of the Child Support Grant. The Gini co-efficient, after including the benefits of the Child Support Grant was 0.60 for people living in households with children. The total number of Child Support Grant recipients was ***17133756*** and the total per annum expenditure on the Child Support Grant was ***R43, 177,064,430***.

International and local evidence shows that a universal child support grant, increasing family incomes through cash transfers or subsidies, reduces poverty levels in households and enhances the child's development, educational achievement and health status (Barrientos & Dejong, 2004; Schubert, 2005). Simulation of Scenario V also supported these international findings in terms of its impact on income poverty. The results of this study clearly indicate that universalising the social welfare policies of the Child Support Grant is optimal in responding to child poverty in South Africa. A simulated universal child support grant shows a positive impact on many families. This is an indication that huge potential exists for the Child Support Grant to reduce child poverty. It demonstrates a need to bring about effective institutional arrangements and good implementation modalities of the universal child support grant.

South Africa is a signatory to international legal instruments such as the UN Convention on the Rights of the Child and the African Charter on the Rights and Welfare of the Child, which obligate all state nations to cater for the rights of the child. In addition, the South African Constitution obligates the government to implement the qualified rights of section 27, that is, basic nutrition, shelter, health-care services and social services, with the aim of ensuring that vulnerable children receive the basic necessities. Furthermore, the new Children's Act also creates the framework for the realisation of children's constitutional rights. The modelling of Scenario V also clearly demonstrated that there would be proportionally huge reduction in child poverty as a result implementing a universal child support grant model. Hence, it is imperative that all relevant stakeholders should be able to design special instruments such as rules, regulations, procedures, functions and steps that would ensure the effective and efficient implementation of a universal child support grant. However, it seems there is lack of political will for championship of such a grant on the part of the government.

8.2.1. Research findings

The research process has identified four interrelated gaps that hinder the successful implementation of the social welfare policies of the Child Support Grant to reduce the poverty and inequalities of people living in households with children in South Africa:

First**,** inadequate understanding of the constitutional rights of the child as indicated in the international and national legal instruments.

Second, there is failure to use, or a lack of understanding of, proven best-practice institutional arrangements and implementation modalities.

Third, a lack of political will exists for championship of a universal basic income grant.

Fourth**,** there is insufficient M&E, documentation and dissemination of best practices in the area of social welfare policies of the Child Support Grant. Each of the gaps is briefly described below:

8.2.1.1. Inadequate understanding of the constitutional rights of the child

The realisation of children's rights is provided in the international legal instruments such as the United Nations Convention for Rights of the Child (1989) and the African Charter on the Rights and Welfare of the Child (1990). The South African Constitution also obligates the government to be responsible for taking measures and giving effect to the set of socio-economic rights of children recognised in the Bill of Rights. Chapter 2, section 28(1)(c) of the Constitution provides children the right to basic nutrition, shelter, health-care services and social services, with the aim of ensuring that vulnerable children receive the basic necessities. In addition, in section 28 of the Bill of Rights, the State has a strong obligation to implement the qualified rights of section 27. This means that government must cater for all children in need by providing programmes and ensuring the roll-out of services as quickly as administratively possible, not subject to any limitations (South African Constitution , 1996). Up until the time of writing, most of the activities practiced in South Africa concerning child support, in fact, serve to marginalise the rights of the child and do not fully contribute to child poverty reduction approaches. Accordingly, past efforts have not been fully successful in achieving the intended goals of the social welfare policies of the Child Support Grant to reduce the poverty and inequality profile of people living in households with children in South Africa.

8.2.1.2. Failure to use, or lack of understanding of, proven best-practice institutional arrangements and implementation modalities

Baye et al. (2002) observed that institutions are governance structures which include a range of implementation models, formulas, policies, rules, regulations, procedures, guidelines and administrative steps imposed through formal arrangements that regulate the way social welfare policy implementing organisations operate. Furubotn and Richter (1998) also described the determination of pertinent institutional arrangements as very important instruments for the successful implementation of social welfare policy and reduction of poverty. Gates (1980) stressed that institutional rules and models are key elements in the implementation of social welfare policies through state and local government operations. According to him, the formulation of clear and concise implementation modalities depends on effective programming. Gates (1980) pointed out that the term *programming* includes the decision about the nature, size and optimal mix of programmes to be implemented. Programming provides policy makers with a tool for identifying the need for new implementation modalities and programmes; for assessing sources for programme duplication and overlap; and for identifying clusters of programmes whose activities require co-ordination.

As part of the implementation of the social welfare policies of the Child Support Grant in South Africa, since 1998, the government has practiced an implementation modality called the *means test*. As a result of the means test, and the fragmented and compartmentalised nature of planning and programming for social welfare policies of the Child Support Grant in South Africa, past efforts have not been very successful in terms of organising pertinent institutional arrangements and selecting the right implementation modalities to effectively reduce child poverty in South Africa. All these factors indicate that there is a need to move away from the existing ways of organising people, money, institutions, infrastructure and technical resources in silos and separate compartments. This clearly indicates another gap as millions of poor children are unable to access the available grant because of the age limit. In order to effectively and successfully implement the social welfare of policy of the Child Support Grant and reduce the poverty and inequalities of people living in households with children in South Africa, the government needs to revise the current institutional arrangements and implementation modalities.

8.2.1.3. Lack of political will for championship of a universal basic income grant (UBIG)

Successful implementation of the social welfare policy of the Child Support Grant and reduction of poverty in South Africa requires active involvement of the political authorities. Goodnow (cited in Anderson, 1997), described "politics" as formulating the will of the government, determining what government should do or should not do. According to him, the term *politics* includes but is certainly not limited to party politics; rather, it refers to patterns of power and influence between and within organisations. Those in authority are in power and their consent and co-operation are very influential in the success of policy implementation. Anderson (1997) also argued that strong and, sometimes, bitter political struggle helps the implementation of constitutional rights and public policies. Barberton (2006) indicated that the success of a policy likely depends on the willingness and ability of some dominant group to impose its will. According to him, the success of policy implementation primarily depends on the scope and close involvement of government officials to initiate and influence policy. Where no such dominance exists, policies may only be achieved through long processes. In order to fulfil its constitutional obligations to children, the government should be able to play an active role in terms of political championship for extending the Child Support Grant to all children under the age of 18 years and to remove the means test.

8.2.1.4. Insufficient research and dissemination of information

Successful implementation of social welfare policies requires the use of research outputs, appropriate documentation, the dissemination of best practices and ongoing monitoring and evaluation (M&E) activities. In this regard, Anderson (1997) noted that systematic M&E seeks information on the effects of a policy or programme on the public need or problem at which it is directed. According to him, effective M&E is essential at all levels of social welfare policy implementations. Furthermore, he indicated that key aspects of systematic evaluation include effectiveness, efficiency, impact and sustainability. Within the boundary of the national government, policy evaluation could be undertaken in numerous ways by a variety of officials and organisations.

As part of the M&E process, the establishment of proper research, documentation and dissemination of best practices can assist the implementation of related social welfare policies. Good quality data is also essential to inform appropriate M&E. This implies there is a need to urgently re-design M&E as well as information-disseminating instruments within the government structure that would help the effective and proper implementation of the social welfare policies of the Child Support Grant.

It is imperative to ensure that all stakeholders are adequately prepared and ready for the extensive changes implied by the social welfare policies of the Child Support Grant and reduction of poverty and inequalities of for people living in households with children in South Africa. Accordingly, the following recommendations are provided to inform and inspire legislative and policy makers, decision makers, and all relevant stakeholders to further refine the implementation modalities of and define the responsibilities for the social welfare policies of the Child Support Grant and reduction of child poverty in South Africa, as presented below.

8.3. Recommendations

Based upon the above findings on the social welfare policies of the Child Support Grant in reducing the poverty and inequalities of people living in households with children in South Africa, the following recommendations are provided to further refine and bring about improved implementation of the social welfare policies of the Child Support Grant.

8.3.1. Demonstration and applications of the constitutional rights of the child

The South African Constitution obligates the government to implement the qualified rights of section 27. The new Children's Act also creates the framework for the realisation of children's constitutional rights to social services, to family and parental or alternative care when removed from the family environment, to protection from maltreatment, neglect, abuse and degradation, and to promotion of the best interest of the child. To achieve the rights of the child, all relevant stakeholders must be able to design special instruments, such as rules, regulations, procedures, functions and steps, that would ensure the effective and efficient implementation of the Act. This means that government must cater for all children in need by providing programmes and ensuring the roll-out of services as quickly as administratively possible, not subject to any limitations.

It is also argued that effective and successful implementation of the social welfare policies of the Child Support Grant in South Africa requires a rights-based approach for development and systematic integration and partnerships among all stakeholders. As has been indicated by Alston (1998), Dawes (2006) and Piron (2004), a rights-based approach is a conceptual framework for the process of social development that is normatively based on international human rights standards and operationally directed to promoting and protecting human rights. This helps to promote equality and social transformation, to ensure the sustainability of development work, to empower people themselves, especially the most marginalised, to participate in policy formulation, and also to hold accountable those who have a duty to act (Jonsson, 2003; Nyamu-Musembi & Cornwall, 2004). All in all, the social welfare policies of the Child Support Grant in South Africa should be able to complement the key principles of international and national legal instruments as well as the constitutional rights of the child. Hence, it is ***recommended*** that the government of South Africa and its employees and other stakeholders, at the three levels, that is, national, provincial, and local, should collaborate more closely in a joint effort to ensure the constitutional rights of the child through effective and efficient implementation of the social welfare policies of the Child Support Grant in South Africa.

The implementation of social welfare policies of the Child Support Grant in South Africa requires a humanistic approach to development and calls for interconnected strategies that meet the interests of the children. The humanistic approach gives special emphasis to the participation of the child in decision making, capacity building, empowerment, equal partnership, transparency, sharing of power and responsibility. Hence, it is ***recommended*** that all stakeholders involved in the implementation process of the social welfare policies of the Child Support Grant in South Africa should be able to recognise and exercise a humanistic approach to development. There is a need for strategies to ensure that vulnerable groups, particularly children without a voice, are reached with these processes as well.

8.3.2. Institutional arrangements and implementation modalities (means test)

Analysis of different policy scenario modelling processes, using SAMOD, has ascertained that the Child Support Grant can play a significant role in the socio-economic and socio-political development processes of the country. However, the true potential of the Child Support Grant in terms of reducing the poverty and inequalities of people living in households with children has yet to be tapped. The result of the modelling process clearly indicated that the impact of implementation modalities of a means test has limited potential and is not optimal in terms of reducing the poverty and inequalities of people living in households with children in South Africa. Hence, revising and establishing new institutional arrangements (designing new policies, rules, regulations, models, procedures, steps, etc.) are decisive factors for the successful implementation of the social welfare policies of the Child Support Grant in South Africa. In this regard, it is ***recommended*** that the existing institutional arrangements should be revised and, depending upon the need, new institutional arrangements and implementation modalities for the social welfare policies of the Child Support Grant in South Africa should be prepared. Moreover, a concerted effort should be made by all relevant role players and, most importantly, by policy makers in order to assume new roles and facilitation techniques, which may require further commitment by the government. The role clarification that comes with the new institutional arrangements needs to cover all levels and, somehow, the process of role clarification needs to be clearly scrutinised and agreed to in order to foster joint ownership.

Strategic review of implementation modalities is crucial to the effectiveness and impact of the social welfare policies of the Child Support Grant in child poverty. Concerning this matter, it is ***recommended*** that a detailed review of strategic implementation, including modalities that address all challenges noted in the Child Support Grant process, must be prepared. In addition, the implementation modalities document should ensure that verifiable progress towards the main objectives in reducing the poverty and inequalities of people living in households with children is described in the policy framework, by defining time frames, functions, and roles and responsibilities, using objectively verifiable indicators to measure the outcomes of the social welfare policies of the Child Support Grant.

As a result of the difficulties encountered in implementation of the means test, and the fragmented and compartmentalised nature of planning and programming for social welfare policies of the Child Support Grant in South Africa, past efforts have not been very successful in reducing the poverty and inequalities of people living in households with children in South Africa. All these factors indicate that there is a need to move away from the existing ways of implementing a means test. Accordingly, it is ***recommended*** that (a) attention should be focused on finding new means of implementation for the social welfare policies of the Child Support Grant in South Africa as this would help to target the poverty and inequalities of people living in households with children in South Africa, and (b) needs should be identified, and logistical support in facilitating new implementation processes of the social welfare policies of the Child Support Grant in South Africa should be provided.

International and local evidence has shown that increasing family incomes through cash transfers or subsidies reduces poverty levels in households and enhances the child's development, educational achievement and health status (Barrientos & Dejong, 2004; Schubert, 2005). The simulation of different scenarios undertaken during the research process also supports these international findings. The results of this study clearly indicate that the current Child Support Grant is a cash transfer from the government to support poor families in providing for children's basic needs and has had a positive impact on many families. This is an indication that there is huge potential for the Child Support Grant to help in reducing poverty and inequality in households living with children.

The government's intention behind the implementation of a means test is to channel limited resources to those most in need. In addition to the age limits, a primary caregiver must earn less than the income threshold for the type of area in which he or she lives. The rough measure of eligibility described in the previous section was used to consider the relative accuracy of the targeting or application of the means test for the Child Support Grant in the low-income areas. However, a number of researchers (Besley & Kanbur, 1993; Grosh, 1994) emphasised that two key areas of interest when considering implementation modalities of the means test are *inclusion errors* and *exclusion errors*. Inclusion errors indicate what proportion of those caregivers who indicated that they are receiving the Child Support Grant do not appear to qualify for the grant, based on their reported income, whereas exclusion errors refer to those primary caregivers with children who are eligible for the Child Support Grant but are not currently receiving the support. Distinguishing the very poor from the poor is always difficult because of lack of accurate information. As a result, the proper implementation of the means test modality is always difficult and creates inclusion and exclusion errors. The modelling exercise indicated that the universal child support grant has the potential to help in avoiding possible errors, more than any other scenario for child support grant intervention. Hence, with the objective of bringing about successful social welfare policy implementation and a reduction of poverty and inequalities of people living in households with children in South Africa, it is ***recommended*** that a universal child support grant (UCSG), should be implemented as it has the potential to promote social development and sustainable livelihoods in South Africa.

8.3.3. Promotion of political championship and public participation

The success of policy implementation primarily depends on the scope and close involvement of government officials to initiate and influence policy (Anderson, 1997; Barberton, 2006). They further noted that where no such dominance exists, policies may only be achieved through long processes.

As part of the institutional arrangements, designing a strong political championship strategy and public participation for a universal child support grant (UCSG) is an important strategy for the successful implementation of the Child Support Grant and the reduction of poverty and inequalities of people living in households with children in South Africa. In case of non-compliance for a political championship strategy and public participation for a universal child support grant, immediate measure should be taken. In general, there must be strong action should be taken if people do not support the political championship strategy and public participation for a universal child support grant.

Section 9(1) states that "everyone is equal before the law and has the right to equal protection and benefit of the law". Section 9(3) prohibits unfair discrimination by the State "directly or indirectly" on the basis of a list of grounds and possibly other unlisted grounds. Section 9(5) creates a presumption of unfairness if a claim of unfair discrimination is made on the basis of a listed ground. The State then has the responsibility to establish that the discrimination was not unfair (or that the discrimination was not in fact based on the listed ground alleged). Under section 9(3), the most relevant ground for unfair discrimination against the provision of social assistance to children aged 15-18, is '*age*'. It is thus unfair discrimination to give a grant to a 14-

year-old but deny it to a 15-year-old who is in a similar poverty stricken situation. Thus, it could once more be argued that the State's grant programme for poor children, in so far as it excludes children between the ages of 15 and 18 years, is not reasonable in terms of section 27(2) and is therefore unconstitutional.

The modelling of different scenarios clearly identified that the effectiveness of the Child Support Grant in reduction of the poverty and inequalities of people living in households with children is seriously hampered by the restricted age eligibility. The extension of the grant from 0 to 15 years has greatly increased its potential to assist poor children and their families in caring for them. Since the introduction of the Child Support Grant in South Africa, at the beginning of April 1998, the value and age limit have been increased many times. Recently, the government also promised the extension of the Child Support Grant to children aged 18. According to the report of the Department of Social Development (2010), this will be made possible through a phase-in system and using a means-test implementation modality. However, the Child Support Grant would have maximum impact if all children under 18 years could receive a universal child support grant. The government is constitutionally obliged to provide social assistance to everyone who is unable to support himself or herself, and it should continue to progressively realise this right for all, beginning with children. Hence, with the objective of realising children's rights and reducing child poverty in South Africa, it is ***recommended*** that government should take the role of political championship, avoid discrimination, and introduce a universal child support grant (UCSG) to all children, regardless of age, sex, colour and religion.

According to Oakely (1991) and Maser (1997), participation requires involvement of all stakeholders in the decision-making process to harness the existing physical, economic and social resources of people in order to attain the objectives of programmes and projects. Paul

(1987) also referred to the importance of participation in the implementation process and encouraged understanding of, and agreement on, the objectives to be achieved. Involving people in the policy implementation, mainly in the decision-making process and analysis of problems that affect them, is a good way to achieve successful implementation. A participatory policy implementation approach generally leads to public policies that are sustainable over the long term because people themselves have a stake in their success.

In this research argued that active involvement and participation of children in decision-making concerning implementation of process, programmes and projects can also have a positive effect on a reduction of poverty and inequalities of people living in households with children in South Africa. The rationale behind the emergence of the participatory decision-making process is that children will develop and strengthen their capabilities and sense of ownership in so far as their work is concerned. This is empowering and leads to self-transformation as well as self-reliance, thereby ensuring sustainability of social development activities at the community level. In this regard, inclusion of all children in the decision-making processes is ***recommended,*** along with equal partnership and recognition that every person has skill and ability, transparency and creating an environment conducive to open communication and building dialogue; and sharing responsibility among all stakeholders and equal responsibility for decisions that are made.

8.3.4. Undertaking monitoring and evaluation (M&E)

The successful implementation of the Child Support Grant requires the design of proper monitoring and evaluation and effective assessment of tools throughout the implementation programme. Anderson (1997) noted that systematic monitoring and evaluation seeks information on the effects of a policy or programme on the public need or problem at which it is directed. It utilises particularly the talents of social scientists (economists, lawyers, sociologists, political scientists, psychologists, development specialists, etc.) and it involves the specification of goals or objectives; the collection of information and data on programme inputs, outputs, and consequences; and their rigorous analysis, preferably through the use of quantitative or statistical techniques.

Effective monitoring and evaluation is essential from the beginning of any programme. Furthermore, there is an ongoing need to consistently check on additional learning requirements, for example, how the various new policies should be used and the technical tasks accompanying those policies, such as compliance with the regulations and procedures to be followed and the administrative support systems involved, such as completing new recording forms. Political leaders have a key role in checking that the social welfare policies of the Child Support Grant are being used appropriately and effectively.

Research, M&E, have an important contribution to make in effective Child Support Grant policy implementation and the following suggestions are offered on the basis of the research conducted:

- The existing M&E documentation and dissemination of "best practices", exchange of information and co-ordination between government authorities, NGOs and international communities should be improved. In this connection, it is **recommended** that, national, regional and local government participants should outline a policy framework and operational modalities by stating clearly the roles of all stakeholders in the implementation process of the social welfare policies of the Child Support Grant at various levels.

- Process documentation is one of the important aspects of the general framework of the project. Analysis of the existing South African literature on the topic indicates that the documentation process and dissemination of research outputs are insufficient. Hence, it is ***recommended*** that a database programme should be established and that all relevant information must be recorded. With the objective of achieving documentation and dissemination of best practices of the social welfare policies of the Child Support Grant in South Africa, local, district and national level debate on the promotion of such policies must be initiated. In this regard, it is recommended that planners

    1. initiate seminars and workshops on the social welfare policies of the Child Support Grant in South Africa and promote issues for relevant groups (NGOs and relevant GO departments);

    2. organise round-table discussions/workshops, dialogue for exchange of information and experiences and discussion of project policy as well as implementation strategies with all relevant actors at local, provincial and national levels;

    3. undertake programme back-up research/review that looks into activities according to hypotheses, purposes, goals, and promotional activities of the social welfare policies of the Child Support Grant in South Africa; perform periodic programme policy review; and apply the results. The reviews should be conducted following a participatory approach involving as many stakeholders as possible. This will be the key to enabling learning from the pilot project on social welfare policies of the Child Support Grant and child poverty in South Africa;

4. regularly document the processes involved in the social welfare policies of the Child Support Grant in South Africa, in relation to lessons learnt, challenges and opportunities, in greater detail for the future replication, in other areas and countries, of the projects/programmes of the social welfare policies of the Child Support Grant in South Africa; and
5. publish and disseminate/circulate information on the outcomes of the social welfare policies of the Child Support Grant in South Africa, such as best practices, using posters, brochures, web sites, publications, journals and others.

8.4. Areas for further research

The South African government's concept of poverty reduction is designed at targeting individual households that make up the community. Accordingly, the government is implementing a number of social welfare policies at various levels. These include the social welfare policies on the Care Dependency Grant (CDG), the Foster Child Grant (FCG), the Old Age Grant (OAG), the Disability Grant (DG), and the Grant in Aid (GI). It is evident from this study that the theoretical and conceptual framework developed herein and the model used (SAMOD) can be replicated successfully. The following are recommendations for further research in this regard.

- *First,* assessing the impact of the Care Dependency Grant (CDG), the Foster Child Grant (FCG) the, Old Age Grant (OAG), the Disability Grant (DG), and the Grant in Aid (GI) in relation to their potential to reduce the poverty and inequalities of people living in households with children in South Africa. In this regard, there are a range of possible social and economic changes that could be modelled using the information available in SAMOD.

- *Second,* investigation into the Child Support Grant in relation to its potential to reduce the poverty and inequalities of people living in households with children in South Africa should be carried out. This should be done by updating the population baseline and the most recent government policy rules. This will help to ascertain the socio-economic spheres where the Child Support Grant is most needed.

8.5. Wrap-up

The context of this study should be seen as the emerging discourse around the rights of the child. A rights-based approach is a conceptual framework for the process of social development that is normatively based on international human rights standards and operationally directed to promoting and protecting human rights (Alston, 1998; Prion, 2004). This helps to promote equality and social transformation, empowering people themselves (Jonsson, 2003; Nyamu-Musembi & Cornwall, 2004).

For children a rights-based approach has been strengthened by international and continental level legal instruments viz the UN Convention on the Rights of the Child (1989), and the African Charter on the Rights and Welfare of the Child (1990). In South Africa, a rights-based approach this has been further reinforced by the provisions of the South African Constitution (1996). In South Africa, the new children's legislation is intended to give practical expression to the mandates emanating from the UN Convention on the Rights of the Child (1989), the African Charter on the Rights and Welfare of the Child (1990) and the South African Constitution (1996). This intent is succinctly captured in the following excerpt from the legislation (Children Act No 38 of 2005, Section 2):

- *To protect children from discrimination, exploitation, any other physical, emotional or moral harm or hazard*

- *To provide care and protection to children who are in need of care and protection*

- *To recognize the special needs that children with disabilities may have; and*

- *Generally to promote the protection, development, and well being of children.*

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Annexure 1: Simulation result of Scenario I

```
  ___  ____  ____  ____  ____ tm
 /__    /   ____/   /   ____/
___/   /   /___/   /   /___/   10.1   Copyright 1984-2008
  Statistics/Data Analysis            StataCorp
                                      4905 Lakeway Drive
     Special Edition                  College Station, Texas 77845 USA
                                      800-STATA-PC        http://www.stata.com
                                      979-696-4600        stata@stata.com
                                      979-696-4601 (fax)

70-user Stata for Windows (network) perpetual license:
       Serial number:  81910541205
         Licensed to:  Commerce Faculty
                       University of Cape Town

Notes:
      1.  (/m# option or -set memory-) 10.00 MB allocated to data
      2.  (/v# option or -set maxvar-) 5000 maximum variables
      3.  New update available; type -update all-

. do "C:\Users\Mulugeta\AppData\Local\Temp\STD09000000.tmp"

. log using scenario-1
----------------------------------------------------------------------------------------------------------------
       log:  C:\Users\Mulugeta\Desktop\STATA WTL\scenario-11.smcl
  log type:  smcl
 opened on:  22 Nov 2010, 21:26:50

. set memory 500m

Current memory allocation

                    current                                 memory usage
    settable          value     description                 (1M = 1024k)
    --------------------------------------------------------------------
    set maxvar         5000     max. variables allowed           1.909M
    set memory         500M     max. data space                500.000M
    set matsize         400     max. RHS vars in models          1.254M
                                                            -----------
                                                               503.163M

. adopath+ "C:\SAMOD\TOOLS\Stata tools"
  [1]  (UPDATES)   "C:\Users\Mulugeta\Desktop\STATA WTL\ado\updates/"
  [2]  (BASE)      "C:\Users\Mulugeta\Desktop\STATA WTL\ado\base/"
  [3]  (SITE)      "C:\Users\Mulugeta\Desktop\STATA WTL\ado\site/"
  [4]              "."
  [5]  (PERSONAL)  "c:\ado\personal/"
  [6]  (PLUS)      "c:\ado\plus/"
  [7]  (OLDPLACE)  "c:\ado/"
```

```
  [8]          "C:\SAMOD\TOOLS\Stata tools"

. insheet using "C:\SAMOD\Output\sa_2008&s1output_ext_std_sa.txt"
(71 vars, 99684 obs)

. n_ben co_bch, label ( "CSG" ) takeup
Total number of CSG recipients = 0: take-up rate = 100%

. total_exp co_bch, label ( "CSG" )
Total per annum expenditure on CSG = 0

. bys cohhid: egen hh_inc07 = sum(std_dispy)

. bys cohhid: gen nHHmem = _N

. gen pcap_inc07= hh_inc07/nHHmem

. replace pcap_inc07 = 0.1 if pcap_inc07 <=0
(1364 real changes made)

. gen n_ch_in_hh=0

. forvalues n=1(1)25{
  2. bys cohhid: replace n_ch_in_hh=n_ch_in_hh+1 if codag[`n']<18
  3. }
(305 real changes made)
(7936 real changes made)
(32925 real changes made)
(42627 real changes made)
(42956 real changes made)
(36977 real changes made)
(29050 real changes made)
(21913 real changes made)
(15838 real changes made)
(11396 real changes made)
(6644 real changes made)
(4653 real changes made)
(3194 real changes made)
(2210 real changes made)
(1569 real changes made)
(1182 real changes made)
(897 real changes made)
(555 real changes made)
(490 real changes made)
(319 real changes made)
(199 real changes made)
(115 real changes made)
(71 real changes made)
(25 real changes made)
(25 real changes made)

. gen anydepch=0

. replace anydepch=1 if n_ch_in_hh>0
(82655 real changes made)
```

```
.
. *POVDECO
. *FOR TOTAL POPULATION
.
. povdeco pcap_inc07, pl(450)

Total number of observations = 99684
Weighted total no. of observations = 99684
Number of observations poor = 52565
Weighted no. of obs poor = 52565
Mean of pcap_inc07 amongst the poor =   208.084
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   241.916

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |       a=0        a=1        a=2
----------+----------------------------------
          |   0.52732    0.28348    0.19124
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

. preserve

. keep if anydepch==1
(17029 observations deleted)


.
. *FOR PEOPLE IN HHOLDS WITH CHILDREN
.
. povdeco pcap_inc07, pl(450)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 48996
Weighted no. of obs poor = 48996
Mean of pcap_inc07 amongst the poor =   207.818
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   242.182

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |       a=0        a=1        a=2
----------+----------------------------------
          |   0.59278    0.31902    0.21407
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

. povdeco pcap_inc07, pl(450) by(codrc)

Total number of observations = 82655
Weighted total no. of observations = 82655
```

Number of observations poor = 48996
Weighted no. of obs poor = 48996
Mean of pcap_inc07 amongst the poor = 207.818
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 242.182

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.59278	0.31902	0.21407

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrc	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.82662	582.12390	204.71461	245.28537
2	0.11393	1.17e+03	249.43304	200.56697
3	0.01798	2.83e+03	293.38870	156.61131
4	0.04022	6.24e+03	196.37598	253.62404
5	0.00126	2.44e+03	138.05640	311.94360

Subgroup FGT index estimates, FGT(a)

codrc	a=0	a=1	a=2
1	0.66663	0.36337	0.24526
2	0.34289	0.15283	0.09274
3	0.07806	0.02717	0.01184
4	0.02226	0.01255	0.00867
5	0.28846	0.19996	0.16028

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrc	a=0	a=1	a=2
1	0.92961	0.94152	0.94707
2	0.06590	0.05458	0.04936
3	0.00237	0.00153	0.00099
4	0.00151	0.00158	0.00163
5	0.00061	0.00079	0.00094

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codrc	a=0	a=1	a=2
1	1.12459	1.13900	1.14572
2	0.57845	0.47905	0.43325
3	0.13169	0.08516	0.05533
4	0.03756	0.03933	0.04051
5	0.48663	0.62680	0.74874

. povdeco pcap_inc07, pl(450) by(codgn)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 48996
Weighted no. of obs poor = 48996
Mean of pcap_inc07 amongst the poor = 207.818
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 242.182

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.59278	0.31902	0.21407

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codgn	Pop. share	Mean	Mean|poor	Mean gap|poor
0	0.54342	877.07007	207.42470	242.57529
1	0.45658	970.14471	208.30872	241.69130

Subgroup FGT index estimates, FGT(a)

codgn	a=0	a=1	a=2
0	0.60522	0.32625	0.21881
1	0.57797	0.31042	0.20842

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codgn	a=0	a=1	a=2

```
----------+-----------------------------------
        0 |   0.55482    0.55572    0.55546
        1 |   0.44518    0.44428    0.44454
----------------------------------------------
```

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

```
----------------------------------------------
    codgn |       a=0        a=1        a=2
----------+-----------------------------------
        0 |   1.02099    1.02265    1.02216
        1 |   0.97502    0.97305    0.97362
----------------------------------------------
```

. povdeco pcap_inc07, pl(450) by(codur)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 48996
Weighted no. of obs poor = 48996
Mean of pcap_inc07 amongst the poor =   207.818
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   242.182

Foster-Greer-Thorbecke poverty indices, FGT(a)

```
----------------------------------------------
  All obs |       a=0        a=1        a=2
----------+-----------------------------------
          |   0.59278    0.31902    0.21407
----------------------------------------------
```

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

```
-------------------------------------------------------------------
    codur |  Pop. share        Mean   Mean|poor  Mean gap|poor
----------+--------------------------------------------------------
        0 |     0.50359   443.07550   196.14586    253.85416
        1 |     0.49641    1.40e+03   228.97409    221.02592
-------------------------------------------------------------------
```

Subgroup FGT index estimates, FGT(a)

```
----------------------------------------------
    codur |       a=0        a=1        a=2
----------+-----------------------------------
        0 |   0.75858    0.42793    0.29209
        1 |   0.42458    0.20854    0.13492
----------------------------------------------
```

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codur	a=0	a=1	a=2
0	0.64444	0.67550	0.68713
1	0.35556	0.32450	0.31287

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codur	a=0	a=1	a=2
0	1.27970	1.34138	1.36448
1	0.71626	0.65369	0.63025

. povdeco pcap_inc07, pl(450) by(codrgn1)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 48996
Weighted no. of obs poor = 48996
Mean of pcap_inc07 amongst the poor = 207.818
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 242.182

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.59278	0.31902	0.21407

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrgn1	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.09368	1.54e+03	266.43188	183.56813
2	0.15370	646.85242	189.24408	260.75592
3	0.04213	1.17e+03	226.73132	223.26868
4	0.07592	882.63281	192.90614	257.09384
5	0.19721	748.97815	207.76135	242.23866
6	0.09594	829.57269	215.64850	234.35152
7	0.11271	1.58e+03	234.49239	215.50761
8	0.09171	721.95770	218.89041	231.10960
9	0.13702	647.88263	193.40758	256.59241

Subgroup FGT index estimates, FGT(a)

codrgn1	a=0	a=1	a=2
1	0.28865	0.11775	0.06823
2	0.70568	0.40891	0.28510
3	0.56577	0.28071	0.17968
4	0.66040	0.37730	0.26307
5	0.65515	0.35267	0.23538
6	0.58625	0.30531	0.20242
7	0.36786	0.17617	0.11215
8	0.61675	0.31675	0.20417
9	0.72865	0.41548	0.28544

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrgn1	a=0	a=1	a=2
1	0.04562	0.03458	0.02986
2	0.18297	0.19701	0.20471
3	0.04021	0.03707	0.03536
4	0.08458	0.08979	0.09330
5	0.21796	0.21801	0.21684
6	0.09489	0.09182	0.09072
7	0.06994	0.06224	0.05905
8	0.09542	0.09105	0.08747
9	0.16842	0.17844	0.18270

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codrgn1	a=0	a=1	a=2
1	0.48694	0.36909	0.31874
2	1.19047	1.28177	1.33186
3	0.95443	0.87990	0.83936
4	1.11408	1.18267	1.22892
5	1.10523	1.10549	1.09955
6	0.98900	0.95702	0.94559
7	0.62057	0.55222	0.52392
8	1.04045	0.99288	0.95379
9	1.22922	1.30236	1.33342

. restore

. preserve

. keep if anydepch==0
(82655 observations deleted)

.

```
. *FOR PEOPLE IN HHOLDS WITHOUT CHILDREN
.
. povdeco pcap_inc07, pl(450)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor =   211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

----------------------------------------------
  All obs |      a=0        a=1        a=2
----------+-----------------------------------
          |   0.20958    0.11097    0.08047
----------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

. povdeco pcap_inc07, pl(450) by(codrc)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor =   211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)
```



```
----------------------------------------------
  All obs |      a=0        a=1        a=2
----------+-----------------------------------
          |   0.20958    0.11097    0.08047
----------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup
--------------------------

Summary statistics for subgroup k = 1,...,K

-----------------------------------------------------------------------
    codrc |  Pop. share        Mean     Mean|poor  Mean gap|poor
----------+------------------------------------------------------------
        1 |    0.73005     1.58e+03    210.21771      239.78230
        2 |    0.10194     2.06e+03    242.30667      207.69331
        3 |    0.02872     4.25e+03      7.09333      442.90668
        4 |    0.13735     9.09e+03    145.68300      304.31702
        5 |    0.00194     7.48e+03      0.00000        0.00000
-----------------------------------------------------------------------
```

Subgroup FGT index estimates, FGT(a)

codrc	a=0	a=1	a=2
1	0.26754	0.14256	0.10396
2	0.13076	0.06035	0.03791
3	0.01227	0.01208	0.01190
4	0.00428	0.00289	0.00269
5	0.00000	0.00000	0.00000

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrc	a=0	a=1	a=2
1	0.93191	0.93785	0.94313
2	0.06360	0.05544	0.04803
3	0.00168	0.00313	0.00425
4	0.00280	0.00358	0.00459
5	0.00000	0.00000	0.00000

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codrc	a=0	a=1	a=2
1	1.27651	1.28465	1.29187
2	0.62391	0.54386	0.47116
3	0.05854	0.10883	0.14787
4	0.02040	0.02605	0.03344
5	0.00000	0.00000	0.00000

. povdeco pcap_inc07, pl(450) by(codgn)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor = 211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codgn	Pop. share	Mean	Mean|poor	Mean gap|poor
0	0.43485	2.64e+03	217.01289	232.98711
1	0.56515	2.84e+03	207.46808	242.53192

Subgroup FGT index estimates, FGT(a)

codgn	a=0	a=1	a=2
0	0.21553	0.11159	0.07955
1	0.20501	0.11049	0.08118

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codgn	a=0	a=1	a=2
0	0.44718	0.43728	0.42988
1	0.55282	0.56272	0.57012

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codgn	a=0	a=1	a=2
0	1.02837	1.00560	0.98858
1	0.97817	0.99569	1.00879

. povdeco pcap_inc07, pl(450) by(codur)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor = 211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codur	Pop. share	Mean	Mean|poor	Mean gap|poor
0	0.33660	1.88e+03	207.03867	242.96133
1	0.66340	3.19e+03	216.30682	233.69318

Subgroup FGT index estimates, FGT(a)

codur	a=0	a=1	a=2
0	0.30705	0.16578	0.11897
1	0.16013	0.08316	0.06094

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codur	a=0	a=1	a=2
0	0.49314	0.50286	0.49764
1	0.50686	0.49714	0.50236

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codur	a=0	a=1	a=2
0	1.46504	1.49392	1.47843
1	0.76404	0.74939	0.75725

. povdeco pcap_inc07, pl(450) by(codrgn1)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor = 211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2

	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrgn1	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.10876	3.85e+03	246.00023	203.99977
2	0.11099	2.06e+03	198.63673	251.36328
3	0.05990	3.50e+03	241.39166	208.60832
4	0.08914	2.64e+03	181.88986	268.11014
5	0.15215	2.47e+03	208.98218	241.01782
6	0.11557	2.51e+03	215.14168	234.85832
7	0.20506	3.31e+03	237.92213	212.07785
8	0.07986	1.96e+03	224.40860	225.59142
9	0.07857	2.01e+03	196.53404	253.46596

Subgroup FGT index estimates, FGT(a)

codrgn1	a=0	a=1	a=2
1	0.07127	0.03231	0.02292
2	0.32169	0.17969	0.13106
3	0.19314	0.08953	0.05874
4	0.28722	0.17113	0.13292
5	0.21459	0.11493	0.08424
6	0.22713	0.11854	0.08563
7	0.13746	0.06478	0.04435
8	0.23456	0.11759	0.08380
9	0.29447	0.16586	0.12174

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrgn1	a=0	a=1	a=2
1	0.03699	0.03167	0.03098
2	0.17036	0.17972	0.18077
3	0.05520	0.04833	0.04372
4	0.12216	0.13747	0.14724
5	0.15579	0.15759	0.15927
6	0.12525	0.12346	0.12298
7	0.13449	0.11971	0.11301
8	0.08938	0.08463	0.08316
9	0.11040	0.11744	0.11887

```
----------------------------------------------

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

----------------------------------------------
  codrgn1 |       a=0        a=1        a=2
----------+-----------------------------------
        1 |   0.34008    0.29117    0.28485
        2 |   1.53492    1.61930    1.62872
        3 |   0.92153    0.80683    0.72989
        4 |   1.37043    1.54210    1.65180
        5 |   1.02388    1.03572    1.04678
        6 |   1.08374    1.06825    1.06417
        7 |   0.65586    0.58378    0.55109
        8 |   1.11917    1.05964    1.04131
        9 |   1.40502    1.49467    1.51284
----------------------------------------------

. restore

.
. *INEQDECO
. *FOR TOTAL POPULATION
.
. ineqdeco pcap_inc07


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 32.652    7.334    0.225    5.206    2.460    0.473

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

----------------------------------------------------------------------
  All obs |    GE(-1)       GE(0)       GE(1)       GE(2)        Gini
----------+-----------------------------------------------------------
          |  89.59640     1.12575     1.05607     3.57593     0.69620
----------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

----------------------------------------------
  All obs |    A(0.5)       A(1)       A(2)
----------+-----------------------------------
          |   0.41133    0.67559    0.99445
----------------------------------------------

. preserve

. keep if anydepch==1
(17029 observations deleted)

.
```

```
. *FOR PEOPLE IN HHOLDS WITH CHILDREN
.
. ineqdeco pcap_inc07


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 24.306    6.044    0.249    4.457    2.263    0.508

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

---------------------------------------------------------------------
 All obs |    GE(-1)       GE(0)       GE(1)       GE(2)       Gini
----------+----------------------------------------------------------
         |  68.76204     1.02450     0.98655     3.47664     0.67131
---------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

----------------------------------------------
 All obs |    A(0.5)       A(1)       A(2)
----------+-----------------------------------
         |   0.38356     0.64102     0.99278
----------------------------------------------

. ineqdeco pcap_inc07, by(codrc)


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 24.306    6.044    0.249    4.457    2.263    0.508

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

---------------------------------------------------------------------
 All obs |    GE(-1)       GE(0)       GE(1)       GE(2)       Gini
----------+----------------------------------------------------------
         |  68.76204     1.02450     0.98655     3.47664     0.67131
---------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

----------------------------------------------
 All obs |    A(0.5)       A(1)       A(2)
----------+-----------------------------------
         |   0.38356     0.64102     0.99278
----------------------------------------------

Subgroup summary statistics, for each subgroup k = 1,...,K:
```

codrc	Pop. share	Mean	Rel.mean	Income share	log(mean)
1	0.82662	582.12390	0.63304	0.52328	6.36668
2	0.11393	1.17e+03	1.27310	0.14505	7.06535
3	0.01798	2.83e+03	3.07883	0.05535	7.94845
4	0.04022	6.24e+03	6.78810	0.27299	8.73907
5	0.00126	2.44e+03	2.64946	0.00333	7.79826

Subgroup indices: GE_k(a) and Gini_k

codrc	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	49.24482	0.81958	0.77879	3.72045	0.59597
2	34.36168	0.62342	0.53838	0.80567	0.54672
3	29.23602	0.41996	0.38553	0.60160	0.46563
4	122.76440	0.37027	0.34311	0.65485	0.41038
5	593.80756	1.26019	0.55748	0.60280	0.55982

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	68.55828	0.77253	0.60248	2.70253

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.20376	0.25197	0.38408	0.77411

Subgroup Atkinson indices, A_k(e)

codrc	A(0.5)	A(1)	A(2)
1	0.30881	0.55938	0.98995
2	0.24575	0.46389	0.98566
3	0.17905	0.34293	0.98319
4	0.15312	0.30945	0.99594
5	0.30750	0.71640	0.99916

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)

	0.24998	0.46585	0.99062

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.17810	0.32795	0.23046

. ineqdeco pcap_inc07, by(codgn)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
24.306	6.044	0.249	4.457	2.263	0.508

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	68.76204	1.02450	0.98655	3.47664	0.67131

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.38356	0.64102	0.99278

Subgroup summary statistics, for each subgroup k = 1,...,K:

codgn	Pop. share	Mean	Rel.mean	Income share	log(mean)
0	0.54342	877.07007	0.95379	0.51830	6.77659
1	0.45658	970.14471	1.05500	0.48170	6.87745

Subgroup indices: GE_k(a) and Gini_k

codgn	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
0	68.50262	1.01275	0.97747	3.42713	0.66776
1	68.69927	1.03572	0.99370	3.50492	0.67455

Within-group inequality, GE_W(a)

```
-----------------------------------------------------------
 All obs |    GE(-1)       GE(0)       GE(1)       GE(2)
----------+------------------------------------------------
         |  68.76077    1.02324     0.98528     3.47537
-----------------------------------------------------------
```

Between-group inequality, GE_B(a):

```
-----------------------------------------------------------
 All obs |    GE(-1)       GE(0)       GE(1)       GE(2)
----------+------------------------------------------------
         |   0.00126     0.00127     0.00127     0.00127
-----------------------------------------------------------
```

Subgroup Atkinson indices, A_k(e)

```
-----------------------------------------------
   codgn |    A(0.5)       A(1)        A(2)
----------+------------------------------------
       0 |   0.37987     0.63678     0.99275
       1 |   0.38688     0.64503     0.99277
-----------------------------------------------
```

Within-group inequality, A_W(e)

```
-----------------------------------------------
 All obs |    A(0.5)       A(1)        A(2)
----------+------------------------------------
         |   0.38325     0.64075     0.99276
-----------------------------------------------
```


Between-group inequality, A_B(e)

```
-----------------------------------------------
 All obs |    A(0.5)       A(1)        A(2)
----------+------------------------------------
         |   0.00050     0.00075     0.00238
-----------------------------------------------
```

```
. ineqdeco pcap_inc07, by(codur)
```

Percentile ratios for distribution of pcap_inc07: all valid obs.

```
-------------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
-------------------------------------------------------------
 24.306    6.044    0.249    4.457    2.263    0.508
```

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

```
-----------------------------------------------------------------------
 All obs |    GE(-1)       GE(0)       GE(1)       GE(2)        Gini
----------+------------------------------------------------------------
```

	68.76204	1.02450	0.98655	3.47664	0.67131

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.38356	0.64102	0.99278

Subgroup summary statistics, for each subgroup k = 1,...,K:

codur	Pop. share	Mean	Rel.mean	Income share	log(mean)
0	0.50359	443.07550	0.48183	0.24264	6.09374
1	0.49641	1.40e+03	1.52566	0.75736	7.24633

Subgroup indices: GE_k(a) and Gini_k

codur	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
0	40.45339	0.78795	0.83259	5.70737	0.58151
1	80.81958	0.94619	0.84738	2.31351	0.64568

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	68.57677	0.86650	0.84380	3.34045

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.18526	0.15800	0.14276	0.13619

Subgroup Atkinson indices, A_k(e)

codur	A(0.5)	A(1)	A(2)
0	0.30668	0.54522	0.98779
1	0.35071	0.61178	0.99385

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.34002	0.59563	0.99238

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.06596	0.11226	0.05252

. ineqdeco pcap_inc07, by(codrgn1)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
24.306	6.044	0.249	4.457	2.263	0.508

Generalized Entropy indices GE(a), where a = income difference
sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	68.76204	1.02450	0.98655	3.47664	0.67131

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.38356	0.64102	0.99278

Subgroup summary statistics, for each subgroup k = 1,...,K:

codrgn1	Pop. share	Mean	Rel.mean	Income share	log(mean)
1	0.09368	1.54e+03	1.67154	0.15659	7.33765
2	0.15370	646.85242	0.70343	0.10812	6.47212
3	0.04213	1.17e+03	1.27075	0.05353	7.06351
4	0.07592	882.63281	0.95984	0.07287	6.78291
5	0.19721	748.97815	0.81449	0.16062	6.61871
6	0.09594	829.57269	0.90213	0.08655	6.72091
7	0.11271	1.58e+03	1.71403	0.19319	7.36275
8	0.09171	721.95770	0.78511	0.07200	6.58197
9	0.13702	647.88263	0.70455	0.09653	6.47371

Subgroup indices: GE_k(a) and Gini_k

codrgn1	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	46.48384	0.69692	0.65227	1.11432	0.58735
2	67.25942	1.05144	0.96630	2.54019	0.66865
3	81.37560	1.09016	1.06597	3.44303	0.69321
4	71.93385	1.21887	1.31051	8.21337	0.71958
5	54.84763	0.94867	0.92922	2.62277	0.65582
6	68.51963	0.90133	0.76884	1.43663	0.62744
7	86.84940	0.93972	0.90825	2.80457	0.65138
8	40.76263	0.81413	0.79296	1.79765	0.61595
9	61.59404	1.06758	1.19935	9.22398	0.68064

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	68.70589	0.96576	0.92330	3.40647

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.05615	0.05874	0.06325	0.07017

Subgroup Atkinson indices, A_k(e)

codrgn1	A(0.5)	A(1)	A(2)
1	0.28271	0.50188	0.98936
2	0.38322	0.65057	0.99262
3	0.40855	0.66384	0.99389
4	0.45296	0.70444	0.99310
5	0.36521	0.61274	0.99097
6	0.33013	0.59397	0.99276
7	0.35895	0.60926	0.99428
8	0.32190	0.55698	0.98788
9	0.40985	0.65616	0.99195

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.35990	0.60677	0.99187

```
----------------------------------------------

Between-group inequality, A_B(e)

----------------------------------------------
  All obs |     A(0.5)        A(1)        A(2)
----------+-----------------------------------
          |    0.03696     0.08711     0.11181
----------------------------------------------

. restore

. preserve

. keep if anydepch==0
(82655 observations deleted)

.
. *FOR PEOPLE IN HHOLDS WITHOUT CHILDREN
.
. ineqdeco pcap_inc07


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 29.901    6.709    0.224    6.294    3.015    0.479

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

----------------------------------------------------------------------
  All obs |    GE(-1)       GE(0)       GE(1)       GE(2)        Gini
----------+-----------------------------------------------------------
          | 170.95215     0.99848     0.84086     2.13149     0.64821
----------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

----------------------------------------------
  All obs |     A(0.5)        A(1)        A(2)
----------+-----------------------------------
          |    0.35537     0.63156     0.99708
----------------------------------------------

. ineqdeco pcap_inc07, by(codrc)


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 29.901    6.709    0.224    6.294    3.015    0.479

Generalized Entropy indices GE(a), where a = income difference
```

sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	170.95215	0.99848	0.84086	2.13149	0.64821

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.35537	0.63156	0.99708

Subgroup summary statistics, for each subgroup k = 1,...,K:

codrc	Pop. share	Mean	Rel.mean	Income share	log(mean)
1	0.73005	1.58e+03	0.57547	0.42012	7.36741
2	0.10194	2.06e+03	0.74866	0.07632	7.63052
3	0.02872	4.25e+03	1.54322	0.04431	8.35386
4	0.13735	9.09e+03	3.30514	0.45397	9.11547
5	0.00194	7.48e+03	2.71962	0.00527	8.92048

Subgroup indices: GE_k(a) and Gini_k

codrc	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	127.98327	0.83388	0.62960	1.03477	0.58332
2	19.24066	0.56076	0.52910	0.91403	0.53316
3	176.11238	0.60167	0.53478	0.93418	0.53699
4	59.18211	0.43629	0.43411	0.87801	0.47408
5	1.06869	0.52585	0.42061	0.47096	0.49866

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	170.71930	0.74416	0.52788	1.69045

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.23283	0.25431	0.31298	0.44104

Subgroup Atkinson indices, A_k(e)

codrc	A(0.5)	A(1)	A(2)
1	0.28866	0.56564	0.99611
2	0.23486	0.42923	0.97467
3	0.23745	0.45210	0.99717
4	0.19062	0.35357	0.99162
5	0.21088	0.40895	0.68126

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.23737	0.45310	0.99082

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.15473	0.32632	0.68221

. ineqdeco pcap_inc07, by(codgn)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
29.901	6.709	0.224	6.294	3.015	0.479

Generalized Entropy indices GE(a), where a = income difference
sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	170.95215	0.99848	0.84086	2.13149	0.64821

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.35537	0.63156	0.99708

Subgroup summary statistics, for each subgroup k = 1,...,K:

codgn	Pop. share	Mean	Rel.mean	Income share	log(mean)
0	0.43485	2.64e+03	0.95850	0.41680	7.87760
1	0.56515	2.84e+03	1.03193	0.58320	7.95142

Subgroup indices: GE_k(a) and Gini_k

codgn	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
0	137.71481	1.00330	0.88427	2.35943	0.66003
1	198.06570	0.99359	0.80869	1.97438	0.63815

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	170.95148	0.99781	0.84019	2.13083

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.00067	0.00067	0.00066	0.00066

Subgroup Atkinson indices, A_k(e)

codgn	A(0.5)	A(1)	A(2)
0	0.36671	0.63333	0.99638
1	0.34651	0.62975	0.99748

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.35493	0.63124	0.99702

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)

```
         |   0.00067    0.00085    0.02018
----------------------------------------------

. ineqdeco pcap_inc07, by(codur)


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 29.901    6.709    0.224    6.294    3.015    0.479

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

----------------------------------------------------------------------
 All obs |    GE(-1)      GE(0)      GE(1)      GE(2)       Gini
----------+-----------------------------------------------------------
         | 170.95215    0.99848    0.84086    2.13149    0.64821
----------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

----------------------------------------------
 All obs |    A(0.5)       A(1)       A(2)
----------+-----------------------------------
         |   0.35537    0.63156    0.99708
----------------------------------------------

Subgroup summary statistics, for each subgroup k = 1,...,K:


-------------------------------------------------------------------------------
   codur |  Pop. share       Mean   Rel.mean  Income share    log(mean)
----------+--------------------------------------------------------------------
       0 |    0.33660    1.88e+03    0.68328     0.22999      7.53914
       1 |    0.66340    3.19e+03    1.16070     0.77001      8.06901
-------------------------------------------------------------------------------

Subgroup indices: GE_k(a) and Gini_k

----------------------------------------------------------------------
   codur |    GE(-1)      GE(0)      GE(1)      GE(2)       Gini
----------+-----------------------------------------------------------
       0 | 119.24039    1.07890    1.10991    5.86941    0.68178
       1 | 196.27199    0.91345    0.72523    1.32438    0.62031
----------------------------------------------------------------------

Within-group inequality, GE_W(a)

----------------------------------------------------------
 All obs |    GE(-1)      GE(0)      GE(1)      GE(2)
----------+-----------------------------------------------
         | 170.92006    0.96914    0.81370    2.10604
----------------------------------------------------------
```

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.03209	0.02933	0.02716	0.02545

Subgroup Atkinson indices, A_k(e)

codur	A(0.5)	A(1)	A(2)
0	0.40412	0.66003	0.99582
1	0.32291	0.59886	0.99746

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.34159	0.61293	0.99708

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.02093	0.04813	0.00025

. ineqdeco pcap_inc07, by(codrgn1)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
29.901	6.709	0.224	6.294	3.015	0.479

Generalized Entropy indices GE(a), where a = income difference
sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	170.95215	0.99848	0.84086	2.13149	0.64821

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)

	0.35537	0.63156	0.99708

Subgroup summary statistics, for each subgroup k = 1,...,K:

codrgn1	Pop. share	Mean	Rel.mean	Income share	log(mean)
1	0.10876	3.85e+03	1.39778	0.15202	8.25487
2	0.11099	2.06e+03	0.74931	0.08316	7.63138
3	0.05990	3.50e+03	1.27177	0.07618	8.16039
4	0.08914	2.64e+03	0.95982	0.08556	7.87898
5	0.15215	2.47e+03	0.89772	0.13659	7.81209
6	0.11557	2.51e+03	0.91058	0.10523	7.82631
7	0.20506	3.31e+03	1.20382	0.24686	8.10549
8	0.07986	1.96e+03	0.71362	0.05699	7.58258
9	0.07857	2.01e+03	0.73066	0.05741	7.60618

Subgroup indices: GE_k(a) and Gini_k

codrgn1	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	74.47543	0.71044	0.63933	1.03346	0.59011
2	143.52690	1.16907	0.95435	2.10011	0.68804
3	157.53886	1.04160	0.89022	1.69232	0.67430
4	311.85660	1.25296	0.95408	2.79775	0.66844
5	199.18884	0.98824	0.78969	1.41577	0.64170
6	175.83395	1.02243	1.08821	7.21938	0.65458
7	154.30862	0.82873	0.70974	1.27532	0.61128
8	104.12194	0.83967	0.68161	1.08134	0.60732
9	125.31017	1.09689	0.91910	1.73893	0.68069

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	170.92610	0.97280	0.81519	2.10547

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.02605	0.02567	0.02566	0.02602

Subgroup Atkinson indices, A_k(e)

codrgn1	A(0.5)	A(1)	A(2)

```
----------+-----------------------------------
       1 |   0.28430     0.50857     0.99333
       2 |   0.40194     0.68934     0.99653
       3 |   0.38004     0.64711     0.99684
       4 |   0.39651     0.71434     0.99840
       5 |   0.34546     0.62777     0.99750
       6 |   0.38174     0.64028     0.99716
       7 |   0.31054     0.56340     0.99677
       8 |   0.30686     0.56815     0.99522
       9 |   0.39001     0.66609     0.99603
----------------------------------------------

Within-group inequality, A_W(e)

----------------------------------------------
 All obs |    A(0.5)       A(1)        A(2)
----------+-----------------------------------
         |   0.34342     0.60788     0.99638
----------------------------------------------

Between-group inequality, A_B(e)

----------------------------------------------
 All obs |    A(0.5)       A(1)        A(2)
----------+-----------------------------------
         |   0.01820     0.06039     0.19411
----------------------------------------------

. restore

. log close
      log:  C:\Users\Mulugeta\Desktop\STATA WTL\scenario-11.smcl
  log type:  smcl
 closed on:  22 Nov 2010, 21:28:36
-------------------------------------------------------------------------------------------------------------------

.
end of do-file

.
```

Annexure 2: Simulation result of Scenario II

```
  ___  ____  ____  ____  ____ tm
 /__    /   ____/   /   ____/
___/   /   /___/   /   /___/   10.1   Copyright 1984-2008
  Statistics/Data Analysis            StataCorp
                                      4905 Lakeway Drive
     Special Edition                  College Station, Texas 77845 USA
                                      800-STATA-PC        http://www.stata.com
                                      979-696-4600        stata@stata.com
                                      979-696-4601 (fax)

70-user Stata for Windows (network) perpetual license:
       Serial number:  81910541205
         Licensed to:  Commerce Faculty
                       University of Cape Town

Notes:
      1.  (/m# option or -set memory-) 10.00 MB allocated to data
      2.  (/v# option or -set maxvar-) 5000 maximum variables
      3.  New update available; type -update all-

. do "C:\Users\Mulugeta\AppData\Local\Temp\STD09000000.tmp"

. log using scenario-22
------------------------------------------------------------------------------------------------------------------
       log:  C:\Users\Mulugeta\Desktop\STATA WTL\scenario-22.smcl
  log type:  smcl
 opened on:  22 Nov 2010, 21:35:08

. set memory 500m

Current memory allocation

                    current                                 memory usage
    settable          value     description                 (1M = 1024k)
    --------------------------------------------------------------------
    set maxvar         5000     max. variables allowed           1.909M
    set memory         500M     max. data space                500.000M
    set matsize         400     max. RHS vars in models          1.254M
                                                            -----------
                                                               503.163M

. adopath+ "C:\SAMOD\TOOLS\Stata tools"
  [1]  (UPDATES)   "C:\Users\Mulugeta\Desktop\STATA WTL\ado\updates/"
  [2]  (BASE)      "C:\Users\Mulugeta\Desktop\STATA WTL\ado\base/"
  [3]  (SITE)      "C:\Users\Mulugeta\Desktop\STATA WTL\ado\site/"
  [4]              "."
  [5]  (PERSONAL)  "c:\ado\personal/"
  [6]  (PLUS)      "c:\ado\plus/"
  [7]  (OLDPLACE)  "c:\ado/"
  [8]              "C:\SAMOD\TOOLS\Stata tools"

. insheet using "C:\SAMOD\Output\sa_2008&s2output_ext_std_sa.txt"
(71 vars, 99684 obs)
```

```
. n_ben co_bch, label ( "CSG" ) takeup
Total number of CSG recipients = 9938563: take-up rate = 100%

. total_exp co_bch, label ( "CSG" )
Total per annum expenditure on CSG = 25045179320

. bys cohhid: egen hh_inc07 = sum(std_dispy)

. bys cohhid: gen nHHmem = _N

. gen pcap_inc07= hh_inc07/nHHmem

. replace pcap_inc07 = 0.1 if pcap_inc07 <=0
(299 real changes made)

. gen n_ch_in_hh=0

. forvalues n=1(1)25{
  2. bys cohhid: replace n_ch_in_hh=n_ch_in_hh+1 if codag[`n']<18
  3. }
(305 real changes made)
(7936 real changes made)
(32925 real changes made)
(42627 real changes made)
(42956 real changes made)
(36977 real changes made)
(29050 real changes made)
(21913 real changes made)
(15838 real changes made)
(11396 real changes made)
(6644 real changes made)
(4653 real changes made)
(3194 real changes made)
(2210 real changes made)
(1569 real changes made)
(1182 real changes made)
(897 real changes made)
(555 real changes made)
(490 real changes made)
(319 real changes made)
(199 real changes made)
(115 real changes made)
(71 real changes made)
(25 real changes made)
(25 real changes made)

. gen anydepch=0

. replace anydepch=1 if n_ch_in_hh>0
(82655 real changes made)

.
. *POVDECO
.
. *FOR TOTAL POPULATION
```

```
.
. povdeco pcap_inc07, pl(450)

Total number of observations = 99684
Weighted total no. of observations = 99684
Number of observations poor = 48038
Weighted no. of obs poor = 48038
Mean of pcap_inc07 amongst the poor =   261.620
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   188.380

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |       a=0        a=1        a=2
----------+----------------------------------
          |   0.48190    0.20174    0.11145
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

. preserve

. keep if anydepch==1
(17029 observations deleted)

.
. *FOR PEOPLE IN HHOLDS WITH CHILDREN
.
. povdeco pcap_inc07, pl(450)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 44469
Weighted no. of obs poor = 44469
Mean of pcap_inc07 amongst the poor =   265.624
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   184.376

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |       a=0        a=1        a=2
----------+----------------------------------
          |   0.53801    0.22044    0.11784
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

. povdeco pcap_inc07, pl(450) by(codrc)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 44469
Weighted no. of obs poor = 44469
Mean of pcap_inc07 amongst the poor =   265.624
```

Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 184.376

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.53801	0.22044	0.11784

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrc	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.82662	644.80859	263.64771	186.35233
2	0.11393	1.22e+03	292.81454	157.18544
3	0.01798	2.85e+03	362.22302	87.77695
4	0.04022	6.25e+03	263.19019	186.80980
5	0.00126	2.48e+03	249.87308	200.12695

Subgroup FGT index estimates, FGT(a)

codrc	a=0	a=1	a=2
1	0.60885	0.25213	0.13533
2	0.28311	0.09889	0.04911
3	0.07201	0.01405	0.00495
4	0.02016	0.00837	0.00482
5	0.28846	0.12829	0.07285

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrc	a=0	a=1	a=2
1	0.93546	0.94549	0.94934
2	0.05995	0.05111	0.04748
3	0.00241	0.00115	0.00075
4	0.00151	0.00153	0.00164
5	0.00067	0.00073	0.00078

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codrc	a=0	a=1	a=2

```
----------+-----------------------------------
       1 |   1.13167    1.14380    1.14847
       2 |   0.52621    0.44861    0.41677
       3 |   0.13384    0.06372    0.04199
       4 |   0.03746    0.03796    0.04088
       5 |   0.53617    0.58197    0.61825
----------------------------------------------

. povdeco pcap_inc07, pl(450) by(codgn)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 44469
Weighted no. of obs poor = 44469
Mean of pcap_inc07 amongst the poor =   265.624
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   184.376

Foster-Greer-Thorbecke poverty indices, FGT(a)

----------------------------------------------
  All obs |      a=0        a=1        a=2
----------+-----------------------------------
          |  0.53801    0.22044    0.11784
----------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup
-------------------------

Summary statistics for subgroup k = 1,...,K

----------------------------------------------------------------------
    codgn |  Pop. share        Mean      Mean|poor  Mean gap|poor
----------+-----------------------------------------------------------
        0 |     0.54342   936.86847    266.43140     183.56862
        1 |     0.45658    1.03e+03    264.61896     185.38103
----------------------------------------------------------------------

Subgroup FGT index estimates, FGT(a)

----------------------------------------------
    codgn |      a=0        a=1        a=2
----------+-----------------------------------
        0 |  0.54874    0.22385    0.11903
        1 |  0.52524    0.21638    0.11642
----------------------------------------------

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

----------------------------------------------
    codgn |      a=0        a=1        a=2
----------+-----------------------------------
        0 |  0.55425    0.55182    0.54891
        1 |  0.44575    0.44818    0.45109
```

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codgn	a=0	a=1	a=2
0	1.01994	1.01547	1.01012
1	0.97627	0.98159	0.98796

. povdeco pcap_inc07, pl(450) by(codur)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 44469
Weighted no. of obs poor = 44469
Mean of pcap_inc07 amongst the poor = 265.624
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 184.376

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.53801	0.22044	0.11784

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codur	Pop. share	Mean	Mean|poor	Mean gap|poor
0	0.50359	512.43481	262.33917	187.66080
1	0.49641	1.45e+03	271.94080	178.05922

Subgroup FGT index estimates, FGT(a)

codur	a=0	a=1	a=2
0	0.70291	0.29313	0.15556
1	0.37072	0.14669	0.07957

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

----
codur | a=0 a=1 a=2

0	0.65794	0.66966	0.66479
1	0.34206	0.33034	0.33521

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codur	a=0	a=1	a=2
0	1.30651	1.32978	1.32011
1	0.68906	0.66545	0.67527

. povdeco pcap_inc07, pl(450) by(codrgn1)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 44469
Weighted no. of obs poor = 44469
Mean of pcap_inc07 amongst the poor = 265.624
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 184.376

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.53801	0.22044	0.11784

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrgn1	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.09368	1.58e+03	303.52234	146.47766
2	0.15370	713.51691	256.56708	193.43292
3	0.04213	1.22e+03	278.36929	171.63072
4	0.07592	937.68341	245.73401	204.26598
5	0.19721	810.53387	265.38095	184.61906
6	0.09594	884.57361	267.61658	182.38344
7	0.11271	1.62e+03	273.96426	176.03574
8	0.09171	780.52411	279.24332	170.75668
9	0.13702	716.49036	262.26990	187.73012

Subgroup FGT index estimates, FGT(a)

```
 codrgn1 |       a=0        a=1        a=2
----------+-----------------------------------
       1 |   0.22924    0.07462    0.03620
       2 |   0.65893    0.28324    0.15470
       3 |   0.49770    0.18982    0.09831
       4 |   0.61817    0.28060    0.16170
       5 |   0.58914    0.24170    0.12663
       6 |   0.52661    0.21343    0.11388
       7 |   0.31462    0.12308    0.06552
       8 |   0.57058    0.21651    0.11043
       9 |   0.67779    0.28276    0.15211
----------------------------------------------

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

----------------------------------------------
 codrgn1 |       a=0        a=1        a=2
----------+-----------------------------------
       1 |   0.03992    0.03171    0.02878
       2 |   0.18824    0.19749    0.20178
       3 |   0.03897    0.03628    0.03514
       4 |   0.08723    0.09664    0.10418
       5 |   0.21595    0.21623    0.21193
       6 |   0.09391    0.09289    0.09272
       7 |   0.06591    0.06293    0.06267
       8 |   0.09726    0.09007    0.08594
       9 |   0.17261    0.17575    0.17686
----------------------------------------------

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

----------------------------------------------
 codrgn1 |       a=0        a=1        a=2
----------+-----------------------------------
       1 |   0.42609    0.33851    0.30721
       2 |   1.22475    1.28491    1.31281
       3 |   0.92508    0.86113    0.83426
       4 |   1.14899    1.27294    1.37222
       5 |   1.09504    1.09648    1.07465
       6 |   0.97881    0.96823    0.96645
       7 |   0.58479    0.55833    0.55603
       8 |   1.06054    0.98220    0.93711
       9 |   1.25982    1.28273    1.29084
----------------------------------------------

. restore

. preserve

. keep if anydepch==0
(82655 observations deleted)

.
. *FOR PEOPLE IN HHOLDS WITHOUT CHILDREN
.
. povdeco pcap_inc07, pl(450)
```

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor = 211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

. povdeco pcap_inc07, pl(450) by(codrc)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor = 211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrc	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.73005	1.58e+03	210.21771	239.78230
2	0.10194	2.06e+03	242.30667	207.69331
3	0.02872	4.25e+03	7.09333	442.90668
4	0.13735	9.09e+03	145.68300	304.31702
5	0.00194	7.48e+03	0.00000	0.00000

Subgroup FGT index estimates, FGT(a)

codrc	a=0	a=1	a=2
1	0.26754	0.14256	0.10396
2	0.13076	0.06035	0.03791
3	0.01227	0.01208	0.01190
4	0.00428	0.00289	0.00269
5	0.00000	0.00000	0.00000

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrc	a=0	a=1	a=2
1	0.93191	0.93785	0.94313
2	0.06360	0.05544	0.04803
3	0.00168	0.00313	0.00425
4	0.00280	0.00358	0.00459
5	0.00000	0.00000	0.00000

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codrc	a=0	a=1	a=2
1	1.27651	1.28465	1.29187
2	0.62391	0.54386	0.47116
3	0.05854	0.10883	0.14787
4	0.02040	0.02605	0.03344
5	0.00000	0.00000	0.00000

. povdeco pcap_inc07, pl(450) by(codgn)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor = 211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

```
---------------------------------------------------------------------
    codgn |   Pop. share         Mean      Mean|poor  Mean gap|poor
----------+----------------------------------------------------------
        0 |     0.43485      2.64e+03     217.01289     232.98711
        1 |     0.56515      2.84e+03     207.46808     242.53192
---------------------------------------------------------------------
```

Subgroup FGT index estimates, FGT(a)

```
---------------------------------------------
    codgn |      a=0        a=1        a=2
----------+----------------------------------
        0 |   0.21553    0.11159    0.07955
        1 |   0.20501    0.11049    0.08118
---------------------------------------------
```

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

```
---------------------------------------------
    codgn |      a=0        a=1        a=2
----------+----------------------------------
        0 |   0.44718    0.43728    0.42988
        1 |   0.55282    0.56272    0.57012
---------------------------------------------
```

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

```
---------------------------------------------
    codgn |      a=0        a=1        a=2
----------+----------------------------------
        0 |   1.02837    1.00560    0.98858
        1 |   0.97817    0.99569    1.00879
---------------------------------------------
```


. povdeco pcap_inc07, pl(450) by(codur)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor =   211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

```
---------------------------------------------
  All obs |      a=0        a=1        a=2
----------+----------------------------------
          |   0.20958    0.11097    0.08047
---------------------------------------------
```

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codur	Pop. share	Mean	Mean|poor	Mean gap|poor
0	0.33660	1.88e+03	207.03867	242.96133
1	0.66340	3.19e+03	216.30682	233.69318

Subgroup FGT index estimates, FGT(a)

codur	a=0	a=1	a=2
0	0.30705	0.16578	0.11897
1	0.16013	0.08316	0.06094

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codur	a=0	a=1	a=2
0	0.49314	0.50286	0.49764
1	0.50686	0.49714	0.50236

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codur	a=0	a=1	a=2
0	1.46504	1.49392	1.47843
1	0.76404	0.74939	0.75725

. povdeco pcap_inc07, pl(450) by(codrgn1)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor =   211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrgn1	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.10876	3.85e+03	246.00023	203.99977
2	0.11099	2.06e+03	198.63673	251.36328
3	0.05990	3.50e+03	241.39166	208.60832
4	0.08914	2.64e+03	181.88986	268.11014
5	0.15215	2.47e+03	208.98218	241.01782
6	0.11557	2.51e+03	215.14168	234.85832
7	0.20506	3.31e+03	237.92213	212.07785
8	0.07986	1.96e+03	224.40860	225.59142
9	0.07857	2.01e+03	196.53404	253.46596

Subgroup FGT index estimates, FGT(a)

codrgn1	a=0	a=1	a=2
1	0.07127	0.03231	0.02292
2	0.32169	0.17969	0.13106
3	0.19314	0.08953	0.05874
4	0.28722	0.17113	0.13292
5	0.21459	0.11493	0.08424
6	0.22713	0.11854	0.08563
7	0.13746	0.06478	0.04435
8	0.23456	0.11759	0.08380
9	0.29447	0.16586	0.12174

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrgn1	a=0	a=1	a=2
1	0.03699	0.03167	0.03098
2	0.17036	0.17972	0.18077
3	0.05520	0.04833	0.04372
4	0.12216	0.13747	0.14724
5	0.15579	0.15759	0.15927
6	0.12525	0.12346	0.12298
7	0.13449	0.11971	0.11301
8	0.08938	0.08463	0.08316
9	0.11040	0.11744	0.11887

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

```
---------------------------------------------
 codrgn1 |      a=0        a=1        a=2
----------+----------------------------------
       1 |   0.34008    0.29117    0.28485
       2 |   1.53492    1.61930    1.62872
       3 |   0.92153    0.80683    0.72989
       4 |   1.37043    1.54210    1.65180
       5 |   1.02388    1.03572    1.04678
       6 |   1.08374    1.06825    1.06417
       7 |   0.65586    0.58378    0.55109
       8 |   1.11917    1.05964    1.04131
       9 |   1.40502    1.49467    1.51284
---------------------------------------------

. restore

.
. *INEQDECO
.
. *FOR TOTAL POPULATION
.
. ineqdeco pcap_inc07


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 17.742    6.441    0.363    3.781    2.209    0.584

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

---------------------------------------------------------------------
 All obs |    GE(-1)       GE(0)       GE(1)       GE(2)       Gini
----------+----------------------------------------------------------
         |  21.40923    0.83866    0.95793    3.28711    0.65810
---------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

---------------------------------------------
 All obs |    A(0.5)       A(1)        A(2)
----------+----------------------------------
         |   0.36210    0.56771    0.97718
---------------------------------------------

. preserve

. keep if anydepch==1
(17029 observations deleted)

.
. *FOR PEOPLE IN HHOLDS WITH CHILDREN
.
```

```
. ineqdeco pcap_inc07


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 12.586    5.053    0.401    3.146    1.971    0.626

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

---------------------------------------------------------------------------
  All obs |    GE(-1)       GE(0)       GE(1)       GE(2)       Gini
----------+----------------------------------------------------------------
          |  7.12181     0.69322     0.85223     3.04218     0.61668
---------------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

-------------------------------------------------
  All obs |    A(0.5)        A(1)        A(2)
----------+--------------------------------------
          |  0.31943     0.50004     0.93440
-------------------------------------------------

. ineqdeco pcap_inc07, by(codrc)


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 12.586    5.053    0.401    3.146    1.971    0.626

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

---------------------------------------------------------------------------
  All obs |    GE(-1)       GE(0)       GE(1)       GE(2)       Gini
----------+----------------------------------------------------------------
          |  7.12181     0.69322     0.85223     3.04218     0.61668
---------------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

-------------------------------------------------
  All obs |    A(0.5)        A(1)        A(2)
----------+--------------------------------------
          |  0.31943     0.50004     0.93440
-------------------------------------------------

Subgroup summary statistics, for each subgroup k = 1,...,K:


-------------------------------------------------------------------------------------
```

codrc	Pop. share	Mean	Rel.mean	Income share	log(mean)
1	0.82662	644.80859	0.65972	0.54534	6.46895
2	0.11393	1.22e+03	1.24594	0.14195	7.10478
3	0.01798	2.85e+03	2.91679	0.05244	7.95538
4	0.04022	6.25e+03	6.39250	0.25708	8.74002
5	0.00126	2.48e+03	2.54016	0.00320	7.81712

Subgroup indices: GE_k(a) and Gini_k

codrc	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	5.14726	0.47756	0.61496	2.99071	0.51876
2	4.00928	0.46836	0.47651	0.72404	0.51308
3	19.74904	0.38998	0.37377	0.58886	0.45846
4	0.71576	0.33506	0.34081	0.65291	0.40925
5	1.75327	0.69186	0.50316	0.56525	0.53890

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	6.94313	0.46948	0.51182	2.37165

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.17869	0.22375	0.34041	0.67053

Subgroup Atkinson indices, A_k(e)

codrc	A(0.5)	A(1)	A(2)
1	0.23130	0.37971	0.91146
2	0.21140	0.37397	0.88912
3	0.17173	0.32293	0.97531
4	0.15069	0.28470	0.58873
5	0.25734	0.49935	0.77810

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.20471	0.35187	0.82825

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.14424	0.22860	0.61805

. ineqdeco pcap_inc07, by(codgn)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
12.586	5.053	0.401	3.146	1.971	0.626

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	7.12181	0.69322	0.85223	3.04218	0.61668

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.31943	0.50004	0.93440

Subgroup summary statistics, for each subgroup k = 1,...,K:

codgn	Pop. share	Mean	Rel.mean	Income share	log(mean)
0	0.54342	936.86847	0.95853	0.52088	6.84254
1	0.45658	1.03e+03	1.04935	0.47912	6.93306

Subgroup indices: GE_k(a) and Gini_k

codgn	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
0	6.66399	0.67349	0.83593	2.96670	0.60976
1	7.68269	0.71448	0.86783	3.10273	0.62371

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	7.12080	0.69220	0.85121	3.04116

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.00102	0.00102	0.00102	0.00102

Subgroup Atkinson indices, A_k(e)

codgn	A(0.5)	A(1)	A(2)
0	0.31294	0.49008	0.93021
1	0.32603	0.51055	0.93890

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.31921	0.49989	0.93437

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.00032	0.00030	0.00045

. ineqdeco pcap_inc07, by(codur)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
12.586	5.053	0.401	3.146	1.971	0.626

Generalized Entropy indices GE(a), where a = income difference
sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	7.12181	0.69322	0.85223	3.04218	0.61668

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.31943	0.50004	0.93440

Subgroup summary statistics, for each subgroup k = 1,...,K:

codur	Pop. share	Mean	Rel.mean	Income share	log(mean)
0	0.50359	512.43481	0.52429	0.26402	6.23917
1	0.49641	1.45e+03	1.48259	0.73598	7.27868

Subgroup indices: GE_k(a) and Gini_k

codur	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
0	3.03984	0.40801	0.61394	4.21521	0.47881
1	12.10862	0.72129	0.77557	2.14811	0.61536

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	6.97414	0.56353	0.73290	2.92740

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.14767	0.12969	0.11934	0.11479

Subgroup Atkinson indices, A_k(e)

codur	A(0.5)	A(1)	A(2)
0	0.21218	0.33503	0.85875
1	0.31210	0.51388	0.96034

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.28572	0.46666	0.93352

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.04719	0.06259	0.01320

. ineqdeco pcap_inc07, by(codrgn1)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
12.586	5.053	0.401	3.146	1.971	0.626

Generalized Entropy indices GE(a), where a = income difference
sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	7.12181	0.69322	0.85223	3.04218	0.61668

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.31943	0.50004	0.93440

Subgroup summary statistics, for each subgroup k = 1,...,K:

codrgn1	Pop. share	Mean	Rel.mean	Income share	log(mean)
1	0.09368	1.58e+03	1.61504	0.15129	7.36425
2	0.15370	713.51691	0.73002	0.11220	6.57021
3	0.04213	1.22e+03	1.25240	0.05276	7.10995
4	0.07592	937.68341	0.95937	0.07283	6.84341
5	0.19721	810.53387	0.82928	0.16354	6.69769
6	0.09594	884.57361	0.90503	0.08683	6.78511
7	0.11271	1.62e+03	1.65795	0.18687	7.39048
8	0.09171	780.52411	0.79857	0.07323	6.65997
9	0.13702	716.49036	0.73306	0.10044	6.57436

Subgroup indices: GE_k(a) and Gini_k

codrgn1	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	14.13493	0.57173	0.60262	1.04038	0.56242
2	2.62882	0.61822	0.77127	2.03821	0.58738
3	13.59032	0.79152	0.95289	3.10737	0.64984
4	17.08904	0.84997	1.15383	7.24197	0.66612
5	3.78901	0.60927	0.77139	2.19749	0.58838
6	1.00295	0.58335	0.64913	1.23012	0.57274
7	2.46077	0.73049	0.84417	2.63526	0.62472
8	7.21495	0.53764	0.65747	1.50135	0.55271
9	10.10324	0.65107	0.97763	7.49114	0.59707

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	7.07439	0.64341	0.79863	2.98302

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.04743	0.04981	0.05360	0.05917

Subgroup Atkinson indices, A_k(e)

codrgn1	A(0.5)	A(1)	A(2)
1	0.25606	0.43545	0.96584
2	0.29347	0.46110	0.84020
3	0.35478	0.54684	0.96451
4	0.38599	0.57257	0.97157
5	0.29212	0.45625	0.88342
6	0.26802	0.44197	0.66732
7	0.32518	0.51833	0.83113
8	0.25764	0.41587	0.93519
9	0.31973	0.47851	0.95284

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.30129	0.47654	0.88397

Between-group inequality, A_B(e)

```
---------------------------------------------
 All obs |    A(0.5)       A(1)       A(2)
----------+----------------------------------
        |   0.02595    0.04489    0.43463
---------------------------------------------
```

```
. restore

. preserve

. keep if anydepch==0
(82655 observations deleted)

.
. *FOR PEOPLE IN HHOLDS WITHOUT CHILDREN
.
. ineqdeco pcap_inc07
```

Percentile ratios for distribution of pcap_inc07: all valid obs.

```
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 29.901    6.709    0.224    6.294    3.015    0.479
```

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

```
---------------------------------------------------------------------
 All obs |    GE(-1)      GE(0)      GE(1)      GE(2)       Gini
----------+----------------------------------------------------------
        | 170.95215    0.99848    0.84086    2.13149    0.64821
---------------------------------------------------------------------
```

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

```
---------------------------------------------
 All obs |    A(0.5)       A(1)       A(2)
----------+----------------------------------
        |   0.35537    0.63156    0.99708
---------------------------------------------
```

```
. ineqdeco pcap_inc07, by(codrc)
```

Percentile ratios for distribution of pcap_inc07: all valid obs.

```
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 29.901    6.709    0.224    6.294    3.015    0.479
```

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	170.95215	0.99848	0.84086	2.13149	0.64821

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.35537	0.63156	0.99708

Subgroup summary statistics, for each subgroup k = 1,...,K:

codrc	Pop. share	Mean	Rel.mean	Income share	log(mean)
1	0.73005	1.58e+03	0.57547	0.42012	7.36741
2	0.10194	2.06e+03	0.74866	0.07632	7.63052
3	0.02872	4.25e+03	1.54322	0.04431	8.35386
4	0.13735	9.09e+03	3.30514	0.45397	9.11547
5	0.00194	7.48e+03	2.71962	0.00527	8.92048

Subgroup indices: GE_k(a) and Gini_k

codrc	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	127.98327	0.83388	0.62960	1.03477	0.58332
2	19.24066	0.56076	0.52910	0.91403	0.53316
3	176.11238	0.60167	0.53478	0.93418	0.53699
4	59.18211	0.43629	0.43411	0.87801	0.47408
5	1.06869	0.52585	0.42061	0.47096	0.49866

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	170.71930	0.74416	0.52788	1.69045

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.23283	0.25431	0.31298	0.44104

Subgroup Atkinson indices, A_k(e)

codrc	A(0.5)	A(1)	A(2)
1	0.28866	0.56564	0.99611
2	0.23486	0.42923	0.97467
3	0.23745	0.45210	0.99717
4	0.19062	0.35357	0.99162
5	0.21088	0.40895	0.68126

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.23737	0.45310	0.99082

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.15473	0.32632	0.68221

. ineqdeco pcap_inc07, by(codgn)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
29.901	6.709	0.224	6.294	3.015	0.479

Generalized Entropy indices GE(a), where a = income difference
sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	170.95215	0.99848	0.84086	2.13149	0.64821

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.35537	0.63156	0.99708

Subgroup summary statistics, for each subgroup k = 1,...,K:

codgn	Pop. share	Mean	Rel.mean	Income share	log(mean)
0	0.43485	2.64e+03	0.95850	0.41680	7.87760
1	0.56515	2.84e+03	1.03193	0.58320	7.95142

Subgroup indices: GE_k(a) and Gini_k

codgn	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
0	137.71481	1.00330	0.88427	2.35943	0.66003
1	198.06570	0.99359	0.80869	1.97438	0.63815

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	170.95148	0.99781	0.84019	2.13083

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.00067	0.00067	0.00066	0.00066

Subgroup Atkinson indices, A_k(e)

codgn	A(0.5)	A(1)	A(2)
0	0.36671	0.63333	0.99638
1	0.34651	0.62975	0.99748

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.35493	0.63124	0.99702

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.00067	0.00085	0.02018

```
. ineqdeco pcap_inc07, by(codur)


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 29.901    6.709    0.224    6.294    3.015    0.479

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

----------------------------------------------------------------------
 All obs |    GE(-1)       GE(0)       GE(1)       GE(2)       Gini
----------+-----------------------------------------------------------
         | 170.95215     0.99848     0.84086     2.13149     0.64821
----------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

----------------------------------------------
 All obs |    A(0.5)       A(1)       A(2)
----------+-----------------------------------
         |   0.35537     0.63156     0.99708
----------------------------------------------

Subgroup summary statistics, for each subgroup k = 1,...,K:


-------------------------------------------------------------------------------
   codur |  Pop. share        Mean     Rel.mean  Income share    log(mean)
----------+--------------------------------------------------------------------
       0 |     0.33660    1.88e+03     0.68328      0.22999      7.53914
       1 |     0.66340    3.19e+03     1.16070      0.77001      8.06901
-------------------------------------------------------------------------------

Subgroup indices: GE_k(a) and Gini_k

----------------------------------------------------------------------
   codur |    GE(-1)       GE(0)       GE(1)       GE(2)       Gini
----------+-----------------------------------------------------------
       0 | 119.24039     1.07890     1.10991     5.86941     0.68178
       1 | 196.27199     0.91345     0.72523     1.32438     0.62031
----------------------------------------------------------------------

Within-group inequality, GE_W(a)

----------------------------------------------------------
 All obs |    GE(-1)       GE(0)       GE(1)       GE(2)
----------+-----------------------------------------------
         | 170.92006     0.96914     0.81370     2.10604
----------------------------------------------------------

Between-group inequality, GE_B(a):
```

```
-----------------------------------------------------------
 All obs |   GE(-1)     GE(0)     GE(1)     GE(2)
----------+-----------------------------------------------
         |  0.03209   0.02933   0.02716   0.02545
-----------------------------------------------------------
```

Subgroup Atkinson indices, A_k(e)

```
-----------------------------------------------
   codur |   A(0.5)      A(1)      A(2)
----------+-----------------------------------
       0 |  0.40412   0.66003   0.99582
       1 |  0.32291   0.59886   0.99746
-----------------------------------------------
```

Within-group inequality, A_W(e)

```
-----------------------------------------------
 All obs |   A(0.5)      A(1)      A(2)
----------+-----------------------------------
         |  0.34159   0.61293   0.99708
-----------------------------------------------
```

Between-group inequality, A_B(e)

```
-----------------------------------------------
 All obs |   A(0.5)      A(1)      A(2)
----------+-----------------------------------
         |  0.02093   0.04813   0.00025
-----------------------------------------------
```

. ineqdeco pcap_inc07, by(codrgn1)

Percentile ratios for distribution of pcap_inc07: all valid obs.

```
-------------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
-------------------------------------------------------------
 29.901    6.709    0.224    6.294    3.015    0.479
```

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

```
-----------------------------------------------------------------------
 All obs |   GE(-1)     GE(0)     GE(1)     GE(2)      Gini
----------+-----------------------------------------------------------
         | 170.95215   0.99848   0.84086   2.13149   0.64821
-----------------------------------------------------------------------
```

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

```
-----------------------------------------------
 All obs |   A(0.5)      A(1)      A(2)
----------+-----------------------------------
         |  0.35537   0.63156   0.99708
-----------------------------------------------
```

Subgroup summary statistics, for each subgroup k = 1,...,K:

codrgn1	Pop. share	Mean	Rel.mean	Income share	log(mean)
1	0.10876	3.85e+03	1.39778	0.15202	8.25487
2	0.11099	2.06e+03	0.74931	0.08316	7.63138
3	0.05990	3.50e+03	1.27177	0.07618	8.16039
4	0.08914	2.64e+03	0.95982	0.08556	7.87898
5	0.15215	2.47e+03	0.89772	0.13659	7.81209
6	0.11557	2.51e+03	0.91058	0.10523	7.82631
7	0.20506	3.31e+03	1.20382	0.24686	8.10549
8	0.07986	1.96e+03	0.71362	0.05699	7.58258
9	0.07857	2.01e+03	0.73066	0.05741	7.60618

Subgroup indices: GE_k(a) and Gini_k

codrgn1	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	74.47543	0.71044	0.63933	1.03346	0.59011
2	143.52690	1.16907	0.95435	2.10011	0.68804
3	157.53886	1.04160	0.89022	1.69232	0.67430
4	311.85660	1.25296	0.95408	2.79775	0.66844
5	199.18884	0.98824	0.78969	1.41577	0.64170
6	175.83395	1.02243	1.08821	7.21938	0.65458
7	154.30862	0.82873	0.70974	1.27532	0.61128
8	104.12194	0.83967	0.68161	1.08134	0.60732
9	125.31017	1.09689	0.91910	1.73893	0.68069

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	170.92610	0.97280	0.81519	2.10547

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.02605	0.02567	0.02566	0.02602

Subgroup Atkinson indices, A_k(e)

codrgn1	A(0.5)	A(1)	A(2)
1	0.28430	0.50857	0.99333

```
        2 |   0.40194    0.68934    0.99653
        3 |   0.38004    0.64711    0.99684
        4 |   0.39651    0.71434    0.99840
        5 |   0.34546    0.62777    0.99750
        6 |   0.38174    0.64028    0.99716
        7 |   0.31054    0.56340    0.99677
        8 |   0.30686    0.56815    0.99522
        9 |   0.39001    0.66609    0.99603
---------------------------------------------

Within-group inequality, A_W(e)

---------------------------------------------
  All obs |    A(0.5)       A(1)       A(2)
----------+----------------------------------
          |   0.34342    0.60788    0.99638
---------------------------------------------

Between-group inequality, A_B(e)

---------------------------------------------
  All obs |    A(0.5)       A(1)       A(2)
----------+----------------------------------
          |   0.01820    0.06039    0.19411
---------------------------------------------

. restore

.
. log close
      log:  C:\Users\Mulugeta\Desktop\STATA WTL\scenario-22.smcl
  log type:  smcl
 closed on:  22 Nov 2010, 21:36:53
-------------------------------------------------------------------------------------------------------------

.
end of do-file

.
```

Annexure 3: Simulation result of Scenario III

```
  ___  ____  ____  ____  ____ tm
 /__    /   ____/   /   ____/
___/   /   /___/   /   /___/   10.1   Copyright 1984-2008
  Statistics/Data Analysis            StataCorp
                                      4905 Lakeway Drive
     Special Edition                  College Station, Texas 77845 USA
                                      800-STATA-PC        http://www.stata.com
                                      979-696-4600        stata@stata.com
                                      979-696-4601 (fax)

70-user Stata for Windows (network) perpetual license:
       Serial number:  81910541205
         Licensed to:  Commerce Faculty
                       University of Cape Town

Notes:
      1.  (/m# option or -set memory-) 10.00 MB allocated to data
      2.  (/v# option or -set maxvar-) 5000 maximum variables
      3.  New update available; type -update all-

. do "C:\Users\Mulugeta\AppData\Local\Temp\STD09000000.tmp"

. log using scenario-3
--------------------------------------------------------------------------------------------------------------------------------
       log:  C:\Users\Mulugeta\Desktop\STATA WTL\scenario-33.smcl
  log type:  smcl
 opened on:  22 Nov 2010, 21:45:08

. set memory 500m

Current memory allocation

                    current                                 memory usage
    settable          value     description                 (1M = 1024k)
    --------------------------------------------------------------------
    set maxvar         5000     max. variables allowed           1.909M
    set memory         500M     max. data space                500.000M
    set matsize         400     max. RHS vars in models          1.254M
                                                            -----------
                                                               503.163M

. adopath+ "C:\SAMOD\TOOLS\Stata tools"
  [1]  (UPDATES)   "C:\Users\Mulugeta\Desktop\STATA WTL\ado\updates/"
  [2]  (BASE)      "C:\Users\Mulugeta\Desktop\STATA WTL\ado\base/"
  [3]  (SITE)      "C:\Users\Mulugeta\Desktop\STATA WTL\ado\site/"
  [4]              "."
  [5]  (PERSONAL)  "c:\ado\personal/"
  [6]  (PLUS)      "c:\ado\plus/"
  [7]  (OLDPLACE)  "c:\ado/"
  [8]              "C:\SAMOD\TOOLS\Stata tools"

. insheet using "C:\SAMOD\Output\sa_2008&s3output_ext_std_sa.txt"
(71 vars, 99684 obs)
```

```
. n_ben co_bch, label ( "CSG" ) takeup
Total number of CSG recipients = 11443619: take-up rate = 100%

. total_exp co_bch, label ( "CSG" )
Total per annum expenditure on CSG = 28837918981

. bys cohhid: egen hh_inc07 = sum(std_dispy)

. bys cohhid: gen nHHmem = _N

. gen pcap_inc07= hh_inc07/nHHmem

. replace pcap_inc07 = 0.1 if pcap_inc07 <=0
(257 real changes made)

. gen n_ch_in_hh=0

. forvalues n=1(1)25{
  2. bys cohhid: replace n_ch_in_hh=n_ch_in_hh+1 if codag[`n']<18
  3. }
(305 real changes made)
(7936 real changes made)
(32925 real changes made)
(42627 real changes made)
(42956 real changes made)
(36977 real changes made)
(29050 real changes made)
(21913 real changes made)
(15838 real changes made)
(11396 real changes made)
(6644 real changes made)
(4653 real changes made)
(3194 real changes made)
(2210 real changes made)
(1569 real changes made)
(1182 real changes made)
(897 real changes made)
(555 real changes made)
(490 real changes made)
(319 real changes made)
(199 real changes made)
(115 real changes made)
(71 real changes made)
(25 real changes made)
(25 real changes made)

. gen anydepch=0

. replace anydepch=1 if n_ch_in_hh>0
(82655 real changes made)

.
. *POVDECO
. *FOR TOTAL POPULATION
.
```

```
. povdeco pcap_inc07, pl(450)

Total number of observations = 99684
Weighted total no. of observations = 99684
Number of observations poor = 47238
Weighted no. of obs poor = 47238
Mean of pcap_inc07 amongst the poor =   269.230
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   180.770

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |       a=0        a=1        a=2
----------+-----------------------------------
          |   0.47388    0.19036    0.10178
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

. preserve

. keep if anydepch==1
(17029 observations deleted)

.
. *FOR PEOPLE IN HHOLDS WITH CHILDREN
.
. povdeco pcap_inc07, pl(450)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 43669
Weighted no. of obs poor = 43669
Mean of pcap_inc07 amongst the poor =   273.929
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   176.071

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |       a=0        a=1        a=2
----------+-----------------------------------
          |   0.52833    0.20672    0.10616
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

. povdeco pcap_inc07, pl(450) by(codrc)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 43669
Weighted no. of obs poor = 43669
Mean of pcap_inc07 amongst the poor =   273.929
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   176.071
```

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.52833	0.20672	0.10616

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrc	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.82662	653.82813	272.26660	177.73340
2	0.11393	1.22e+03	297.24527	152.75473
3	0.01798	2.85e+03	369.61511	80.38490
4	0.04022	6.25e+03	275.72751	174.27248
5	0.00126	2.48e+03	250.87308	199.12695

Subgroup FGT index estimates, FGT(a)

codrc	a=0	a=1	a=2
1	0.59898	0.23658	0.12195
2	0.27100	0.09199	0.04416
3	0.06393	0.01142	0.00341
4	0.02016	0.00781	0.00427
5	0.28846	0.12765	0.07209

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrc	a=0	a=1	a=2
1	0.93716	0.94601	0.94956
2	0.05844	0.05070	0.04739
3	0.00218	0.00099	0.00058
4	0.00153	0.00152	0.00162
5	0.00069	0.00078	0.00085

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codrc	a=0	a=1	a=2

```
        1 |   1.13373    1.14444    1.14873
        2 |   0.51294    0.44501    0.41595
        3 |   0.12100    0.05524    0.03212
        4 |   0.03815    0.03776    0.04024
        5 |   0.54599    0.61748    0.67905
---------------------------------------------

. povdeco pcap_inc07, pl(450) by(codgn)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 43669
Weighted no. of obs poor = 43669
Mean of pcap_inc07 amongst the poor =   273.929
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   176.071

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |       a=0        a=1        a=2
----------+----------------------------------
          |   0.52833    0.20672    0.10616
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup
--------------------------

Summary statistics for subgroup k = 1,...,K

--------------------------------------------------------------------
    codgn |  Pop. share        Mean   Mean|poor  Mean gap|poor
----------+---------------------------------------------------------
        0 |     0.54342   945.18738   274.45047      175.54955
        1 |     0.45658    1.03e+03   273.28067      176.71935
--------------------------------------------------------------------

Subgroup FGT index estimates, FGT(a)

---------------------------------------------
    codgn |       a=0        a=1        a=2
----------+----------------------------------
        0 |   0.53863    0.21012    0.10740
        1 |   0.51607    0.20267    0.10470
---------------------------------------------

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

---------------------------------------------
    codgn |       a=0        a=1        a=2
----------+----------------------------------
        0 |   0.55401    0.55237    0.54972
        1 |   0.44599    0.44763    0.45028
---------------------------------------------
```

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codgn	a=0	a=1	a=2
0	1.01949	1.01647	1.01161
1	0.97680	0.98039	0.98618

. povdeco pcap_inc07, pl(450) by(codur)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 43669
Weighted no. of obs poor = 43669
Mean of pcap_inc07 amongst the poor =   273.929
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   176.071

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.52833	0.20672	0.10616

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codur	Pop. share	Mean	Mean|poor	Mean gap|poor
0	0.50359	522.49988	271.79007	178.20995
1	0.49641	1.46e+03	278.07755	171.92247

Subgroup FGT index estimates, FGT(a)

codur	a=0	a=1	a=2
0	0.69227	0.27415	0.13908
1	0.36202	0.13831	0.07278

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codur	a=0	a=1	a=2

codur	a=0	a=1	a=2
0	0.65985	0.66787	0.65970
1	0.34015	0.33213	0.34030

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codur	a=0	a=1	a=2
0	1.31030	1.32622	1.31001
1	0.68522	0.66907	0.68551

. povdeco pcap_inc07, pl(450) by(codrgn1)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 43669
Weighted no. of obs poor = 43669
Mean of pcap_inc07 amongst the poor = 273.929
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 176.071

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.52833	0.20672	0.10616

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrgn1	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.09368	1.58e+03	305.60199	144.39804
2	0.15370	723.68298	266.25702	183.74298
3	0.04213	1.23e+03	286.20599	163.79401
4	0.07592	945.88251	253.40376	196.59624
5	0.19721	819.19147	273.57401	176.42599
6	0.09594	892.35925	275.86697	174.13304
7	0.11271	1.63e+03	279.63654	170.36345
8	0.09171	789.11243	288.19745	161.80254
9	0.13702	726.55920	272.11084	177.88914

Subgroup FGT index estimates, FGT(a)

codrgn1	a=0	a=1	a=2

1	0.21594	0.06929	0.03265
2	0.64940	0.26516	0.13857
3	0.48765	0.17750	0.08901
4	0.60972	0.26638	0.14823
5	0.57834	0.22674	0.11365
6	0.51803	0.20046	0.10318
7	0.30904	0.11700	0.06020
8	0.56121	0.20179	0.09917
9	0.66711	0.26371	0.13584

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrgn1	a=0	a=1	a=2
1	0.03829	0.03140	0.02881
2	0.18892	0.19715	0.20062
3	0.03888	0.03617	0.03532
4	0.08761	0.09783	0.10600
5	0.21587	0.21631	0.21111
6	0.09407	0.09304	0.09324
7	0.06593	0.06379	0.06391
8	0.09741	0.08952	0.08566
9	0.17301	0.17479	0.17532

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codrgn1	a=0	a=1	a=2
1	0.40872	0.33519	0.30756
2	1.22916	1.28272	1.30527
3	0.92301	0.85865	0.83846
4	1.15406	1.28859	1.39623
5	1.09467	1.09687	1.07053
6	0.98051	0.96972	0.97188
7	0.58494	0.56597	0.56704
8	1.06224	0.97616	0.93412
9	1.26268	1.27571	1.27954


```
. restore

. preserve

. keep if anydepch==0
(82655 observations deleted)

.
. *FOR PEOPLE In HHOLDS WITHOUT CHILDREN
.
. povdeco pcap_inc07, pl(450)
```

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor = 211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

. povdeco pcap_inc07, pl(450) by(codrc)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor = 211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrc	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.73005	1.58e+03	210.21771	239.78230
2	0.10194	2.06e+03	242.30667	207.69331
3	0.02872	4.25e+03	7.09333	442.90668
4	0.13735	9.09e+03	145.68300	304.31702
5	0.00194	7.48e+03	0.00000	0.00000

Subgroup FGT index estimates, FGT(a)

----

codrc	a=0	a=1	a=2
1	0.26754	0.14256	0.10396
2	0.13076	0.06035	0.03791
3	0.01227	0.01208	0.01190
4	0.00428	0.00289	0.00269
5	0.00000	0.00000	0.00000

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrc	a=0	a=1	a=2
1	0.93191	0.93785	0.94313
2	0.06360	0.05544	0.04803
3	0.00168	0.00313	0.00425
4	0.00280	0.00358	0.00459
5	0.00000	0.00000	0.00000

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codrc	a=0	a=1	a=2
1	1.27651	1.28465	1.29187
2	0.62391	0.54386	0.47116
3	0.05854	0.10883	0.14787
4	0.02040	0.02605	0.03344
5	0.00000	0.00000	0.00000

. povdeco pcap_inc07, pl(450) by(codgn)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor = 211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codgn	Pop. share	Mean	Mean|poor	Mean gap|poor
0	0.43485	2.64e+03	217.01289	232.98711
1	0.56515	2.84e+03	207.46808	242.53192

Subgroup FGT index estimates, FGT(a)

codgn	a=0	a=1	a=2
0	0.21553	0.11159	0.07955
1	0.20501	0.11049	0.08118

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codgn	a=0	a=1	a=2
0	0.44718	0.43728	0.42988
1	0.55282	0.56272	0.57012

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codgn	a=0	a=1	a=2
0	1.02837	1.00560	0.98858
1	0.97817	0.99569	1.00879

. povdeco pcap_inc07, pl(450) by(codur)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor = 211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codur	Pop. share	Mean	Mean|poor	Mean gap|poor
0	0.33660	1.88e+03	207.03867	242.96133
1	0.66340	3.19e+03	216.30682	233.69318

Subgroup FGT index estimates, FGT(a)

codur	a=0	a=1	a=2
0	0.30705	0.16578	0.11897
1	0.16013	0.08316	0.06094

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codur	a=0	a=1	a=2
0	0.49314	0.50286	0.49764
1	0.50686	0.49714	0.50236

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codur	a=0	a=1	a=2
0	1.46504	1.49392	1.47843
1	0.76404	0.74939	0.75725

. povdeco pcap_inc07, pl(450) by(codrgn1)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor = 211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)

FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrgn1	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.10876	3.85e+03	246.00023	203.99977
2	0.11099	2.06e+03	198.63673	251.36328
3	0.05990	3.50e+03	241.39166	208.60832
4	0.08914	2.64e+03	181.88986	268.11014
5	0.15215	2.47e+03	208.98218	241.01782
6	0.11557	2.51e+03	215.14168	234.85832
7	0.20506	3.31e+03	237.92213	212.07785
8	0.07986	1.96e+03	224.40860	225.59142
9	0.07857	2.01e+03	196.53404	253.46596

Subgroup FGT index estimates, FGT(a)

codrgn1	a=0	a=1	a=2
1	0.07127	0.03231	0.02292
2	0.32169	0.17969	0.13106
3	0.19314	0.08953	0.05874
4	0.28722	0.17113	0.13292
5	0.21459	0.11493	0.08424
6	0.22713	0.11854	0.08563
7	0.13746	0.06478	0.04435
8	0.23456	0.11759	0.08380
9	0.29447	0.16586	0.12174

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrgn1	a=0	a=1	a=2
1	0.03699	0.03167	0.03098
2	0.17036	0.17972	0.18077
3	0.05520	0.04833	0.04372
4	0.12216	0.13747	0.14724
5	0.15579	0.15759	0.15927
6	0.12525	0.12346	0.12298
7	0.13449	0.11971	0.11301
8	0.08938	0.08463	0.08316
9	0.11040	0.11744	0.11887

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

```
----------------------------------------------
  codrgn1 |       a=0        a=1        a=2
----------+-----------------------------------
        1 |   0.34008    0.29117    0.28485
        2 |   1.53492    1.61930    1.62872
        3 |   0.92153    0.80683    0.72989
        4 |   1.37043    1.54210    1.65180
        5 |   1.02388    1.03572    1.04678
        6 |   1.08374    1.06825    1.06417
        7 |   0.65586    0.58378    0.55109
        8 |   1.11917    1.05964    1.04131
        9 |   1.40502    1.49467    1.51284
----------------------------------------------

. restore

.
. *INEQDECO
. *FOR TOTAL POPULATION
.
. ineqdeco pcap_inc07


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 16.578    6.381    0.385    3.631    2.193    0.604

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

----------------------------------------------------------------------
  All obs |    GE(-1)      GE(0)      GE(1)      GE(2)       Gini
----------+-----------------------------------------------------------
          |  18.61495    0.81305    0.94514    3.24827    0.65275
----------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

----------------------------------------------
  All obs |    A(0.5)       A(1)       A(2)
----------+-----------------------------------
          |   0.35619    0.55650    0.97384
----------------------------------------------

. preserve

. keep if anydepch==1
(17029 observations deleted)

.
. *FOR PEOPLE IN HHOLDS WITH CHILDREN
.
. ineqdeco pcap_inc07
```

```
Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 11.742    4.951    0.422    3.037    1.935    0.637

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

---------------------------------------------------------------------
  All obs |    GE(-1)      GE(0)      GE(1)      GE(2)       Gini
----------+----------------------------------------------------------
          |   4.49747    0.66433    0.83526    2.98599    0.60911
---------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

---------------------------------------------
  All obs |    A(0.5)       A(1)       A(2)
----------+----------------------------------
          |   0.31189    0.48538    0.89995
---------------------------------------------

. ineqdeco pcap_inc07, by(codrc)


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 11.742    4.951    0.422    3.037    1.935    0.637

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

---------------------------------------------------------------------
  All obs |    GE(-1)      GE(0)      GE(1)      GE(2)       Gini
----------+----------------------------------------------------------
          |   4.49747    0.66433    0.83526    2.98599    0.60911
---------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

---------------------------------------------
  All obs |    A(0.5)       A(1)       A(2)
----------+----------------------------------
          |   0.31189    0.48538    0.89995
---------------------------------------------

Subgroup summary statistics, for each subgroup k = 1,...,K:


-----------------------------------------------------------------------------
    codrc |  Pop. share        Mean    Rel.mean  Income share    log(mean)
----------+------------------------------------------------------------------
```

1	0.82662	653.82813	0.66331	0.54830	6.48284
2	0.11393	1.22e+03	1.24223	0.14153	7.11028
3	0.01798	2.85e+03	2.89526	0.05205	7.95644
4	0.04022	6.25e+03	6.33961	0.25495	8.74018
5	0.00126	2.48e+03	2.51903	0.00317	7.81724

Subgroup indices: GE_k(a) and Gini_k

codrc	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	3.41101	0.44980	0.59548	2.90270	0.50842
2	0.68114	0.45115	0.46845	0.71317	0.50840
3	0.56643	0.37664	0.37178	0.58691	0.45733
4	0.67804	0.33302	0.34041	0.65256	0.40905
5	1.74271	0.69039	0.50280	0.56501	0.53874

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	4.32198	0.44424	0.50054	2.32876

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.17549	0.22008	0.33472	0.65724

Subgroup Atkinson indices, A_k(e)

codrc	A(0.5)	A(1)	A(2)
1	0.22274	0.36224	0.87216
2	0.20711	0.36310	0.57668
3	0.17020	0.31384	0.53115
4	0.15034	0.28324	0.57557
5	0.25706	0.49862	0.77706

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.19945	0.34014	0.73667

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.14046	0.22011	0.62006

. ineqdeco pcap_inc07, by(codgn)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
11.742	4.951	0.422	3.037	1.935	0.637

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	4.49747	0.66433	0.83526	2.98599	0.60911

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.31189	0.48538	0.89995

Subgroup summary statistics, for each subgroup k = 1,...,K:

codgn	Pop. share	Mean	Rel.mean	Income share	log(mean)
0	0.54342	945.18738	0.95889	0.52107	6.85138
1	0.45658	1.03e+03	1.04893	0.47893	6.94113

Subgroup indices: GE_k(a) and Gini_k

codgn	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
0	3.72149	0.64486	0.81876	2.90957	0.60203
1	5.48479	0.68531	0.85111	3.04804	0.61632

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)

	4.49647	0.66333	0.83425	2.98499

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.00100	0.00100	0.00100	0.00101

Subgroup Atkinson indices, A_k(e)

codgn	A(0.5)	A(1)	A(2)
0	0.30538	0.47526	0.88156
1	0.31852	0.49607	0.91645

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.31167	0.48523	0.89827

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.00031	0.00030	0.01650

. ineqdeco pcap_inc07, by(codur)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
11.742	4.951	0.422	3.037	1.935	0.637

Generalized Entropy indices GE(a), where a = income difference
sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	4.49747	0.66433	0.83526	2.98599	0.60911

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.31189	0.48538	0.89995

Subgroup summary statistics, for each subgroup k = 1,...,K:

codur	Pop. share	Mean	Rel.mean	Income share	log(mean)
0	0.50359	522.49988	0.53007	0.26694	6.25862
1	0.49641	1.46e+03	1.47672	0.73306	7.28319

Subgroup indices: GE_k(a) and Gini_k

codur	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
0	1.41071	0.37825	0.58931	4.04678	0.46557
1	8.96646	0.70045	0.76613	2.12593	0.61110

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	4.35438	0.53819	0.71893	2.87398

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.14310	0.12613	0.11633	0.11201

Subgroup Atkinson indices, A_k(e)

codur	A(0.5)	A(1)	A(2)
0	0.20224	0.31494	0.73832
1	0.30736	0.50364	0.94718

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)

```
          |   0.27930    0.45327    0.89143
---------------------------------------------
```

Between-group inequality, A_B(e)

```
---------------------------------------------
 All obs |    A(0.5)       A(1)       A(2)
----------+----------------------------------
          |   0.04522    0.05874    0.07849
---------------------------------------------
```

. ineqdeco pcap_inc07, by(codrgn1)

Percentile ratios for distribution of pcap_inc07: all valid obs.

```
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 11.742    4.951    0.422    3.037    1.935    0.637
```

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

```
--------------------------------------------------------------------
 All obs |    GE(-1)      GE(0)      GE(1)      GE(2)       Gini
----------+---------------------------------------------------------
          |   4.49747    0.66433    0.83526    2.98599    0.60911
--------------------------------------------------------------------
```

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

```
---------------------------------------------
 All obs |    A(0.5)       A(1)       A(2)
----------+----------------------------------
          |   0.31189    0.48538    0.89995
---------------------------------------------
```

Subgroup summary statistics, for each subgroup k = 1,...,K:

```
-----------------------------------------------------------------------------
 codrgn1 |  Pop. share        Mean     Rel.mean  Income share     log(mean)
----------+------------------------------------------------------------------
       1 |    0.09368     1.58e+03     1.60774      0.15061       7.36819
       2 |    0.15370    723.68298     0.73417      0.11284       6.58435
       3 |    0.04213     1.23e+03     1.24979      0.05265       7.11634
       4 |    0.07592    945.88251     0.95959      0.07285       6.85212
       5 |    0.19721    819.19147     0.83107      0.16389       6.70832
       6 |    0.09594    892.35925     0.90529      0.08685       6.79387
       7 |    0.11271     1.63e+03     1.64932      0.18589       7.39373
       8 |    0.09171    789.11243     0.80055      0.07342       6.67091
       9 |    0.13702    726.55920     0.73709      0.10099       6.58832
-----------------------------------------------------------------------------
```

Subgroup indices: GE_k(a) and Gini_k

codrgn1	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	9.00032	0.55645	0.59576	1.02983	0.55881
2	1.80480	0.58310	0.74707	1.97413	0.57624
3	4.69050	0.75996	0.93848	3.06365	0.64390
4	10.30040	0.81058	1.13279	7.11146	0.65828
5	0.73794	0.58025	0.75243	2.14553	0.57935
6	0.81297	0.55909	0.63416	1.20366	0.56514
7	2.18128	0.71525	0.83699	2.61605	0.62157
8	4.62872	0.51258	0.64056	1.46351	0.54400
9	8.79776	0.61851	0.95047	7.27714	0.58557

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	4.45123	0.61574	0.78297	2.92832

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.04624	0.04859	0.05229	0.05767

Subgroup Atkinson indices, A_k(e)

codrgn1	A(0.5)	A(1)	A(2)
1	0.25256	0.42676	0.94737
2	0.28310	0.44183	0.78306
3	0.34828	0.53232	0.90367
4	0.37739	0.55540	0.95371
5	0.28388	0.44024	0.59610
6	0.26092	0.42827	0.61919
7	0.32162	0.51093	0.81352
8	0.25018	0.40105	0.90251
9	0.30958	0.46125	0.94622

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.29442	0.46297	0.81263

Between-group inequality, A_B(e)

```
---------------------------------------------
 All obs |    A(0.5)       A(1)       A(2)
----------+-----------------------------------
       |   0.02475    0.04172    0.46604
---------------------------------------------

. restore

. preserve

. keep if anydepch==0
(82655 observations deleted)

.
. *FOR PEOPLE IN HHOLDS WITHOUT CHILDREN
.
. ineqdeco pcap_inc07


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 29.901    6.709    0.224    6.294    3.015    0.479

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

---------------------------------------------------------------------
 All obs |   GE(-1)      GE(0)      GE(1)      GE(2)       Gini
----------+-----------------------------------------------------------
       | 170.95215    0.99848    0.84086    2.13149    0.64821
---------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

---------------------------------------------
 All obs |    A(0.5)       A(1)       A(2)
----------+-----------------------------------
       |   0.35537    0.63156    0.99708
---------------------------------------------

. ineqdeco pcap_inc07, by(codrc)


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 29.901    6.709    0.224    6.294    3.015    0.479

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

---------------------------------------------------------------------
 All obs |   GE(-1)      GE(0)      GE(1)      GE(2)       Gini
```

	170.95215	0.99848	0.84086	2.13149	0.64821

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.35537	0.63156	0.99708

Subgroup summary statistics, for each subgroup k = 1,...,K:

codrc	Pop. share	Mean	Rel.mean	Income share	log(mean)
1	0.73005	1.58e+03	0.57547	0.42012	7.36741
2	0.10194	2.06e+03	0.74866	0.07632	7.63052
3	0.02872	4.25e+03	1.54322	0.04431	8.35386
4	0.13735	9.09e+03	3.30514	0.45397	9.11547
5	0.00194	7.48e+03	2.71962	0.00527	8.92048

Subgroup indices: GE_k(a) and Gini_k

codrc	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	127.98327	0.83388	0.62960	1.03477	0.58332
2	19.24066	0.56076	0.52910	0.91403	0.53316
3	176.11238	0.60167	0.53478	0.93418	0.53699
4	59.18211	0.43629	0.43411	0.87801	0.47408
5	1.06869	0.52585	0.42061	0.47096	0.49866

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	170.71930	0.74416	0.52788	1.69045

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.23283	0.25431	0.31298	0.44104

Subgroup Atkinson indices, A_k(e)

codrc	A(0.5)	A(1)	A(2)
1	0.28866	0.56564	0.99611
2	0.23486	0.42923	0.97467
3	0.23745	0.45210	0.99717
4	0.19062	0.35357	0.99162
5	0.21088	0.40895	0.68126

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.23737	0.45310	0.99082

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.15473	0.32632	0.68221

. ineqdeco pcap_inc07, by(codgn)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
29.901	6.709	0.224	6.294	3.015	0.479

Generalized Entropy indices GE(a), where a = income difference
sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	170.95215	0.99848	0.84086	2.13149	0.64821

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.35537	0.63156	0.99708

Subgroup summary statistics, for each subgroup k = 1,...,K:

codgn	Pop. share	Mean	Rel.mean	Income share	log(mean)

0	0.43485	2.64e+03	0.95850	0.41680	7.87760
1	0.56515	2.84e+03	1.03193	0.58320	7.95142

Subgroup indices: GE_k(a) and Gini_k

codgn	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
0	137.71481	1.00330	0.88427	2.35943	0.66003
1	198.06570	0.99359	0.80869	1.97438	0.63815

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	170.95148	0.99781	0.84019	2.13083

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.00067	0.00067	0.00066	0.00066

Subgroup Atkinson indices, A_k(e)

codgn	A(0.5)	A(1)	A(2)
0	0.36671	0.63333	0.99638
1	0.34651	0.62975	0.99748

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.35493	0.63124	0.99702

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.00067	0.00085	0.02018

. ineqdeco pcap_inc07, by(codur)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
29.901	6.709	0.224	6.294	3.015	0.479

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	170.95215	0.99848	0.84086	2.13149	0.64821

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.35537	0.63156	0.99708

Subgroup summary statistics, for each subgroup k = 1,...,K:

codur	Pop. share	Mean	Rel.mean	Income share	log(mean)
0	0.33660	1.88e+03	0.68328	0.22999	7.53914
1	0.66340	3.19e+03	1.16070	0.77001	8.06901

Subgroup indices: GE_k(a) and Gini_k

codur	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
0	119.24039	1.07890	1.10991	5.86941	0.68178
1	196.27199	0.91345	0.72523	1.32438	0.62031

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	170.92006	0.96914	0.81370	2.10604

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)

```
----------+----------------------------------------------
          |  0.03209    0.02933    0.02716    0.02545
---------------------------------------------------------
```

Subgroup Atkinson indices, A_k(e)

```
---------------------------------------------
    codur |   A(0.5)      A(1)       A(2)
----------+----------------------------------
        0 |  0.40412    0.66003    0.99582
        1 |  0.32291    0.59886    0.99746
---------------------------------------------
```

Within-group inequality, A_W(e)

```
---------------------------------------------
  All obs |   A(0.5)      A(1)       A(2)
----------+----------------------------------
          |  0.34159    0.61293    0.99708
---------------------------------------------
```

Between-group inequality, A_B(e)

```
---------------------------------------------
  All obs |   A(0.5)      A(1)       A(2)
----------+----------------------------------
          |  0.02093    0.04813    0.00025
---------------------------------------------
```

. ineqdeco pcap_inc07, by(codrgn1)

Percentile ratios for distribution of pcap_inc07: all valid obs.

```
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 29.901    6.709    0.224    6.294    3.015    0.479
```

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

```
----------------------------------------------------------------------
  All obs |    GE(-1)     GE(0)      GE(1)      GE(2)       Gini
----------+-----------------------------------------------------------
          | 170.95215    0.99848    0.84086    2.13149    0.64821
----------------------------------------------------------------------
```

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

```
---------------------------------------------
  All obs |   A(0.5)      A(1)       A(2)
----------+----------------------------------
          |  0.35537    0.63156    0.99708
---------------------------------------------
```

Subgroup summary statistics, for each subgroup k = 1,...,K:

codrgn1	Pop. share	Mean	Rel.mean	Income share	log(mean)
1	0.10876	3.85e+03	1.39778	0.15202	8.25487
2	0.11099	2.06e+03	0.74931	0.08316	7.63138
3	0.05990	3.50e+03	1.27177	0.07618	8.16039
4	0.08914	2.64e+03	0.95982	0.08556	7.87898
5	0.15215	2.47e+03	0.89772	0.13659	7.81209
6	0.11557	2.51e+03	0.91058	0.10523	7.82631
7	0.20506	3.31e+03	1.20382	0.24686	8.10549
8	0.07986	1.96e+03	0.71362	0.05699	7.58258
9	0.07857	2.01e+03	0.73066	0.05741	7.60618

Subgroup indices: GE_k(a) and Gini_k

codrgn1	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	74.47543	0.71044	0.63933	1.03346	0.59011
2	143.52690	1.16907	0.95435	2.10011	0.68804
3	157.53886	1.04160	0.89022	1.69232	0.67430
4	311.85660	1.25296	0.95408	2.79775	0.66844
5	199.18884	0.98824	0.78969	1.41577	0.64170
6	175.83395	1.02243	1.08821	7.21938	0.65458
7	154.30862	0.82873	0.70974	1.27532	0.61128
8	104.12194	0.83967	0.68161	1.08134	0.60732
9	125.31017	1.09689	0.91910	1.73893	0.68069

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	170.92610	0.97280	0.81519	2.10547

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.02605	0.02567	0.02566	0.02602

Subgroup Atkinson indices, A_k(e)

codrgn1	A(0.5)	A(1)	A(2)
1	0.28430	0.50857	0.99333
2	0.40194	0.68934	0.99653
3	0.38004	0.64711	0.99684

```
       4 |   0.39651     0.71434     0.99840
       5 |   0.34546     0.62777     0.99750
       6 |   0.38174     0.64028     0.99716
       7 |   0.31054     0.56340     0.99677
       8 |   0.30686     0.56815     0.99522
       9 |   0.39001     0.66609     0.99603
----------------------------------------------

Within-group inequality, A_W(e)

----------------------------------------------
 All obs |    A(0.5)       A(1)       A(2)
----------+-----------------------------------
         |   0.34342     0.60788     0.99638
----------------------------------------------

Between-group inequality, A_B(e)

----------------------------------------------
 All obs |    A(0.5)       A(1)       A(2)
----------+-----------------------------------
         |   0.01820     0.06039     0.19411
----------------------------------------------

. restore

. log close
      log:  C:\Users\Mulugeta\Desktop\STATA WTL\scenario-33.smcl
  log type:  smcl
 closed on:  22 Nov 2010, 21:46:49
------------------------------------------------------------------------------------------------------------------------

.
end of do-file

.
```

Annexure 4: Simulation result of Scenario IV

```
  ___  ____  ____  ____  ____ tm
 /__    /   ____/   /   ____/
___/   /   /___/   /   /___/   10.1   Copyright 1984-2008
  Statistics/Data Analysis            StataCorp
                                      4905 Lakeway Drive
     Special Edition                  College Station, Texas 77845 USA
                                      800-STATA-PC        http://www.stata.com
                                      979-696-4600        stata@stata.com
                                      979-696-4601 (fax)

70-user Stata for Windows (network) perpetual license:
       Serial number:  81910541205
         Licensed to:  Commerce Faculty
                       University of Cape Town

Notes:
      1.  (/m# option or -set memory-) 10.00 MB allocated to data
      2.  (/v# option or -set maxvar-) 5000 maximum variables
      3.  New update available; type -update all-

. do "C:\Users\Mulugeta\AppData\Local\Temp\STD09000000.tmp"

. log using scenario-44
------------------------------------------------------------------------------------------------------------------------------------------
       log:  C:\Users\Mulugeta\Desktop\STATA WTL\scenario-44.smcl
  log type:  smcl
 opened on:  22 Nov 2010, 21:49:05

. set memory 500m

Current memory allocation

                    current                                 memory usage
    settable          value     description                 (1M = 1024k)
    --------------------------------------------------------------------
    set maxvar         5000     max. variables allowed           1.909M
    set memory         500M     max. data space                500.000M
    set matsize         400     max. RHS vars in models          1.254M
                                                            -----------
                                                               503.163M

. adopath+ "C:\SAMOD\TOOLS\Stata tools"
  [1]  (UPDATES)   "C:\Users\Mulugeta\Desktop\STATA WTL\ado\updates/"
  [2]  (BASE)      "C:\Users\Mulugeta\Desktop\STATA WTL\ado\base/"
  [3]  (SITE)      "C:\Users\Mulugeta\Desktop\STATA WTL\ado\site/"
  [4]              "."
  [5]  (PERSONAL)  "c:\ado\personal/"
  [6]  (PLUS)      "c:\ado\plus/"
  [7]  (OLDPLACE)  "c:\ado/"
  [8]              "C:\SAMOD\TOOLS\Stata tools"

. insheet using "C:\SAMOD\Output\sa_2008&s4output_ext_std_sa.txt"
(71 vars, 99684 obs)
```

```
. n_ben co_bch, label ( "CSG" ) takeup
Total number of CSG recipients = 12928605: take-up rate = 100%

. total_exp co_bch, label ( "CSG" )
Total per annum expenditure on CSG = 32580085021

. bys cohhid: egen hh_inc07 = sum(std_dispy)

. bys cohhid: gen nHHmem = _N

. gen pcap_inc07= hh_inc07/nHHmem

. replace pcap_inc07 = 0.1 if pcap_inc07 <=0
(244 real changes made)

. gen n_ch_in_hh=0

. forvalues n=1(1)25{
  2. bys cohhid: replace n_ch_in_hh=n_ch_in_hh+1 if codag[`n']<18
  3. }
(305 real changes made)
(7936 real changes made)
(32925 real changes made)
(42627 real changes made)
(42956 real changes made)
(36977 real changes made)
(29050 real changes made)
(21913 real changes made)
(15838 real changes made)
(11396 real changes made)
(6644 real changes made)
(4653 real changes made)
(3194 real changes made)
(2210 real changes made)
(1569 real changes made)
(1182 real changes made)
(897 real changes made)
(555 real changes made)
(490 real changes made)
(319 real changes made)
(199 real changes made)
(115 real changes made)
(71 real changes made)
(25 real changes made)
(25 real changes made)

. gen anydepch=0

. replace anydepch=1 if n_ch_in_hh>0
(82655 real changes made)

.
. *POVDECO
. *FOR TOTAL POPULATION
.
```

```
. povdeco pcap_inc07, pl(450)

Total number of observations = 99684
Weighted total no. of observations = 99684
Number of observations poor = 46375
Weighted no. of obs poor = 46375
Mean of pcap_inc07 amongst the poor =   275.936
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   174.064

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |       a=0        a=1        a=2
----------+----------------------------------
          |   0.46522    0.17995    0.09338
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

. preserve

. keep if anydepch==1
(17029 observations deleted)

.
. *FOR PEOPLE IN HHOLDS WITH CHILDREN
.
. povdeco pcap_inc07, pl(450)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 42806
Weighted no. of obs poor = 42806
Mean of pcap_inc07 amongst the poor =   281.289
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   168.711

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |       a=0        a=1        a=2
----------+----------------------------------
          |   0.51789    0.19416    0.09603
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

. povdeco pcap_inc07, pl(450) by(codrc)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 42806
Weighted no. of obs poor = 42806
Mean of pcap_inc07 amongst the poor =   281.289
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   168.711
```

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.51789	0.19416	0.09603

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrc	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.82662	662.32153	279.90509	170.09491
2	0.11393	1.23e+03	300.48227	149.51773
3	0.01798	2.86e+03	378.18091	71.81910
4	0.04022	6.25e+03	281.99615	168.00381
5	0.00126	2.49e+03	257.87308	192.12695

Subgroup FGT index estimates, FGT(a)

codrc	a=0	a=1	a=2
1	0.58783	0.22219	0.11029
2	0.26027	0.08648	0.04019
3	0.06393	0.01020	0.00301
4	0.02016	0.00753	0.00385
5	0.28846	0.12316	0.06605

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrc	a=0	a=1	a=2
1	0.93826	0.94595	0.94928
2	0.05726	0.05074	0.04768
3	0.00222	0.00094	0.00056
4	0.00157	0.00156	0.00161
5	0.00070	0.00080	0.00087

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codrc	a=0	a=1	a=2

```
        1 |   1.13506    1.14437    1.14839
        2 |   0.50257    0.44539    0.41849
        3 |   0.12344    0.05255    0.03130
        4 |   0.03892    0.03876    0.04012
        5 |   0.55700    0.63430    0.68775
---------------------------------------------

. povdeco pcap_inc07, pl(450) by(codgn)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 42806
Weighted no. of obs poor = 42806
Mean of pcap_inc07 amongst the poor =   281.289
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   168.711

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |      a=0        a=1        a=2
----------+----------------------------------
          |   0.51789    0.19416    0.09603
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup
-------------------------

Summary statistics for subgroup k = 1,...,K

--------------------------------------------------------------------
    codgn |  Pop. share        Mean     Mean|poor  Mean gap|poor
----------+---------------------------------------------------------
        0 |     0.54342   953.11035    281.68466     168.31531
        1 |     0.45658    1.04e+03    280.79813     169.20187
--------------------------------------------------------------------

Subgroup FGT index estimates, FGT(a)

---------------------------------------------
    codgn |      a=0        a=1        a=2
----------+----------------------------------
        0 |   0.52794    0.19747    0.09720
        1 |   0.50592    0.19023    0.09465
---------------------------------------------

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

---------------------------------------------
    codgn |      a=0        a=1        a=2
----------+----------------------------------
        0 |   0.55396    0.55267    0.55001
        1 |   0.44604    0.44733    0.44999
---------------------------------------------
```

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codgn	a=0	a=1	a=2
0	1.01941	1.01702	1.01214
1	0.97690	0.97974	0.98555

. povdeco pcap_inc07, pl(450) by(codur)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 42806
Weighted no. of obs poor = 42806
Mean of pcap_inc07 amongst the poor = 281.289
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 168.711

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.51789	0.19416	0.09603

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codur	Pop. share	Mean	Mean|poor	Mean gap|poor
0	0.50359	531.59125	280.39444	169.60556
1	0.49641	1.46e+03	283.05270	166.94727

Subgroup FGT index estimates, FGT(a)

codur	a=0	a=1	a=2
0	0.68223	0.25713	0.12518
1	0.35117	0.13028	0.06647

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codur	a=0	a=1	a=2

```
       0 |   0.66339     0.66691     0.65642
       1 |   0.33661     0.33309     0.34358
---------------------------------------------

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

---------------------------------------------
    codur |       a=0         a=1         a=2
----------+----------------------------------
       0 |   1.31733     1.32431     1.30348
       1 |   0.67809     0.67100     0.69213
---------------------------------------------

. povdeco pcap_inc07, pl(450) by(codrgn1)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 42806
Weighted no. of obs poor = 42806
Mean of pcap_inc07 amongst the poor =   281.289
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   168.711

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |       a=0         a=1         a=2
----------+----------------------------------
          |   0.51789     0.19416     0.09603
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup
--------------------------

Summary statistics for subgroup k = 1,...,K

-----------------------------------------------------------------
  codrgn1 |  Pop. share        Mean    Mean|poor  Mean gap|poor
----------+------------------------------------------------------
       1 |     0.09368     1.59e+03   309.96368   140.03630
       2 |     0.15370    732.93988   274.82611   175.17389
       3 |     0.04213     1.24e+03   289.00922   160.99077
       4 |     0.07592    954.68402   261.68658   188.31343
       5 |     0.19721    826.87000   281.03156   168.96844
       6 |     0.09594    899.88007   284.72079   165.27921
       7 |     0.11271     1.63e+03   284.55948   165.44052
       8 |     0.09171    797.47919   293.46686   156.53317
       9 |     0.13702    735.81219   280.94336   169.05666
-----------------------------------------------------------------

Subgroup FGT index estimates, FGT(a)

---------------------------------------------
  codrgn1 |       a=0         a=1         a=2
```

```
----------+----------------------------------
        1 |   0.20586    0.06406    0.02899
        2 |   0.63752    0.24817    0.12431
        3 |   0.46956    0.16799    0.08211
        4 |   0.60287    0.25228    0.13557
        5 |   0.56902    0.21366    0.10309
        6 |   0.51349    0.18860    0.09376
        7 |   0.30185    0.11097    0.05513
        8 |   0.54129    0.18829    0.08920
        9 |   0.65634    0.24657    0.12219
---------------------------------------------

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

---------------------------------------------
  codrgn1 |       a=0        a=1        a=2
----------+----------------------------------
        1 |   0.03724    0.03091    0.02828
        2 |   0.18920    0.19645    0.19896
        3 |   0.03820    0.03645    0.03602
        4 |   0.08838    0.09864    0.10717
        5 |   0.21668    0.21701    0.21168
        6 |   0.09513    0.09319    0.09366
        7 |   0.06569    0.06442    0.06471
        8 |   0.09585    0.08893    0.08518
        9 |   0.17364    0.17400    0.17433
---------------------------------------------

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

---------------------------------------------
  codrgn1 |       a=0        a=1        a=2
----------+----------------------------------
        1 |   0.39751    0.32994    0.30189
        2 |   1.23099    1.27815    1.29446
        3 |   0.90668    0.86519    0.85505
        4 |   1.16409    1.29935    1.41171
        5 |   1.09873    1.10041    1.07342
        6 |   0.99151    0.97135    0.97627
        7 |   0.58284    0.57154    0.57410
        8 |   1.04519    0.96975    0.92883
        9 |   1.26733    1.26993    1.27235
---------------------------------------------

. restore

. preserve

. keep if anydepch==0
(82655 observations deleted)

.
. *FOR PEOPLE IN HHOLDS WITHOUT CHILDREN
.
. povdeco pcap_inc07, pl(450)
```

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor = 211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

. povdeco pcap_inc07, pl(450) by(codrc)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor = 211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrc	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.73005	1.58e+03	210.21771	239.78230
2	0.10194	2.06e+03	242.30667	207.69331
3	0.02872	4.25e+03	7.09333	442.90668
4	0.13735	9.09e+03	145.68300	304.31702
5	0.00194	7.48e+03	0.00000	0.00000

Subgroup FGT index estimates, FGT(a)

codrc	a=0	a=1	a=2
1	0.26754	0.14256	0.10396
2	0.13076	0.06035	0.03791
3	0.01227	0.01208	0.01190
4	0.00428	0.00289	0.00269
5	0.00000	0.00000	0.00000

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrc	a=0	a=1	a=2
1	0.93191	0.93785	0.94313
2	0.06360	0.05544	0.04803
3	0.00168	0.00313	0.00425
4	0.00280	0.00358	0.00459
5	0.00000	0.00000	0.00000

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codrc	a=0	a=1	a=2
1	1.27651	1.28465	1.29187
2	0.62391	0.54386	0.47116
3	0.05854	0.10883	0.14787
4	0.02040	0.02605	0.03344
5	0.00000	0.00000	0.00000

. povdeco pcap_inc07, pl(450) by(codgn)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor =   211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

```
Summary statistics for subgroup k = 1,...,K

---------------------------------------------------------------------
    codgn |    Pop. share          Mean     Mean|poor  Mean gap|poor
----------+----------------------------------------------------------
        0 |      0.43485      2.64e+03    217.01289     232.98711
        1 |      0.56515      2.84e+03    207.46808     242.53192
---------------------------------------------------------------------

Subgroup FGT index estimates, FGT(a)

---------------------------------------------
    codgn |       a=0        a=1        a=2
----------+----------------------------------
        0 |   0.21553    0.11159    0.07955
        1 |   0.20501    0.11049    0.08118
---------------------------------------------

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

---------------------------------------------
    codgn |       a=0        a=1        a=2
----------+----------------------------------
        0 |   0.44718    0.43728    0.42988
        1 |   0.55282    0.56272    0.57012
---------------------------------------------

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

---------------------------------------------
    codgn |       a=0        a=1        a=2
----------+----------------------------------
        0 |   1.02837    1.00560    0.98858
        1 |   0.97817    0.99569    1.00879
---------------------------------------------

. povdeco pcap_inc07, pl(450) by(codur)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor =   211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |       a=0        a=1        a=2
----------+----------------------------------
          |   0.20958    0.11097    0.08047
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap
```

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codur	Pop. share	Mean	Mean|poor	Mean gap|poor
0	0.33660	1.88e+03	207.03867	242.96133
1	0.66340	3.19e+03	216.30682	233.69318

Subgroup FGT index estimates, FGT(a)

codur	a=0	a=1	a=2
0	0.30705	0.16578	0.11897
1	0.16013	0.08316	0.06094

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codur	a=0	a=1	a=2
0	0.49314	0.50286	0.49764
1	0.50686	0.49714	0.50236

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codur	a=0	a=1	a=2
0	1.46504	1.49392	1.47843
1	0.76404	0.74939	0.75725

. povdeco pcap_inc07, pl(450) by(codrgn1)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor = 211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)

FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrgn1	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.10876	3.85e+03	246.00023	203.99977
2	0.11099	2.06e+03	198.63673	251.36328
3	0.05990	3.50e+03	241.39166	208.60832
4	0.08914	2.64e+03	181.88986	268.11014
5	0.15215	2.47e+03	208.98218	241.01782
6	0.11557	2.51e+03	215.14168	234.85832
7	0.20506	3.31e+03	237.92213	212.07785
8	0.07986	1.96e+03	224.40860	225.59142
9	0.07857	2.01e+03	196.53404	253.46596

Subgroup FGT index estimates, FGT(a)

codrgn1	a=0	a=1	a=2
1	0.07127	0.03231	0.02292
2	0.32169	0.17969	0.13106
3	0.19314	0.08953	0.05874
4	0.28722	0.17113	0.13292
5	0.21459	0.11493	0.08424
6	0.22713	0.11854	0.08563
7	0.13746	0.06478	0.04435
8	0.23456	0.11759	0.08380
9	0.29447	0.16586	0.12174

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrgn1	a=0	a=1	a=2
1	0.03699	0.03167	0.03098
2	0.17036	0.17972	0.18077
3	0.05520	0.04833	0.04372
4	0.12216	0.13747	0.14724
5	0.15579	0.15759	0.15927
6	0.12525	0.12346	0.12298
7	0.13449	0.11971	0.11301
8	0.08938	0.08463	0.08316
9	0.11040	0.11744	0.11887

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codrgn1	a=0	a=1	a=2
1	0.34008	0.29117	0.28485
2	1.53492	1.61930	1.62872
3	0.92153	0.80683	0.72989
4	1.37043	1.54210	1.65180
5	1.02388	1.03572	1.04678
6	1.08374	1.06825	1.06417
7	0.65586	0.58378	0.55109
8	1.11917	1.05964	1.04131
9	1.40502	1.49467	1.51284

. restore

.
. *INEQDECO
. *FOR TOTAL POPULATION
.
. ineqdeco pcap_inc07

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
15.579	6.295	0.404	3.536	2.172	0.614

Generalized Entropy indices GE(a), where a = income difference
sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	17.75754	0.79283	0.93353	3.21224	0.64785

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.35098	0.54744	0.97261

. preserve

. keep if anydepch==1
(17029 observations deleted)

.
. *FOR PEOPLE IN HHOLDS WITH CHILDREN
.
. ineqdeco pcap_inc07

```
Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 10.946    4.832    0.441    2.961    1.911    0.645

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

---------------------------------------------------------------------
  All obs |    GE(-1)       GE(0)       GE(1)       GE(2)       Gini
----------+----------------------------------------------------------
          |   3.65372     0.64180     0.81999     2.93439     0.60223
---------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

---------------------------------------------
  All obs |    A(0.5)       A(1)        A(2)
----------+----------------------------------
          |   0.30531     0.47366     0.87963
---------------------------------------------

. ineqdeco pcap_inc07, by(codrc)


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 10.946    4.832    0.441    2.961    1.911    0.645

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

---------------------------------------------------------------------
  All obs |    GE(-1)       GE(0)       GE(1)       GE(2)       Gini
----------+----------------------------------------------------------
          |   3.65372     0.64180     0.81999     2.93439     0.60223
---------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

---------------------------------------------
  All obs |    A(0.5)       A(1)        A(2)
----------+----------------------------------
          |   0.30531     0.47366     0.87963
---------------------------------------------

Subgroup summary statistics, for each subgroup k = 1,...,K:


-----------------------------------------------------------------------------
    codrc |  Pop. share         Mean     Rel.mean  Income share     log(mean)
----------+------------------------------------------------------------------
```

1	0.82662	662.32153	0.66661	0.55103	6.49575
2	0.11393	1.23e+03	1.23877	0.14113	7.11542
3	0.01798	2.86e+03	2.87605	0.05171	7.95772
4	0.04022	6.25e+03	6.29057	0.25298	8.74035
5	0.00126	2.49e+03	2.50318	0.00315	7.81886

Subgroup indices: GE_k(a) and Gini_k

codrc	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	2.75426	0.42836	0.57825	2.82331	0.49909
2	0.62395	0.43970	0.46145	0.70334	0.50436
3	0.55667	0.37327	0.36987	0.58464	0.45607
4	0.64183	0.33125	0.34005	0.65222	0.40885
5	1.62740	0.67745	0.49977	0.56251	0.53737

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	3.48114	0.42507	0.49049	2.28933

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.17257	0.21673	0.32950	0.64506

Subgroup Atkinson indices, A_k(e)

codrc	A(0.5)	A(1)	A(2)
1	0.21539	0.34842	0.84636
2	0.20356	0.35577	0.55514
3	0.16913	0.31152	0.52682
4	0.15005	0.28198	0.56211
5	0.25471	0.49209	0.76497

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.19492	0.33119	0.71657

Between-group inequality, A_B(e)

```
---------------------------------------------
 All obs |     A(0.5)       A(1)       A(2)
----------+-----------------------------------
         |   0.13711    0.21301    0.57530
---------------------------------------------
```

. ineqdeco pcap_inc07, by(codgn)

Percentile ratios for distribution of pcap_inc07: all valid obs.

```
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 10.946    4.832    0.441    2.961    1.911    0.645
```

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

```
---------------------------------------------------------------------
 All obs |    GE(-1)      GE(0)      GE(1)      GE(2)       Gini
----------+-----------------------------------------------------------
         |   3.65372    0.64180    0.81999    2.93439    0.60223
---------------------------------------------------------------------
```

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

```
---------------------------------------------
 All obs |     A(0.5)       A(1)       A(2)
----------+-----------------------------------
         |   0.30531    0.47366    0.87963
---------------------------------------------
```

Subgroup summary statistics, for each subgroup k = 1,...,K:

```
-----------------------------------------------------------------------------
    codgn |  Pop. share         Mean     Rel.mean  Income share     log(mean)
----------+------------------------------------------------------------------
        0 |     0.54342    953.11035      0.95928       0.52129       6.85973
        1 |     0.45658     1.04e+03      1.04846       0.47871       6.94862
-----------------------------------------------------------------------------
```

Subgroup indices: GE_k(a) and Gini_k

```
---------------------------------------------------------------------
    codgn |    GE(-1)      GE(0)      GE(1)      GE(2)       Gini
----------+-----------------------------------------------------------
        0 |   3.02106    0.62267    0.80320    2.85674    0.59496
        1 |   4.45797    0.66242    0.83621    2.99826    0.60966
---------------------------------------------------------------------
```

Within-group inequality, GE_W(a)

```
----------------------------------------------------------
 All obs |    GE(-1)      GE(0)      GE(1)      GE(2)
```

	GE(-1)	GE(0)	GE(1)	GE(2)
	3.65274	0.64082	0.81900	2.93341

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.00098	0.00098	0.00098	0.00099

Subgroup Atkinson indices, A_k(e)

codgn	A(0.5)	A(1)	A(2)
0	0.29874	0.46349	0.85800
1	0.31202	0.48440	0.89915

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.30510	0.47350	0.87770

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.00030	0.00030	0.01576

. ineqdeco pcap_inc07, by(codur)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
10.946	4.832	0.441	2.961	1.911	0.645

Generalized Entropy indices GE(a), where a = income difference
sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	3.65372	0.64180	0.81999	2.93439	0.60223

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.30531	0.47366	0.87963

Subgroup summary statistics, for each subgroup k = 1,...,K:

codur	Pop. share	Mean	Rel.mean	Income share	log(mean)
0	0.50359	531.59125	0.53503	0.26944	6.27588
1	0.49641	1.46e+03	1.47169	0.73056	7.28771

Subgroup indices: GE_k(a) and Gini_k

codur	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
0	1.37970	0.35832	0.56869	3.90312	0.45413
1	6.56917	0.68132	0.75692	2.10394	0.60693

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	3.51445	0.51866	0.70620	2.82473

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.13927	0.12314	0.11378	0.10966

Subgroup Atkinson indices, A_k(e)

codur	A(0.5)	A(1)	A(2)
0	0.19428	0.30115	0.73400
1	0.30280	0.49405	0.92927

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)

	0.27356	0.44208	0.87666

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.04370	0.05660	0.02407

. ineqdeco pcap_inc07, by(codrgn1)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
10.946	4.832	0.441	2.961	1.911	0.645

Generalized Entropy indices GE(a), where a = income difference
sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	3.65372	0.64180	0.81999	2.93439	0.60223

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.30531	0.47366	0.87963

Subgroup summary statistics, for each subgroup k = 1,...,K:

codrgn1	Pop. share	Mean	Rel.mean	Income share	log(mean)
1	0.09368	1.59e+03	1.60134	0.15001	7.37214
2	0.15370	732.93988	0.73769	0.11338	6.59706
3	0.04213	1.24e+03	1.24671	0.05252	7.12180
4	0.07592	954.68402	0.96087	0.07295	6.86138
5	0.19721	826.87000	0.83223	0.16412	6.71765
6	0.09594	899.88007	0.90571	0.08689	6.80226
7	0.11271	1.63e+03	1.64182	0.18505	7.39710
8	0.09171	797.47919	0.80264	0.07361	6.68146
9	0.13702	735.81219	0.74058	0.10147	6.60098

Subgroup indices: GE_k(a) and Gini_k

codrgn1	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	5.91089	0.54322	0.58910	1.01947	0.55531
2	1.71284	0.55604	0.72583	1.91805	0.56604
3	1.09591	0.73936	0.92666	3.02682	0.63909
4	7.21661	0.77888	1.11176	6.97540	0.65055
5	0.68861	0.56105	0.73646	2.10073	0.57163
6	0.74029	0.53957	0.62065	1.17913	0.55824
7	2.00923	0.70011	0.82975	2.59634	0.61837
8	4.61733	0.49401	0.62497	1.42787	0.53583
9	7.52133	0.59123	0.92694	7.08869	0.57561

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	3.60849	0.59426	0.76884	2.87802

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.04523	0.04754	0.05115	0.05638

Subgroup Atkinson indices, A_k(e)

codrgn1	A(0.5)	A(1)	A(2)
1	0.24920	0.41913	0.92201
2	0.27419	0.42653	0.77405
3	0.34318	0.52258	0.68670
4	0.36928	0.54108	0.93520
5	0.27727	0.42939	0.57934
6	0.25470	0.41700	0.59687
7	0.31806	0.50347	0.80074
8	0.24357	0.38983	0.90229
9	0.30087	0.44635	0.93767

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.28838	0.45201	0.78704

Between-group inequality, A_B(e)

```
----------------------------------------------
  All obs |    A(0.5)       A(1)       A(2)
----------+-----------------------------------
          |   0.02379    0.03950    0.43475
----------------------------------------------

. restore

. preserve

. keep if anydepch==0
(82655 observations deleted)

.
. *FOR PEOPLE IN HHOLDS WITHOUT CHILDREN
.
. ineqdeco pcap_inc07


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 29.901    6.709    0.224    6.294    3.015    0.479

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

----------------------------------------------------------------------
  All obs |    GE(-1)       GE(0)       GE(1)       GE(2)       Gini
----------+-----------------------------------------------------------
          | 170.95215     0.99848     0.84086     2.13149     0.64821
----------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

----------------------------------------------
  All obs |    A(0.5)       A(1)       A(2)
----------+-----------------------------------
          |   0.35537    0.63156    0.99708
----------------------------------------------

. ineqdeco pcap_inc07, by(codrc)


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 29.901    6.709    0.224    6.294    3.015    0.479

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

----------------------------------------------------------------------
  All obs |    GE(-1)       GE(0)       GE(1)       GE(2)       Gini
```

	170.95215	0.99848	0.84086	2.13149	0.64821

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.35537	0.63156	0.99708

Subgroup summary statistics, for each subgroup k = 1,...,K:

codrc	Pop. share	Mean	Rel.mean	Income share	log(mean)
1	0.73005	1.58e+03	0.57547	0.42012	7.36741
2	0.10194	2.06e+03	0.74866	0.07632	7.63052
3	0.02872	4.25e+03	1.54322	0.04431	8.35386
4	0.13735	9.09e+03	3.30514	0.45397	9.11547
5	0.00194	7.48e+03	2.71962	0.00527	8.92048

Subgroup indices: GE_k(a) and Gini_k

codrc	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	127.98327	0.83388	0.62960	1.03477	0.58332
2	19.24066	0.56076	0.52910	0.91403	0.53316
3	176.11238	0.60167	0.53478	0.93418	0.53699
4	59.18211	0.43629	0.43411	0.87801	0.47408
5	1.06869	0.52585	0.42061	0.47096	0.49866

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	170.71930	0.74416	0.52788	1.69045

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.23283	0.25431	0.31298	0.44104

Subgroup Atkinson indices, A_k(e)

----

codrc	A(0.5)	A(1)	A(2)
1	0.28866	0.56564	0.99611
2	0.23486	0.42923	0.97467
3	0.23745	0.45210	0.99717
4	0.19062	0.35357	0.99162
5	0.21088	0.40895	0.68126

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.23737	0.45310	0.99082

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.15473	0.32632	0.68221

. ineqdeco pcap_inc07, by(codgn)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
29.901	6.709	0.224	6.294	3.015	0.479

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	170.95215	0.99848	0.84086	2.13149	0.64821

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.35537	0.63156	0.99708

Subgroup summary statistics, for each subgroup k = 1,...,K:

codgn	Pop. share	Mean	Rel.mean	Income share	log(mean)

```
----------+--------------------------------------------------------------------
        0 |     0.43485     2.64e+03     0.95850     0.41680     7.87760
        1 |     0.56515     2.84e+03     1.03193     0.58320     7.95142
-------------------------------------------------------------------------------

Subgroup indices: GE_k(a) and Gini_k

------------------------------------------------------------------
    codgn |   GE(-1)     GE(0)     GE(1)     GE(2)      Gini
----------+-------------------------------------------------------
        0 | 137.71481   1.00330   0.88427   2.35943   0.66003
        1 | 198.06570   0.99359   0.80869   1.97438   0.63815
------------------------------------------------------------------

Within-group inequality, GE_W(a)

-------------------------------------------------------
  All obs |   GE(-1)     GE(0)     GE(1)     GE(2)
----------+--------------------------------------------
          | 170.95148   0.99781   0.84019   2.13083
-------------------------------------------------------

Between-group inequality, GE_B(a):

-------------------------------------------------------
  All obs |   GE(-1)     GE(0)     GE(1)     GE(2)
----------+--------------------------------------------
          |  0.00067   0.00067   0.00066   0.00066
-------------------------------------------------------

Subgroup Atkinson indices, A_k(e)

--------------------------------------------
    codgn |   A(0.5)      A(1)      A(2)
----------+---------------------------------
        0 |  0.36671   0.63333   0.99638
        1 |  0.34651   0.62975   0.99748
--------------------------------------------

Within-group inequality, A_W(e)

--------------------------------------------
  All obs |   A(0.5)      A(1)      A(2)
----------+---------------------------------
          |  0.35493   0.63124   0.99702
--------------------------------------------

Between-group inequality, A_B(e)

--------------------------------------------
  All obs |   A(0.5)      A(1)      A(2)
----------+---------------------------------
          |  0.00067   0.00085   0.02018
--------------------------------------------

. ineqdeco pcap_inc07, by(codur)
```

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
29.901	6.709	0.224	6.294	3.015	0.479

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	170.95215	0.99848	0.84086	2.13149	0.64821

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.35537	0.63156	0.99708

Subgroup summary statistics, for each subgroup k = 1,...,K:

codur	Pop. share	Mean	Rel.mean	Income share	log(mean)
0	0.33660	1.88e+03	0.68328	0.22999	7.53914
1	0.66340	3.19e+03	1.16070	0.77001	8.06901

Subgroup indices: GE_k(a) and Gini_k

codur	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
0	119.24039	1.07890	1.10991	5.86941	0.68178
1	196.27199	0.91345	0.72523	1.32438	0.62031

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	170.92006	0.96914	0.81370	2.10604

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)

	0.03209	0.02933	0.02716	0.02545

Subgroup Atkinson indices, A_k(e)

codur	A(0.5)	A(1)	A(2)
0	0.40412	0.66003	0.99582
1	0.32291	0.59886	0.99746

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.34159	0.61293	0.99708

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.02093	0.04813	0.00025

. ineqdeco pcap_inc07, by(codrgn1)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
29.901	6.709	0.224	6.294	3.015	0.479

Generalized Entropy indices GE(a), where a = income difference
sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	170.95215	0.99848	0.84086	2.13149	0.64821

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.35537	0.63156	0.99708

Subgroup summary statistics, for each subgroup k = 1,...,K:

codrgn1	Pop. share	Mean	Rel.mean	Income share	log(mean)
1	0.10876	3.85e+03	1.39778	0.15202	8.25487
2	0.11099	2.06e+03	0.74931	0.08316	7.63138
3	0.05990	3.50e+03	1.27177	0.07618	8.16039
4	0.08914	2.64e+03	0.95982	0.08556	7.87898
5	0.15215	2.47e+03	0.89772	0.13659	7.81209
6	0.11557	2.51e+03	0.91058	0.10523	7.82631
7	0.20506	3.31e+03	1.20382	0.24686	8.10549
8	0.07986	1.96e+03	0.71362	0.05699	7.58258
9	0.07857	2.01e+03	0.73066	0.05741	7.60618

Subgroup indices: GE_k(a) and Gini_k

codrgn1	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	74.47543	0.71044	0.63933	1.03346	0.59011
2	143.52690	1.16907	0.95435	2.10011	0.68804
3	157.53886	1.04160	0.89022	1.69232	0.67430
4	311.85660	1.25296	0.95408	2.79775	0.66844
5	199.18884	0.98824	0.78969	1.41577	0.64170
6	175.83395	1.02243	1.08821	7.21938	0.65458
7	154.30862	0.82873	0.70974	1.27532	0.61128
8	104.12194	0.83967	0.68161	1.08134	0.60732
9	125.31017	1.09689	0.91910	1.73893	0.68069

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	170.92610	0.97280	0.81519	2.10547

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.02605	0.02567	0.02566	0.02602

Subgroup Atkinson indices, A_k(e)

codrgn1	A(0.5)	A(1)	A(2)
1	0.28430	0.50857	0.99333
2	0.40194	0.68934	0.99653
3	0.38004	0.64711	0.99684

```
       4 |   0.39651     0.71434     0.99840
       5 |   0.34546     0.62777     0.99750
       6 |   0.38174     0.64028     0.99716
       7 |   0.31054     0.56340     0.99677
       8 |   0.30686     0.56815     0.99522
       9 |   0.39001     0.66609     0.99603
----------------------------------------------

Within-group inequality, A_W(e)

----------------------------------------------
  All obs |    A(0.5)       A(1)       A(2)
----------+-----------------------------------
          |   0.34342     0.60788     0.99638
----------------------------------------------

Between-group inequality, A_B(e)

----------------------------------------------
  All obs |    A(0.5)       A(1)       A(2)
----------+-----------------------------------
          |   0.01820     0.06039     0.19411
----------------------------------------------

. restore

.
. log close
      log:  C:\Users\Mulugeta\Desktop\STATA WTL\scenario-44.smcl
  log type:  smcl
 closed on:  22 Nov 2010, 21:50:48
-------------------------------------------------------------------------------------------------------------------

.
end of do-file

.
```

Annexure-5: Simulation result of Scenario V

```
 ___  ____  ____  ____  ____ tm
/__    /   ____/   /   ____/
___/   /   /___/   /   /___/   10.1   Copyright 1984-2008
  Statistics/Data Analysis            StataCorp
                                      4905 Lakeway Drive
     Special Edition                  College Station, Texas 77845 USA
                                      800-STATA-PC        http://www.stata.com
                                      979-696-4600        stata@stata.com
                                      979-696-4601 (fax)

70-user Stata for Windows (network) perpetual license:
       Serial number:  81910541205
         Licensed to:  Commerce Faculty
                       University of Cape Town

Notes:
      1.  (/m# option or -set memory-) 10.00 MB allocated to data
      2.  (/v# option or -set maxvar-) 5000 maximum variables
      3.  New update available; type -update all-

. do "C:\Users\Mulugeta\AppData\Local\Temp\STD09000000.tmp"

. log using scenario-5
---------------------------------------------------------------------------------------------------------------------------------------
       log:  C:\Users\Mulugeta\Desktop\STATA WTL\scenario-55.smcl
  log type:  smcl
 opened on:  22 Nov 2010, 21:07:05

. set memory 500m

Current memory allocation

                    current                                 memory usage
    settable          value     description                 (1M = 1024k)
    --------------------------------------------------------------------
    set maxvar         5000     max. variables allowed           1.909M
    set memory         500M     max. data space                500.000M
    set matsize         400     max. RHS vars in models          1.254M
                                                            -----------
                                                              503.163M

. adopath+ "C:\SAMOD\TOOLS\Stata tools"
  [1]  (UPDATES)   "C:\Users\Mulugeta\Desktop\STATA WTL\ado\updates/"
  [2]  (BASE)      "C:\Users\Mulugeta\Desktop\STATA WTL\ado\base/"
  [3]  (SITE)      "C:\Users\Mulugeta\Desktop\STATA WTL\ado\site/"
  [4]              "."
  [5]  (PERSONAL)  "c:\ado\personal/"
  [6]  (PLUS)      "c:\ado\plus/"
  [7]  (OLDPLACE)  "c:\ado/"
  [8]              "C:\SAMOD\TOOLS\Stata tools"

. insheet using "C:\SAMOD\Output\sa_2008&s5output_ext_std_sa.txt"
(71 vars, 99684 obs)
```

```
. n_ben co_bch, label ( "CSG" ) takeup
Total number of CSG recipients = 17024224: take-up rate = 100%

. total_exp co_bch, label ( "CSG" )
Total per annum expenditure on CSG = 42901044510

. bys cohhid: egen hh_inc07 = sum(std_dispy)

. bys cohhid: gen nHHmem = _N

. gen pcap_inc07= hh_inc07/nHHmem

. replace pcap_inc07 = 0.1 if pcap_inc07 <=0
(244 real changes made)

. gen n_ch_in_hh=0

. forvalues n=1(1)25{
  2. bys cohhid: replace n_ch_in_hh=n_ch_in_hh+1 if codag[`n']<18
  3. }
(305 real changes made)
(7936 real changes made)
(32925 real changes made)
(42627 real changes made)
(42956 real changes made)
(36977 real changes made)
(29050 real changes made)
(21913 real changes made)
(15838 real changes made)
(11396 real changes made)
(6644 real changes made)
(4653 real changes made)
(3194 real changes made)
(2210 real changes made)
(1569 real changes made)
(1182 real changes made)
(897 real changes made)
(555 real changes made)
(490 real changes made)
(319 real changes made)
(199 real changes made)
(115 real changes made)
(71 real changes made)
(25 real changes made)
(25 real changes made)

. gen anydepch=0

. replace anydepch=1 if n_ch_in_hh>0
(82655 real changes made)

.
. *POVDECO
.
. *FOR TOTAL POPULATION
.
```

```
. povdeco pcap_inc07, pl(450)

Total number of observations = 99684
Weighted total no. of observations = 99684
Number of observations poor = 45709
Weighted no. of obs poor = 45709
Mean of pcap_inc07 amongst the poor =   275.077
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   174.923

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |       a=0        a=1        a=2
----------+----------------------------------
          |   0.45854    0.17824    0.09280
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

. preserve

. keep if anydepch==1
(17029 observations deleted)

.
. *FOR people in HHOLDS WITH CHILDREN
.
. povdeco pcap_inc07, pl(450)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 42140
Weighted no. of obs poor = 42140
Mean of pcap_inc07 amongst the poor =   280.441
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   169.559

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |       a=0        a=1        a=2
----------+----------------------------------
          |   0.50983    0.19210    0.09534
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

. povdeco pcap_inc07, pl(450) by(codrc)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 42140
Weighted no. of obs poor = 42140
Mean of pcap_inc07 amongst the poor =   280.441
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   169.559
```

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.50983	0.19210	0.09534

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrc	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.82662	678.18018	279.11914	170.88086
2	0.11393	1.26e+03	298.50140	151.49861
3	0.01798	2.91e+03	378.18091	71.81910
4	0.04022	6.33e+03	281.99615	168.00381
5	0.00126	2.54e+03	257.87308	192.12695

Subgroup FGT index estimates, FGT(a)

codrc	a=0	a=1	a=2
1	0.57865	0.21974	0.10945
2	0.25613	0.08623	0.04016
3	0.06393	0.01020	0.00301
4	0.02016	0.00753	0.00385
5	0.28846	0.12316	0.06605

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrc	a=0	a=1	a=2
1	0.93821	0.94552	0.94894
2	0.05724	0.05114	0.04800
3	0.00225	0.00095	0.00057
4	0.00159	0.00158	0.00163
5	0.00071	0.00081	0.00087

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codrc	a=0	a=1	a=2

```
       1 |   1.13500     1.14385     1.14798
       2 |   0.50239     0.44888     0.42127
       3 |   0.12539     0.05311     0.03153
       4 |   0.03954     0.03917     0.04041
       5 |   0.56580     0.64111     0.69277
---------------------------------------------

. povdeco pcap_inc07, pl(450) by(codgn)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 42140
Weighted no. of obs poor = 42140
Mean of pcap_inc07 amongst the poor =   280.441
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   169.559

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |       a=0         a=1         a=2
----------+----------------------------------
          |   0.50983     0.19210     0.09534
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup
--------------------------

Summary statistics for subgroup k = 1,...,K

--------------------------------------------------------------------
    codgn |  Pop. share        Mean     Mean|poor  Mean gap|poor
----------+---------------------------------------------------------
        0 |    0.54342    972.85339    280.86282    169.13716
        1 |    0.45658     1.06e+03    279.91754    170.08246
--------------------------------------------------------------------

Subgroup FGT index estimates, FGT(a)

---------------------------------------------
    codgn |       a=0         a=1         a=2
----------+----------------------------------
        0 |   0.51984     0.19539     0.09649
        1 |   0.49792     0.18819     0.09397
---------------------------------------------

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

---------------------------------------------
    codgn |       a=0         a=1         a=2
----------+----------------------------------
        0 |   0.55408     0.55270     0.54999
        1 |   0.44592     0.44730     0.45001
---------------------------------------------
```

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codgn	a=0	a=1	a=2
0	1.01963	1.01709	1.01210
1	0.97664	0.97966	0.98560

. povdeco pcap_inc07, pl(450) by(codur)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 42140
Weighted no. of obs poor = 42140
Mean of pcap_inc07 amongst the poor = 280.441
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 169.559

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.50983	0.19210	0.09534

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codur	Pop. share	Mean	Mean|poor	Mean gap|poor
0	0.50359	545.66724	279.50766	170.49234
1	0.49641	1.49e+03	282.26440	167.73560

Subgroup FGT index estimates, FGT(a)

codur	a=0	a=1	a=2
0	0.66952	0.25366	0.12397
1	0.34783	0.12965	0.06630

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codur	a=0	a=1	a=2

0	0.66132	0.66496	0.65481
1	0.33868	0.33504	0.34519

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codur	a=0	a=1	a=2
0	1.31322	1.32045	1.30028
1	0.68226	0.67492	0.69538

. povdeco pcap_inc07, pl(450) by(codrgn1)

Total number of observations = 82655
Weighted total no. of observations = 82655
Number of observations poor = 42140
Weighted no. of obs poor = 42140
Mean of pcap_inc07 amongst the poor = 280.441
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 169.559

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.50983	0.19210	0.09534

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrgn1	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.09368	1.63e+03	307.32892	142.67110
2	0.15370	748.18079	274.03372	175.96626
3	0.04213	1.26e+03	288.51889	161.48112
4	0.07592	969.04102	261.46335	188.53664
5	0.19721	843.96637	280.35193	169.64807
6	0.09594	922.97211	284.02774	165.97227
7	0.11271	1.66e+03	284.26642	165.73360
8	0.09171	816.84460	292.73505	157.26494
9	0.13702	754.52209	279.63574	170.36424

Subgroup FGT index estimates, FGT(a)

codrgn1	a=0	a=1	a=2

1	0.20018	0.06347	0.02887
2	0.62957	0.24618	0.12359
3	0.46812	0.16798	0.08211
4	0.60048	0.25158	0.13534
5	0.56006	0.21114	0.10222
6	0.50404	0.18590	0.09268
7	0.29991	0.11046	0.05500
8	0.53166	0.18580	0.08848
9	0.63965	0.24216	0.12072

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrgn1	a=0	a=1	a=2
1	0.03678	0.03095	0.02837
2	0.18980	0.19697	0.19925
3	0.03868	0.03684	0.03628
4	0.08942	0.09942	0.10777
5	0.21664	0.21675	0.21144
6	0.09485	0.09284	0.09327
7	0.06630	0.06481	0.06502
8	0.09563	0.08870	0.08510
9	0.17190	0.17272	0.17350

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codrgn1	a=0	a=1	a=2
1	0.39264	0.33038	0.30280
2	1.23485	1.28152	1.29634
3	0.91819	0.87445	0.86129
4	1.17780	1.30963	1.41957
5	1.09853	1.09910	1.07219
6	0.98863	0.96772	0.97214
7	0.58826	0.57499	0.57689
8	1.04282	0.96721	0.92801
9	1.25463	1.26059	1.26626


```
. restore

. preserve

. keep if anydepch==0
(82655 observations deleted)

.
. *FOR people in HHOLDS WITHOUT CHILDREN
.
. povdeco pcap_inc07, pl(450)
```

```
Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor =   211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |       a=0        a=1        a=2
----------+----------------------------------
          |   0.20958    0.11097    0.08047
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

. povdeco pcap_inc07, pl(450) by(codrc)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor =   211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

---------------------------------------------
  All obs |       a=0        a=1        a=2
----------+----------------------------------
          |   0.20958    0.11097    0.08047
---------------------------------------------
FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup
--------------------------

Summary statistics for subgroup k = 1,...,K

--------------------------------------------------------------------
    codrc |  Pop. share          Mean    Mean|poor  Mean gap|poor
----------+---------------------------------------------------------
        1 |     0.73005      1.58e+03    210.21771      239.78230
        2 |     0.10194      2.06e+03    242.30667      207.69331
        3 |     0.02872      4.25e+03      7.09333      442.90668
        4 |     0.13735      9.09e+03    145.68300      304.31702
        5 |     0.00194      7.48e+03      0.00000        0.00000
--------------------------------------------------------------------

Subgroup FGT index estimates, FGT(a)

---------------------------------------------
```

codrc	a=0	a=1	a=2
1	0.26754	0.14256	0.10396
2	0.13076	0.06035	0.03791
3	0.01227	0.01208	0.01190
4	0.00428	0.00289	0.00269
5	0.00000	0.00000	0.00000

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrc	a=0	a=1	a=2
1	0.93191	0.93785	0.94313
2	0.06360	0.05544	0.04803
3	0.00168	0.00313	0.00425
4	0.00280	0.00358	0.00459
5	0.00000	0.00000	0.00000

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codrc	a=0	a=1	a=2
1	1.27651	1.28465	1.29187
2	0.62391	0.54386	0.47116
3	0.05854	0.10883	0.14787
4	0.02040	0.02605	0.03344
5	0.00000	0.00000	0.00000

. povdeco pcap_inc07, pl(450) by(codgn)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor = 211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codgn	Pop. share	Mean	Mean|poor	Mean gap|poor
0	0.43485	2.64e+03	217.01289	232.98711
1	0.56515	2.84e+03	207.46808	242.53192

Subgroup FGT index estimates, FGT(a)

codgn	a=0	a=1	a=2
0	0.21553	0.11159	0.07955
1	0.20501	0.11049	0.08118

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codgn	a=0	a=1	a=2
0	0.44718	0.43728	0.42988
1	0.55282	0.56272	0.57012

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codgn	a=0	a=1	a=2
0	1.02837	1.00560	0.98858
1	0.97817	0.99569	1.00879

. povdeco pcap_inc07, pl(450) by(codur)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor =   211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor =   238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)
FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codur	Pop. share	Mean	Mean|poor	Mean gap|poor
0	0.33660	1.88e+03	207.03867	242.96133
1	0.66340	3.19e+03	216.30682	233.69318

Subgroup FGT index estimates, FGT(a)

codur	a=0	a=1	a=2
0	0.30705	0.16578	0.11897
1	0.16013	0.08316	0.06094

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codur	a=0	a=1	a=2
0	0.49314	0.50286	0.49764
1	0.50686	0.49714	0.50236

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

codur	a=0	a=1	a=2
0	1.46504	1.49392	1.47843
1	0.76404	0.74939	0.75725

. povdeco pcap_inc07, pl(450) by(codrgn1)

Total number of observations = 17029
Weighted total no. of observations = 17029
Number of observations poor = 3569
Weighted no. of obs poor = 3569
Mean of pcap_inc07 amongst the poor = 211.736
Mean of poverty gaps (poverty line - pcap_inc07) amongst the poor = 238.264

Foster-Greer-Thorbecke poverty indices, FGT(a)

All obs	a=0	a=1	a=2
	0.20958	0.11097	0.08047

FGT(0): headcount ratio (proportion poor)

FGT(1): average normalised poverty gap
FGT(2): average squared normalised poverty gap

Decompositions by subgroup

Summary statistics for subgroup k = 1,...,K

codrgn1	Pop. share	Mean	Mean|poor	Mean gap|poor
1	0.10876	3.85e+03	246.00023	203.99977
2	0.11099	2.06e+03	198.63673	251.36328
3	0.05990	3.50e+03	241.39166	208.60832
4	0.08914	2.64e+03	181.88986	268.11014
5	0.15215	2.47e+03	208.98218	241.01782
6	0.11557	2.51e+03	215.14168	234.85832
7	0.20506	3.31e+03	237.92213	212.07785
8	0.07986	1.96e+03	224.40860	225.59142
9	0.07857	2.01e+03	196.53404	253.46596

Subgroup FGT index estimates, FGT(a)

codrgn1	a=0	a=1	a=2
1	0.07127	0.03231	0.02292
2	0.32169	0.17969	0.13106
3	0.19314	0.08953	0.05874
4	0.28722	0.17113	0.13292
5	0.21459	0.11493	0.08424
6	0.22713	0.11854	0.08563
7	0.13746	0.06478	0.04435
8	0.23456	0.11759	0.08380
9	0.29447	0.16586	0.12174

Subgroup poverty 'share', S_k = v_k.FGT_k(a)/FGT(a)

codrgn1	a=0	a=1	a=2
1	0.03699	0.03167	0.03098
2	0.17036	0.17972	0.18077
3	0.05520	0.04833	0.04372
4	0.12216	0.13747	0.14724
5	0.15579	0.15759	0.15927
6	0.12525	0.12346	0.12298
7	0.13449	0.11971	0.11301
8	0.08938	0.08463	0.08316
9	0.11040	0.11744	0.11887

Subgroup poverty 'risk' = FGT_k(a)/FGT(a) = S_k/v_k

```
----------------------------------------------
  codrgn1 |      a=0        a=1        a=2
----------+-----------------------------------
        1 |   0.34008    0.29117    0.28485
        2 |   1.53492    1.61930    1.62872
        3 |   0.92153    0.80683    0.72989
        4 |   1.37043    1.54210    1.65180
        5 |   1.02388    1.03572    1.04678
        6 |   1.08374    1.06825    1.06417
        7 |   0.65586    0.58378    0.55109
        8 |   1.11917    1.05964    1.04131
        9 |   1.40502    1.49467    1.51284
----------------------------------------------

. restore

.
. *INEQDECO
.
. *FOR TOTAL POPULATION
.
. ineqdeco pcap_inc07


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 15.887    6.320    0.398    3.642    2.213    0.608

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

----------------------------------------------------------------------
  All obs |    GE(-1)     GE(0)      GE(1)      GE(2)       Gini
----------+-----------------------------------------------------------
          |  17.98754    0.79209    0.92513    3.14241    0.64697
----------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

----------------------------------------------
  All obs |    A(0.5)      A(1)       A(2)
----------+-----------------------------------
          |   0.34947    0.54710    0.97295
----------------------------------------------

. preserve

. keep if anydepch==1
(17029 observations deleted)

.
. *FOR people in HHOLDS WITH CHILDREN
.
. ineqdeco pcap_inc07
```

```
Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 11.351    4.942    0.435    3.056    1.957    0.640

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

---------------------------------------------------------------------
  All obs |    GE(-1)       GE(0)       GE(1)       GE(2)       Gini
----------+----------------------------------------------------------
          |   3.72880     0.64563     0.81452     2.84953     0.60339
---------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

---------------------------------------------
  All obs |     A(0.5)       A(1)       A(2)
----------+----------------------------------
          |   0.30533     0.47567     0.88176
---------------------------------------------

. ineqdeco pcap_inc07, by(codrc)


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 11.351    4.942    0.435    3.056    1.957    0.640

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

---------------------------------------------------------------------
  All obs |    GE(-1)       GE(0)       GE(1)       GE(2)       Gini
----------+----------------------------------------------------------
          |   3.72880     0.64563     0.81452     2.84953     0.60339
---------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

---------------------------------------------
  All obs |     A(0.5)       A(1)       A(2)
----------+----------------------------------
          |   0.30533     0.47567     0.88176
---------------------------------------------

Subgroup summary statistics, for each subgroup k = 1,...,K:


-------------------------------------------------------------------------------
    codrc |  Pop. share          Mean      Rel.mean  Income share     log(mean)
```

1	0.82662	678.18018	0.66863	0.55270	6.51941
2	0.11393	1.26e+03	1.24179	0.14148	7.13849
3	0.01798	2.91e+03	2.87129	0.05162	7.97670
4	0.04022	6.33e+03	6.24247	0.25104	8.75331
5	0.00126	2.54e+03	2.50644	0.00315	7.84080

Subgroup indices: GE_k(a) and Gini_k

codrc	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	2.82407	0.43601	0.57967	2.72937	0.50354
2	0.63721	0.44252	0.45936	0.69179	0.50486
3	0.55564	0.36871	0.36297	0.56810	0.45216
4	0.63249	0.32428	0.33298	0.63590	0.40423
5	1.64317	0.67402	0.49333	0.55054	0.53400

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	3.55818	0.43134	0.48926	2.21528

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.17062	0.21429	0.32526	0.63425

Subgroup Atkinson indices, A_k(e)

codrc	A(0.5)	A(1)	A(2)
1	0.21768	0.35339	0.84958
2	0.20370	0.35759	0.56033
3	0.16663	0.30837	0.52635
4	0.14706	0.27695	0.55850
5	0.25252	0.49035	0.76670

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.19545	0.33290	0.71864

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.13657	0.21402	0.57977

. ineqdeco pcap_inc07, by(codgn)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
11.351	4.942	0.435	3.056	1.957	0.640

Generalized Entropy indices GE(a), where a = income difference
sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	3.72880	0.64563	0.81452	2.84953	0.60339

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.30533	0.47567	0.88176

Subgroup summary statistics, for each subgroup k = 1,...,K:

codgn	Pop. share	Mean	Rel.mean	Income share	log(mean)
0	0.54342	972.85339	0.95916	0.52122	6.88023
1	0.45658	1.06e+03	1.04861	0.47878	6.96940

Subgroup indices: GE_k(a) and Gini_k

codgn	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
0	3.08316	0.62694	0.79866	2.77697	0.59642
1	4.54970	0.66572	0.82972	2.90854	0.61046

Within-group inequality, GE_W(a)

```
 All obs |    GE(-1)      GE(0)      GE(1)      GE(2)
---------+--------------------------------------------
         |   3.72781    0.64465    0.81353    2.84854
-----------------------------------------------------

Between-group inequality, GE_B(a):

-----------------------------------------------------
 All obs |    GE(-1)      GE(0)      GE(1)      GE(2)
---------+--------------------------------------------
         |   0.00099    0.00099    0.00099    0.00099
-----------------------------------------------------

Subgroup Atkinson indices, A_k(e)

-------------------------------------------
   codgn |    A(0.5)       A(1)       A(2)
---------+---------------------------------
       0 |   0.29903    0.46577    0.86046
       1 |   0.31174    0.48610    0.90098
-------------------------------------------

Within-group inequality, A_W(e)

-------------------------------------------
 All obs |    A(0.5)       A(1)       A(2)
---------+---------------------------------
         |   0.30511    0.47550    0.87986
-------------------------------------------

Between-group inequality, A_B(e)

-------------------------------------------
 All obs |    A(0.5)       A(1)       A(2)
---------+---------------------------------
         |   0.00031    0.00032    0.01583
-------------------------------------------

. ineqdeco pcap_inc07, by(codur)


Percentile ratios for distribution of pcap_inc07: all valid obs.
-------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
-------------------------------------------------------
 11.351    4.942    0.435    3.056    1.957    0.640

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

----------------------------------------------------------------
 All obs |    GE(-1)      GE(0)      GE(1)      GE(2)       Gini
---------+------------------------------------------------------
         |   3.72880    0.64563    0.81452    2.84953    0.60339
----------------------------------------------------------------
```

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.30533	0.47567	0.88176

Subgroup summary statistics, for each subgroup k = 1,...,K:

codur	Pop. share	Mean	Rel.mean	Income share	log(mean)
0	0.50359	545.66724	0.53799	0.27092	6.30201
1	0.49641	1.49e+03	1.46869	0.72908	7.30631

Subgroup indices: GE_k(a) and Gini_k

codur	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
0	1.42124	0.36676	0.56968	3.74572	0.46079
1	6.69059	0.68403	0.75150	2.05018	0.60692

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	3.59177	0.52426	0.70224	2.74126

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.13703	0.12138	0.11229	0.10827

Subgroup Atkinson indices, A_k(e)

codur	A(0.5)	A(1)	A(2)
0	0.19693	0.30702	0.73975
1	0.30243	0.49542	0.93046

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)

	A(0.5)	A(1)	A(2)
	0.27385	0.44438	0.87880

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.04336	0.05632	0.02448

. ineqdeco pcap_inc07, by(codrgn1)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
11.351	4.942	0.435	3.056	1.957	0.640

Generalized Entropy indices GE(a), where a = income difference
sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	3.72880	0.64563	0.81452	2.84953	0.60339

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.30533	0.47567	0.88176

Subgroup summary statistics, for each subgroup k = 1,...,K:

codrgn1	Pop. share	Mean	Rel.mean	Income share	log(mean)
1	0.09368	1.63e+03	1.60294	0.15016	7.39377
2	0.15370	748.18079	0.73765	0.11338	6.61764
3	0.04213	1.26e+03	1.24235	0.05234	7.13894
4	0.07592	969.04102	0.95540	0.07253	6.87631
5	0.19721	843.96637	0.83208	0.16409	6.73811
6	0.09594	922.97211	0.90998	0.08730	6.82760
7	0.11271	1.66e+03	1.63622	0.18442	7.41432
8	0.09171	816.84460	0.80534	0.07386	6.70545
9	0.13702	754.52209	0.74390	0.10193	6.62608

Subgroup indices: GE_k(a) and Gini_k

codrgn1	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	6.02976	0.54074	0.58115	0.99421	0.55324
2	1.75194	0.56379	0.72765	1.88699	0.56974
3	1.11646	0.74436	0.92241	2.95904	0.64041
4	7.32722	0.78415	1.10697	6.80485	0.65225
5	0.70341	0.56598	0.73418	2.05447	0.57385
6	0.75932	0.54521	0.61931	1.15761	0.56028
7	2.03840	0.69975	0.82075	2.52687	0.61725
8	4.73037	0.49912	0.62278	1.39615	0.53851
9	7.71321	0.59694	0.91863	6.78714	0.57865

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	3.68402	0.59855	0.76386	2.79369

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.04478	0.04708	0.05066	0.05584

Subgroup Atkinson indices, A_k(e)

codrgn1	A(0.5)	A(1)	A(2)
1	0.24708	0.41768	0.92343
2	0.27636	0.43095	0.77797
3	0.34362	0.52496	0.69068
4	0.36992	0.54349	0.93612
5	0.27807	0.43220	0.58452
6	0.25569	0.42028	0.60296
7	0.31647	0.50329	0.80303
8	0.24439	0.39294	0.90440
9	0.30133	0.44951	0.93912

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.28833	0.45374	0.79008

Between-group inequality, A_B(e)

```
----------------------------------------------
  All obs |     A(0.5)       A(1)       A(2)
----------+-----------------------------------
          |    0.02390    0.04015    0.43676
----------------------------------------------

. restore

. preserve

. keep if anydepch==0
(82655 observations deleted)

.
. *FOR people in HHOLDS WITHOUT CHILDREN
.
. ineqdeco pcap_inc07


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 29.901    6.709    0.224    6.294    3.015    0.479

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

----------------------------------------------------------------------
  All obs |    GE(-1)       GE(0)       GE(1)       GE(2)       Gini
----------+-----------------------------------------------------------
          | 170.95215     0.99848     0.84086     2.13149     0.64821
----------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

----------------------------------------------
  All obs |     A(0.5)       A(1)       A(2)
----------+-----------------------------------
          |    0.35537    0.63156    0.99708
----------------------------------------------

. ineqdeco pcap_inc07, by(codrc)


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 29.901    6.709    0.224    6.294    3.015    0.479

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

----------------------------------------------------------------------
```

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	170.95215	0.99848	0.84086	2.13149	0.64821

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.35537	0.63156	0.99708

Subgroup summary statistics, for each subgroup k = 1,...,K:

codrc	Pop. share	Mean	Rel.mean	Income share	log(mean)
1	0.73005	1.58e+03	0.57547	0.42012	7.36741
2	0.10194	2.06e+03	0.74866	0.07632	7.63052
3	0.02872	4.25e+03	1.54322	0.04431	8.35386
4	0.13735	9.09e+03	3.30514	0.45397	9.11547
5	0.00194	7.48e+03	2.71962	0.00527	8.92048

Subgroup indices: GE_k(a) and Gini_k

codrc	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	127.98327	0.83388	0.62960	1.03477	0.58332
2	19.24066	0.56076	0.52910	0.91403	0.53316
3	176.11238	0.60167	0.53478	0.93418	0.53699
4	59.18211	0.43629	0.43411	0.87801	0.47408
5	1.06869	0.52585	0.42061	0.47096	0.49866

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	170.71930	0.74416	0.52788	1.69045

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.23283	0.25431	0.31298	0.44104

Subgroup Atkinson indices, A_k(e)

codrc	A(0.5)	A(1)	A(2)
1	0.28866	0.56564	0.99611
2	0.23486	0.42923	0.97467
3	0.23745	0.45210	0.99717
4	0.19062	0.35357	0.99162
5	0.21088	0.40895	0.68126

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.23737	0.45310	0.99082

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.15473	0.32632	0.68221

. ineqdeco pcap_inc07, by(codgn)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
29.901	6.709	0.224	6.294	3.015	0.479

Generalized Entropy indices GE(a), where a = income difference
sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	170.95215	0.99848	0.84086	2.13149	0.64821

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.35537	0.63156	0.99708

Subgroup summary statistics, for each subgroup k = 1,...,K:

----

codgn	Pop. share	Mean	Rel.mean	Income share	log(mean)
0	0.43485	2.64e+03	0.95850	0.41680	7.87760
1	0.56515	2.84e+03	1.03193	0.58320	7.95142

Subgroup indices: GE_k(a) and Gini_k

codgn	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
0	137.71481	1.00330	0.88427	2.35943	0.66003
1	198.06570	0.99359	0.80869	1.97438	0.63815

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	170.95148	0.99781	0.84019	2.13083

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.00067	0.00067	0.00066	0.00066

Subgroup Atkinson indices, A_k(e)

codgn	A(0.5)	A(1)	A(2)
0	0.36671	0.63333	0.99638
1	0.34651	0.62975	0.99748

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.35493	0.63124	0.99702

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.00067	0.00085	0.02018

```
. ineqdeco pcap_inc07, by(codur)


Percentile ratios for distribution of pcap_inc07: all valid obs.
----------------------------------------------------------
p90/p10  p90/p50  p10/p50  p75/p25  p75/p50  p25/p50
----------------------------------------------------------
 29.901    6.709    0.224    6.294    3.015    0.479

Generalized Entropy indices GE(a), where a = income difference
 sensitivity parameter, and Gini coefficient

----------------------------------------------------------------------
 All obs |    GE(-1)       GE(0)       GE(1)       GE(2)       Gini
----------+-----------------------------------------------------------
         | 170.95215    0.99848    0.84086    2.13149    0.64821
----------------------------------------------------------------------

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

---------------------------------------------
 All obs |    A(0.5)       A(1)       A(2)
----------+----------------------------------
         |   0.35537    0.63156    0.99708
---------------------------------------------

Subgroup summary statistics, for each subgroup k = 1,...,K:


-------------------------------------------------------------------------------
   codur |  Pop. share         Mean     Rel.mean  Income share     log(mean)
----------+--------------------------------------------------------------------
       0 |     0.33660     1.88e+03      0.68328       0.22999       7.53914
       1 |     0.66340     3.19e+03      1.16070       0.77001       8.06901
-------------------------------------------------------------------------------

Subgroup indices: GE_k(a) and Gini_k

----------------------------------------------------------------------
   codur |    GE(-1)       GE(0)       GE(1)       GE(2)       Gini
----------+-----------------------------------------------------------
       0 | 119.24039    1.07890    1.10991    5.86941    0.68178
       1 | 196.27199    0.91345    0.72523    1.32438    0.62031
----------------------------------------------------------------------

Within-group inequality, GE_W(a)

---------------------------------------------------------
 All obs |    GE(-1)       GE(0)       GE(1)       GE(2)
----------+----------------------------------------------
         | 170.92006    0.96914    0.81370    2.10604
---------------------------------------------------------

Between-group inequality, GE_B(a):

---------------------------------------------------------
```

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.03209	0.02933	0.02716	0.02545

Subgroup Atkinson indices, A_k(e)

codur	A(0.5)	A(1)	A(2)
0	0.40412	0.66003	0.99582
1	0.32291	0.59886	0.99746

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.34159	0.61293	0.99708

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.02093	0.04813	0.00025

. ineqdeco pcap_inc07, by(codrgn1)

Percentile ratios for distribution of pcap_inc07: all valid obs.

p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
29.901	6.709	0.224	6.294	3.015	0.479

Generalized Entropy indices GE(a), where a = income difference
sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	170.95215	0.99848	0.84086	2.13149	0.64821

Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

All obs	A(0.5)	A(1)	A(2)
	0.35537	0.63156	0.99708

Subgroup summary statistics, for each subgroup k = 1,...,K:

codrgn1	Pop. share	Mean	Rel.mean	Income share	log(mean)
1	0.10876	3.85e+03	1.39778	0.15202	8.25487
2	0.11099	2.06e+03	0.74931	0.08316	7.63138
3	0.05990	3.50e+03	1.27177	0.07618	8.16039
4	0.08914	2.64e+03	0.95982	0.08556	7.87898
5	0.15215	2.47e+03	0.89772	0.13659	7.81209
6	0.11557	2.51e+03	0.91058	0.10523	7.82631
7	0.20506	3.31e+03	1.20382	0.24686	8.10549
8	0.07986	1.96e+03	0.71362	0.05699	7.58258
9	0.07857	2.01e+03	0.73066	0.05741	7.60618

Subgroup indices: GE_k(a) and Gini_k

codrgn1	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
1	74.47543	0.71044	0.63933	1.03346	0.59011
2	143.52690	1.16907	0.95435	2.10011	0.68804
3	157.53886	1.04160	0.89022	1.69232	0.67430
4	311.85660	1.25296	0.95408	2.79775	0.66844
5	199.18884	0.98824	0.78969	1.41577	0.64170
6	175.83395	1.02243	1.08821	7.21938	0.65458
7	154.30862	0.82873	0.70974	1.27532	0.61128
8	104.12194	0.83967	0.68161	1.08134	0.60732
9	125.31017	1.09689	0.91910	1.73893	0.68069

Within-group inequality, GE_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	170.92610	0.97280	0.81519	2.10547

Between-group inequality, GE_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.02605	0.02567	0.02566	0.02602

Subgroup Atkinson indices, A_k(e)

codrgn1	A(0.5)	A(1)	A(2)
1	0.28430	0.50857	0.99333
2	0.40194	0.68934	0.99653

3	0.38004	0.64711	0.99684
4	0.39651	0.71434	0.99840
5	0.34546	0.62777	0.99750
6	0.38174	0.64028	0.99716
7	0.31054	0.56340	0.99677
8	0.30686	0.56815	0.99522
9	0.39001	0.66609	0.99603

Within-group inequality, A_W(e)

All obs	A(0.5)	A(1)	A(2)
	0.34342	0.60788	0.99638

Between-group inequality, A_B(e)

All obs	A(0.5)	A(1)	A(2)
	0.01820	0.06039	0.19411

. restore

.
. log close
      log: C:\Users\Mulugeta\Desktop\STATA WTL\scenario-55.smcl
  log type: smcl
 closed on: 22 Nov 2010, 21:08:47

.
end of do-file

Annexure-6: Policy reform file used in SAMOD

ram_	param_name	period	SA_2007		SA_2007&S1	
	first_module	Child Support Grant				
1	co_Elig		Eligibility of main carer			
	elig_cond			{codag>=16} & (({nDepChOfPerson>0} & {il_social_grants<amount}#1 & {codht=0} & {codur=1}) | ({nDepChOfPerson>0} & {il_social_grants<amount}#2 & ({codht=1} | {codur=0})))		{codag>=16} & (({nDepChOfPerson>0} & {il_social_grants<amount}#1 & {codht=0} & {codur=1}) | ({nDepChOfPerson>0} & {il_social_grants<amount}#2 & ({codht=1} | {codur=0})))
	#1_amount	y		9600		9600
	#2_amount	y		13200		13200
	#1_level			couple_sa		couple_sa
	#2_level			couple_sa		couple_sa
	output_var			co_sin01		co_sin01
	TAX_UNIT		sben_family_sa		sben_family_sa	
	SWITCH			1		0
2	co_Elig		Eligibility for children			
	who_must_be_elig			one_adult		one_adult
	elig_var			co_sin01		co_sin01
	elig_cond			{codag<=13} & {co_bchdi=0}#1 & {co_bchfc=0}#2		{codag<=13} & {co_bchdi=0}#1 & {co_bchfc=0}#2
	#1_level		individual_sa		individual_sa	
	#2_level		individual_sa		individual_sa	
	output_var			co_sin02		co_sin02
	TAX_UNIT		sben_family_sa		sben_family_sa	
	SWITCH			1		0
3	co_ArithOp		Amount of grant per eligible child			
	who_must_be_elig			one		one
	elig_var			co_sin02		co_sin02
	formula	m		200		200
	output_var			co_bch		co_bch
	TAX_UNIT		individual_sa		individual_sa	
	SWITCH			1		0
	end_module					

SA_2007&S2	SA_2007&S3	SA_2007&S4
{codag>=16} & (({nDepChOfPerson>0} & {il_social_grants<amount}#1 & {codht=0} & {codur=1}) | ({nDepChOfPerson>0} & {il_social_grants<amount}#2 & ({codht=1} | {codur=0})))	{codag>=16} & (({nDepChOfPerson>0} & {il_social_grants<amount}#1 & {codht=0} & {codur=1}) | ({nDepChOfPerson>0} & {il_social_grants<amount}#2 & ({codht=1} | {codur=0})))	{codag>=16} & (({nDepChOfPerson>0} & {il_social_grants<amount}#1 & {codht=0} & {codur=1}) | ({nDepChOfPerson>0} & {il_social_grants<amount}#2 & ({codht=1} | {codur=0})))
9600	9600	9600
13200	13200	13200
couple_sa	couple_sa	couple_sa
couple_sa	couple_sa	couple_sa
co_sin01	co_sin01	co_sin01
sben_family_sa	sben_family_sa	sben_family_sa
1	1	1
one_adult	one_adult	one_adult
co_sin01	co_sin01	co_sin01
{codag<=13} & {co_bchdi=0}#1 & {co_bchfc=0}#2	{codag<=15} & {co_bchdi=0}#1 & {co_bchfc=0}#2	{codag<=16} & {co_bchdi=0}#1 & {co_bchfc=0}#2
individual_sa	individual_sa	individual_sa
individual_sa	individual_sa	individual_sa
co_sin02	co_sin02	co_sin02
sben_family_sa	sben_family_sa	sben_family_sa
1	1	1
one	one	one
co_sin02	co_sin02	co_sin02
200	200	500
co_bch	co_bch	co_bch
individual_sa	individual_sa	individual_sa
1	1	1

SA_2007&S5

{codag>=16} & (({nDepChOfPerson>0} & {il_social_grants<amount}#1 & {codht=0} & {codur=1}) | ({nDepChOfPerson>0} & {il_social_grants<amount}#2 & ({codht=1} | {codur=0})))

999999999

999999999
couple_sa
couple_sa

co_sin01
sben_family_sa
1

one_adult
co_sin01

{codag<=17} & {co_bchdi=0}#1 & {co_bchfc=0}#2

individual_sa
individual_sa
co_sin02
sben_family_sa
1

one
co_sin02
200
co_bch
individual_sa
1