AN IMPACT EVALUATION OF A LARGE-SCALE CASH TRANSGER PROGRAM ON HUMAN CAPITAL DEVELOPMENT: A CASE OF THE CHILD SUPPORT GRANT IN SOUTH AFRICA

By

Vengesai Magadzire

DISSERTATION

Submitted to

KDI School of Public Policy and Management

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Abstract

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Vengesai Magadzire

Poverty alleviation is a preoccupation of many governments and development practitioners the world over. There is renewed interest in understanding the impact of cash transfers on human capital development particularly in Africa as an option to break the intergeneration transmission of poverty. This study empirically examines the impact of the Child Support Grant on the enrolment of secondary school aged children in South Africa as well as the impact of this large scale cash transfer program on the health of children living in South Africa. Given the challenges that South Africa is experiencing as far as secondary school education is concerned where dropout rates are as high as 40 percent, the study finds that the Child Support Grant has a significant impact on the enrolment of secondary school aged children and particularly boys. The study discovered that the program is also comparatively cost-effective when compared to unconditional cash transfers in the region. Furthermore, the study also finds that the program has a significant impact on height-for-age and a positive impact on weight-for-age for children living in South Africa. South Africa is country with a complex mix of under- and over nutrition. Importantly, the study discovers that the Child Support Grant reduces thinness and does not increase the chances of obesity among children; an important conclusion given that 25 percent of all girls and 20 percent of all boys in South Africa are obese. Overall, the Child Support Grant has a significant impact on human capital development in South Africa.

Dedication

To my mother, Shaudzirai Magadzire.

Summary

There is renewed interest in understanding programs with a potential to break intergenerational poverty in developing countries in general and in Africa in particular. Cash transfer programs are one such development tool that is widely believed to have such potential. Much of the work on the impact of cash transfers on human capital development is from conditional cash transfer experiences in Latin America. However, there is a renewed interest in Africa where a few programs are in their pilot stages and are mostly unconditional.

The Child Support Grant in South Africa is an interesting case study in many respects. It is the largest cash transfer program for children in Africa, which has largely been unconditional since its inception in 1998. The program has been growing over the years reaching almost 11 million children by 2012 in a country with 18.6 million children. This goes to show how important the Child Support Grant is in terms of coverage. It now caters for all children under the age of 18 years whose primary caregiver meets the means-test threshold; giving each child, and up to six children per caregiver, a monthly grant of R 320 in a country where poverty line is put at R 515 per month per person and where 50 percent of the population lives below the poverty line. This goes to show how important the Child Support Grant is in terms of fighting poverty.

In this dissertation, therefore, I assessed the impact of the Child Support Grant on human capital development. I took advantage of a sudden change in government policy affecting means-test eligibility for those in spousal relationships as a natural experiment as well as the existence of a first nationally representative panel data in the history of South

Africa, which came into being through a Presidential Decree; to rigorously and empirically assess the impact of the Child Support Grant on human capital development in South Africa.

Firstly, the dissertation assessed the impact of the Child Support Grant on the enrolment of secondary school aged children. South Africa has a serious challenge as far as secondary school education is concerned with dropout rates reaching almost 50 percent by the time children sit for matric examination, which is taken in grade 12. The most cited reason for dropping out of school is financial constraints. Now that the age eligibility has been extended to include virtually all children under the age of 18 years, I was particularly interested in assessing the impact of the Child Support Grant on the enrolment of secondary school aged children given the challenges that South Africa experiences as far as secondary school education is concerned and given that all children from this age cohort are now age-eligible for the grant.

Secondly, the dissertation assessed the impact of the Child Support Grant on health for children living in South Africa. When we talk of child poverty and human capital development, it is important to talk about education but it is equally important too to talk about health for the obvious reasons (known in literature) that a healthier child is more likely to do well in school; and a healthier child is more likely to be a healthier adult and contribute to the development of a country. I was particularly interested in seeing the impact of the Child Support Grant on height-for-age, weight-for-age and body mass index for children living in South Africa. South Africa is a country with a complex mix of under- and over-nutrition. Many countries grapple with a challenge of obesity. This is particularly so in South Africa given that 70 percent of all adult females and 40 percent of all male adults are obese. The problem is unfortunately also very prevalent among children, where 25 percent of all girls and 20 percent of all boys are obese. Obesity exposes children to serious problems such

as diabetes and heart diseases. As a result, motivated by this background, I assessed whether the Child Support Grant increases the chances of obesity among children in South Africa.

Based on the rigorous empirical analysis in this dissertation, the study found out that in general the Child Support Grant has a positive and significant impact on the enrolment of secondary school aged children. This is an important conclusion given the challenges that South Africa is experiencing as far as secondary school education is concerned. The Child Support Grant has a positive and significant impact on the enrolment of secondary school aged boys. This is an important conclusion too, considering that dropout rates for boys are much higher than dropout rates for girls throughout secondary school life of children in South Africa and also considering that the opportunity cost of attending school through labor activities was higher for boys than for girls. However, the result on girls is not conclusive. Although the program has a positive and significant impact on the enrolment of secondary school aged children living in formal urban areas; and a positive impact for children living in urban informal areas and tribal authority areas, it has no impact on the enrolment of secondary school aged children living in formal rural areas. Formal rural areas are characteristic of inadequate physical conditions in school and higher indirect costs suggesting that other factors (such as supply-side considerations among others) might have an overbearing effect on children living in rural areas.

When compared to other cash transfers in Africa on education, particularly from Malawi, it was discovered that the Child Support Grant is also comparatively cost-effective; fairing as good as in an unconditional cash transfer but lower than a conditional cash transfer in Malawi. This suggests that the Child Support Grant has room to be more cost effective if conditionalities on education are fully introduced and enforced. Scale might be important for the slight difference in cost effectiveness estimates between the Child Support Grant and the

unconditional program in Malawi. The Child Support Grant is reaching to millions of children when compared to programs in Malawi and Kenya with coverage of a few thousand beneficiaries. Average cost tent to fall with number beneficiaries.

The study also concluded that the Child Support Grant has a positive and significant impact on height-for-age; and a positive impact on weight-for-age for children in South Africa. Although the program has a significant impact on the health of children living in formal urban areas, it does not have an impact on health for children living in formal rural areas. Rural areas in South Africa still face challenges such as post-natal feeding support, social determinants of health such as low educational levels, poor housing and sanitation, insufficient health surveillance and information systems as well as a shortage of healthcare service providers. The complex supply-side limitations prevailing in the rural areas still have an overbearing effect on children living in formal rural areas.

It is important to pay particular attention to children in their early years of life for the main reason that nutritional deficiencies experienced at this stage of life are very difficult to reverse and have a long-term effect on a child's well-being. Although the impact of the Child Support Grant on the health (height-for-age and weight-for-age) of children aged 1 – 4 years is positive, and weakly significant in some cases, it is not strongly significant. One possible explanation for this is cascading effect from the effect of low up-take of the Child Support Grant by caregivers for children below the age of 1 year. Uptake of the Child Support Grant is lowest among children below the age of 1 year.

Given the challenges South Africa is experiencing as far as obesity is concerned where 25 percent of all girls and 20 percent of all boys are obese, the study discovered and reached a very important conclusion that the Child Support Grant does not increase the

chances of obesity among children. The Child Support Grant has a significant impact on the health of children living in South Africa and does not increase the chances of obesity among children. Based on the rigorous empirical analysis in this study, the Child Support Grant has a significant impact on human capital development in South Africa.

On the basis of the findings presented herein, this dissertation makes policy recommendations. Although the Child Support Grant has a positive and significant impact on the enrolment of secondary school aged children, it does not have an impact on the enrolment of children living in formal rural areas. It is important, therefore, to pay special attention to children living in formal rural areas. The Child Support Grant does not have an impact on the health of children living in formal rural areas. At policy level, it is therefore important to pay special attention to children living in rural areas and children aged 1 – 4 years and to further encourage the uptake of the Child Support Grant among children below the age of 1 year so that the human capital development for these groups of children is also enhanced just like other groups of children in South Africa.

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CHAPTER 1

INTRODUCTION

Poverty alleviation is a pre-occupation of many governments, policy-makers and development practitioners the world over. A lot of attention is now being put towards programs and development tools with a potential to break inter-generational poverty among the poorest; particularly with a special focus on child poverty and human capital development. One such development tool that is receiving special attention is cash transfer programs; with a lot of evidence coming from the documented experiences from Latin American countries. Most of this experience is on conditional cash transfers; with a relatively few documented evidence on unconditional cash transfers.

Cash transfers can be conditional or unconditional. The literature on cash transfers does not seem to be conclusive on whether conditional transfers are better than unconditional transfers. Factors most often taken into account when deciding whether to condition or not center a lot on political considerations, beliefs (Fizsbein and Schady, 2009); and a need to use conditions as a screening mechanism (Das *et al.*, 2005), as well as demand and supply considerations (Adato and Bassett, 2008; Lagarde *et al*., 2009).

In Africa, there is renewed interest in better understanding the impact of unconditional cash transfers; with a number of programs in their pilot stages. The Child Support Grant in South Africa is arguably the largest social protection program in Africa for children, reaching 11 million children by 2012 in a country with 18.6 million children; and one that has been around for over 15 years. It is paid to a caregiver of a child within an age-eligible range and is paid up to six children per caregiver. The age eligibility criterion has been regularly adjusted over the years and now includes all children under the age of 18. For

most poor families in South Africa, the Child Support Grant is an important source of income. Although the Child Support Grant is known to have been largely unconditional since inception, there had been concerted efforts by the government to make the program conditional and the debate is still very live. The Child Support Grant is an interesting case study in understanding cash transfers in Africa and a better understanding of the impact of unconditional cash transfers on child poverty and human capital development; particularly education and health. This dissertation seeks to contribute to this relatively limited aspect of cash transfers.

This study empirically assessed the impact of the Child Support Grant on the enrolment of secondary-school-aged children in South Africa; and the impact of the program on height-for-age and weight-for-age for children in South Africa. In assessing the impact of the program on enrolment, the analysis was limited to children aged 13 – 18 years for the obvious reason that they are more likely to be in secondary school. The analysis for the impact on health outcomes was limited to children under the age of 15; with further disaggregation into age cohorts of 1 – 4 years; 5 – 9 years; and 10 – 14 years, in order to be able to see the impact of the program on children in their early years of life. Nutritional deficiencies experienced in a child's early years of life are difficult to reverse and have a long-term impact on the child's well-being in future.

Enrolment rates are very high in primary school but the country seems to have a serious challenge as far as secondary school education is concerned. Drop-out rates among secondary school children increase year-on-year, reaching almost 40 percent by the time children get into Grade 10 and almost 50 percent by Grade 12. The most cited reason why children do not attend school is financial constraints; with 24 percent citing no money (Hall, 2011; Branson, Hofmeyr and Lam, 2013). Is the Child Support Grant doing something about

this for secondary-school-aged children? This dissertation addressed this question and the hypothesis on enrolment was to say that the Child Support Grant has a significant impact on the enrolment of secondary-school-aged children.

When discussing child poverty and human capital development, it is important to talk about education but it is equally important to talk about health too; for the obvious reasons that a healthier child is more likely to do well in school, and a healthier child is more likely to be a healthier adult in future and contribute to the development of a country. The research also looked at the impact of the Child Support Grant on height-for-age and weight-for-age. South Africa is a country with a complex mix of under- and over-nutrition. The next natural question the research addressed was to answer whether the Child Support Grant does not contribute to obesity among children. Obesity exposes children to the risks of suffering from diabetes and heart diseases. Many countries the world over are grappling with the problem of obesity among children. Looking at obesity is therefore important and particularly so in South Africa; where 70 percent of all female adults and 40 percent of all male adults are obese, and where 25 percent of girls and 20 percent of boys are obese (The Economist, 14 June, 2014). The research sought to show that the Child Support Grant has a significant impact on height-for-age and weight-for-age; and that the program does not increase the chances of obesity among children in South Africa.

Prior studies have looked at the impact of the Child Support Grant on education. Most of the previous work on the impact of the Child Support Grant on education looks at primary school education. This dissertation expands on that and is distinct in that it pays attention on secondary-school-aged children. The age eligibility criterion recently included children aged 15 to 17 years; this dissertation contributes to the existing literature on the Child Support Grant by providing evidence on the impact of the program on the enrolment of

secondary-school-aged children. Whereas some previous researches used data from one province of South Africa, in this dissertation I used nationally representative data covering all the nine provinces of the country.

There is also some existing literature on the impact of Old Age Pension on some health outcomes including height-for-age and weight-for-age of children in South Africa. In this research, particular interest is on a social protection program specifically meant for children; the Child Support Grant. This makes this research different and distinct from previous works that focused on a social protection program meant for the aged. Equally important, however, looking at the impact of the Child Support Grant on health outcomes is assessing a direct channel towards child poverty and human capital development. There is also some existing literature on the impact of the Child Support Grant on height-for-age. Much of this literature use data from one province, particularly the KwaZulu-Natal Income Dynamics Study. This dissertation builds on that and is one of the first works to use the first nationally representative panel data in South Africa.

The study took advantage of the sudden change in government policy affecting caregivers who are in spousal relationships and the way the means-test threshold is now calculated that came into effect in 2008 and used these sudden changes in government policy as a natural experiment. So sudden was the change in policy, something with no precedence whatsoever given the history of policy announcements affecting the Child Support Grant since 1998, that it is difficult to imagine any economic agent to have anticipated such a change in policy. The study also took advantage of the first nationally representative panel study to get a deeper understanding of the dynamics affecting children in South Africa. The study finds that the Child Support Grant has a significant impact on the enrolment of secondary-school-aged children. The study also discovered that the Child Support Grant is

comparatively cost-effective compared to other programs on education in Africa, particularly Malawi and Kenya. Furthermore, the study finds that the program has a significant impact on height-for-age in general and on height-for-age and weight-for-age for children living in urban areas. The Child Support Grant does not contribute to the problem of obesity among children in South Africa.

The rest of the dissertation is organized as follows. Chapter 2 details the background information about the Child Support Grant; with section 1 of chapter 2 describing both age-eligibility criteria applicable to children and means-test threshold applicable to caregivers. To qualify for the Child Support Grant, a child has to meet the age-eligibility criterion as well as coming from a household which is means-test eligible. Section 2 of Chapter 2 traces the growth of the Child Support Grant in terms of outreach; showing the importance of the program in terms of coverage. The grant amount has also been adjusted over the years and Section 3 dwells on that. Section 4 of Chapter 2 shows the importance of the Child Support Grant in terms of its share to total expenditure towards social assistance. South Africa is one of the very few countries in Africa with a comprehensive package of social protection programs namely: Old Age Pension; War Veterans Grant; Disability Grant; Care Dependency Grant; Foster Care Grant; and the Child Support Grant. Section 5 concludes the chapter by showing the overall importance of the Child Support Grant in terms of child poverty in South Africa.

Chapter 3 gives a detailed literature review. Section 1 of Chapter 3 details literature review on the impact of cash transfers on education; drawing much from the Latin American, South Asian and Far East Asian experiences. Section 2 of Chapter 3 dwells on previous works on the impact of cash transfers on health. There is a rich literature mostly on conditional cash transfers on health from Latin American experiences. The debate on whether

to condition or not and considerations thereto are still areas of much discussion in the literature. This debate is very much alive in South Africa as well. Given this background, Section 3 of Chapter 3 gives a detailed treatment on what is known on the literature on conditional versus unconditional cash transfers. Section 4 of Chapter 3 focuses specifically on the existing literature on the Child Support Grant and section 5 concludes the chapter by identifying the gaps in literature and drawing distinctions of this dissertation work from other researches.

Chapter 4 investigates the impact of the Child Support Grant on the enrolment of secondary-school-aged children and section 1 of the chapter introduces the paper. Section 2 of the chapter looks at a brief literature review and leads to hypothesis development. A full description of the data used and data treatment together with descriptive statistics are presented in section 3 of chapter 4. Section 4 of the chapter describes the methodology used in assessing the impact of the Child Support Grant starting off by detailing the natural experiment that came as a result of a sudden change in government policy affecting the Child Support Grant and a description of the empirical strategy adopted by looking at the Difference-in-Differences framework, Instrumental Variables method and Panel Fixed Effects method separately. Section 5 of the chapter presents the results; first results based on the Difference-in-Differences estimations followed by Instrumental Variables estimation results and lastly results based on Panel Fixed Effects estimations. The last sub-section of section 5 discusses the cost-effectiveness of the Child Support Grant. Section 6 concludes the chapter by drawing conclusions from a reconciliation of the results from the three empirical methods used and linking them to the testable hypotheses presented in section 2 of the chapter.

Chapter 5 assesses the impact of the Child Support Grant on health. When a discussion of child poverty and human capital development is at stake, it is important to discuss about education but it is also equally important to talk about health, for the obvious reasons that a healthier child is more likely to do well in school and a healthier child is more likely to be a healthier adult and contribute to the development of a country. Section 1 of chapter 5 introduces the chapter. Section 2 discusses a brief literature review and section 3 details the objectives of the chapter, the research questions and testable hypotheses. Data and descriptive statistics as well as data treatment are outlined in section 4 of this chapter. Section 5 of this chapter dwells on methodology used in the analysis, which describes the two empirical methods namely the Difference-in-Differences and Panel Fixed Effects methods. Results of the impact of the Child Support Grant on child health outcomes are presented in section 6 of the chapter. Difference-in-Differences results of the impact of the program on height-for-age and weight-for-age are presented first followed by robustness checks of these results. The second sub-section on results details Panel Fixed Effects estimation results of the program on height-for-age and weight-for-age. The last sub-section on results presents results on the effect of the Child Support Grant on obesity. Results from the last section answer the question as to whether the Child Support Grant contributes to the problem of obesity among children in South Africa. Section 7 of the chapter concludes the chapter by tying in all the results to the testable hypotheses presented in section 3 of this chapter.

Chapter six concludes the dissertation. Section 1 of Chapter 6 summarizes the findings presented in the entire Dissertation. Drawing from the findings, Section 2 of the Chapter looks at policy implications and identifies potential areas of further research.

CHAPTER 2

BACKGROUND: THE CHILD SUPPORT GRANT

In 1998, through an Act of Parliament, the Government of South Africa introduced a grant meant to help children and to fight poverty. The grant is widely referred to as the Child Support Grant. It came into existence following years of research, consultations and recommendations by the Lund Committee for Child and Family Support which was established in 1995 to consider measures for the support of children and families; which played a critical role in the policy formulation process of the program. The then existing State Maintenance Grant did not target the poorest children equitably and the Child Support Grant was established to address this imbalance and to reach significantly more poor families. It is part of a wider social protection strategy of South Africa enshrined in the quest to provide social assistance to vulnerable groups of the society and fulfill Section 27 of the Constitution which guarantees citizens social security.

The Child Support Grant is paid to a primary caregiver of a child within the eligible age range who passes the means-test. It is a monthly grant given per child and up to a maximum of six children per caregiver. The grant has been largely unconditional and did not stipulate any behavioral change on the part of the recipients[1]; such as is prevalent with most conditional cash transfers. However, there are certain requirements namely possession of a birth certificate for the child, an identity document for the mother, infant health record

[1] There have been several attempts to introduce conditions over the years (Hall, 2011; Woolard and Leibbrandt, 2010). In 1998, the Child Support Grant had a range of conditions (for example proof that children had been immunized) which were later dropped that year; in 2004 the draft regulations stipulated that the child should receive immunization and attend school if of school-going age. 'All these conditions were dropped from the regulations in recognition that they were both unnecessary and impossible to implement' (Hall, 2011). The recent attempt was in 2010 when the government wanted to condition on school attendance but was not implemented following urgent submissions from children's sector and human rights groups about the implications. However, the program is largely unconditional: not going to school does not result in the cancellation of the grant.

(Zembe-Mkabile et al., 2012). There is a clear stipulation in the recent Child Support Grant legislation to the effect that proof of school enrolment and attendance is not a condition for continued receipt of the grant[2].

At inception, the grant was meant to cater for children under the age of seven but has since been increased throughout the years. The Child Support Grant has grown in importance to become Africa's largest cash transfer program for children in terms of both coverage and budget. It is unique in that it is the largest cash transfer in Africa and that has been there for nearly 15 years. Most cash transfers in Africa are in their pilot stage and cover up to a few thousands beneficiaries.

2.1 Eligibility

It has seen a remarkable transformation in terms of eligibility; increasing progressively over the years as detailed in Table 2.1 in appendix, which details the transformation on beneficiaries, eligibility and nominal grant amounts. From 1999 to 2002, the grant catered for children under the age of 7 and was increased to 9 years in 2003, 11 years in 2004. From 2005 to 2008 it was targeted at children under the age of 14 years. It has been increased progressively and now it is virtually for all children under the age of 18 years. The inclusion of children up to the age of 17 years has very important policy implications. It can be said that in its early years, the Child Support Grant was aimed at pre- and primary school going children and the inclusion from children under the age of 14 to children under the age of 18 years implies that it now caters for both primary and secondary school-going children. Although in the beginning the authorities wanted to reach a target of 3 million

[2] *See* 'Department of Social Development: Presentation on the regulations under the Social Assistance Act, 2004 (Act No. 13 of 2004), 2010'; also cited in Zembe-Mkabile et al. (2012).

children, today the Department of Social Development is now targeting 100 percent of all eligible children in the country. The fact that eligibility is up to a total of 6 children from one family also means that the Child Support Grant is a very important source of income for families with more children and an increase in eligibility to children under 18 years has important implications to the society.

In order to make sure the grant benefits the most-needy children, the government introduced a means-test threshold. The threshold was set at a household income not exceeding R 800 and R 1 100 per month for urban and rural households respectively. The means-test threshold remained constant for 10 years from 1998 to 2008. However, it was reviewed in 2008. From 22 August, 2008, the means-test was to be calculated as 10 times the grant amount; thereby introducing a scientific way of determining the threshold. In 2012, the means test threshold was set at R 2 800 per month (R 33 600 per annum)[3] for a single caregiver and R 5 600 per month (R 67 200 per annum) for married caregivers.

Before 2008, there was no distinction between single and married caregivers; they were all subjected to the same cut-off threshold. However, for the first time in the history of the Child Support Grant, with effect from 22 August, 2008, married caregivers' (those in spousal relationship) means-test threshold was to be determined as double that of the single-income caregivers. This was a tremendous and sharp change in policy that saw some households who were ineligible for the grant becoming suddenly eligible after the change in policy. Also, since 2008, the threshold does not distinguish between urban and rural caregivers anymore.

[3]Approximately US$ 3 775.00 per annum

The caregiver does not necessarily mean biological parent but rather refers to a 'primary caregiver'. It is given to the person who looks after the daily needs of the child and this means that it does not necessarily mean that the caregiver has to be related to that child. This is based on the concept that the Child Support Grant must follow the child. In general, mostly the grant is received by the child's parent. About 82 percent of the recipients are parents, 12 percent are grandparents and 3 percent aunt or uncle. The largest proportion of grant recipients is by women (McEwen and Woolard, 2012). About 2 percent of women recipients are teen mothers. In all the cases, they need to meet means-test eligibility criterion.

2.2 Beneficiaries

Table 2.1 also shows the number of beneficiaries of the Child Support Grant from 1999 to 2012. For comparison purposes, Table 2.1 also includes data for other social grants meant for children; namely the Care Dependency Grant and the Foster Care Grant. The Care Dependency Grant is paid to parents, primary caregivers or foster parents of any child with any severe mental and/or physical disabilities between the ages of 1 and 18 years requiring full-home care. On the other hand, the Foster Care Grant is paid to parents for children between the ages of 0 and 18 years with provision for extension up to 21 years. It was created to provide for children removed from families into foster care who are deemed in need of such support by the courts. Table 2.1 shows that, although the nominal grant amounts for the Child Support Grant are comparatively lower than the other two social grants, it has grown tremendously over the years in terms of coverage, starting with about 22,000 children in 1999 and skyrocketed to 5.4 million by 2005, 8.2 million by 2007 and 10.9 million by 2012. South Africa is a country with 49.9 million people, of which 18.6 million are children under the age

of 18 (UNICEF, 2011); this goes to show how important the Child Support Grant is in terms of coverage.

A fairly low uptake in the early years of the program is widely attributed to bureaucratic challenges that dodged the program but have since been addressed over the years. Challenges, however, are still experienced by other eligible families. In 2008, 2.1 million eligible children (27 percent of all eligible children) were not receiving the grant; and in 2012 (Cluver et al., 2013; Coetzee, 2010). Lack of documentation is cited as the biggest barrier to accessing the Child Support Grant (Zembe-Mkabile, 2012; South Africa Human Rights Commission/UNICEF, 2011); with 34 percent citing lack of documentation. This is followed by 24 percent citing 'other reasons' as the militating factor. A comparatively large proportion of caregivers indicated that 'they have not gotten around it' and 'cannot be bothered' pushing the figures at 12 percent and 9 percent respectively. Five percent and 6 percent cited that they 'do not know how to apply' and 'in the process of applying' respectively. However, the number of beneficiaries is projected to increase by 2 million in the next few years with a growth rate of 4.9 per cent per year (Tibert et al., 2013).

Table 2.2 in appendix shows the breakdown of beneficiaries by province from 1999 to 2009. KwaZulu-Natal and Eastern Cape Provinces have the highest beneficiaries of the Child Support Grant for all the years. This shows that the Child Support Grant is very important in poverty alleviation[4] since these are among the poorest provinces in South Africa. Research by the Department of Welfare found that poorest children are located in the provinces of KwaZulu-Natal, Limpopo and the Eastern Cape (Triegaardt, 2005). In the

[4] Dubihlela and Dubihlela (2014) also concluded that social grants play an important role in poverty alleviation among female headed households. Worrying that social welfare in South Africa might cause dependency on the state, Potts (2012) concluded that dependency on the state is not straight forward and that it varies across grants.

Eastern Cape Province, for example, 78 per cent of children live in poor households. Poverty in South Africa imitates racial contours of the society and this shows how important the Child Support Grant is in reaching to the poor and fighting child poverty. Sixty-four per cent (11.9 million children) of all children live in income poverty. Children are more likely to live in poorer households. Some 7 million children live in the poorest 20 percent of households while only 1.7 million live in the richest 20 percent (UNICEF, 2011). In the early years of the program, relatively wealthier and more urban provinces of Western Cape and Gauteng registered a disproportionate share of the Child Support Grant in relation to levels of poverty and numbers of children in these provinces. Table 2.3 and 2.4 show the breakdowns of the beneficiaries according to age and province as at 30 June 2011. This snapshot presentation shows that age cohort 0-7 years recorded the highest beneficiaries for all the provinces with 3-4 years and 4-5 years cohorts dominating. This, in part, can be explained by the staggered eligibility conditions. The 0-7 age cohort has been eligible since 1999 as compared to other cohorts. However, the uptake of the Child Support Grant is lowest among children below the age of 1 year.

2.3 Grant amount

The amount of the grant has been growing over the years as highlighted in Table 2.1. It started off at R 100 in 1999 and has successively been adjusted over the years; and by April 2013 the monthly amount stood at R 280. With effect from 1 October, 2014, the monthly grant amount is pegged at R 320. For a family with six eligible children, this translates into an income of R 1 920 per month; approximately US $387 using the World Bank's 2012 PPP conversion factor for private consumption (LCU per international $) rate. The adjustments of nominal grant amounts over the years have also seen the real grant value increasing over the

years. The real value of the Child Support Grant in April 2013 was R 134 in 1999 money terms. This saves to confirm that the Child Support Grant nominal value adjustments over the years were successful in preserving the purchasing power of the grant.

2.4 Government Expenditure on Child Support Grant

The increase in numbers, both in terms of increased beneficiaries and nominal grant value, over the years has also had a noticeable impact on the fiscus as detailed in Table 2.5, which details social grants expenditure by type of grant and province from fiscal year 2003 to 2010 and in Table 2.6. The term Social Assistance Grants is an umbrella term used to refer to 'non-contributory and income-tested benefits provided by the state to vulnerable groups such as the disabled, the elderly and children in poor households' (Woolard and Leibbrandt, 2010). The Child Support Grant is not the only social grant in South Africa. There are five other grants namely: the Old-age, War Veterans[5], Disability, Foster care, and Care Dependency. The Child Support Grant however, is the largest in terms of beneficiaries and the fastest growing. It started off with an uptake of only 10 percent in 2000 and reaching 63 percent in 2005, costing 3.5 percent of GDP and higher since then. The total expenditure for the Child Support Grant has been growing at an average rate of 19.4 per cent from 2003 to 2010 and 7.6 percent as of 2013. It has continued to be an important aspect of the budget for social development, accounting for 36.8 percent of the total budget towards social assistance and second only from the Old Age Grant which consumes 39 percent of the total budget towards social assistance.

[5] 'The war veterans' grants is paid to people of 60 years and more, who served in the South African army during the First World War (1914 – 1918), the Second World War (1939 – 1945) or the Korean War (1950 – 1953)' (Dubihlela and Dubihlela, 2014).

2.5 Conclusion

The adjustment in the means-test threshold and the extension of the age eligibility criteria to include all children under the age of 18 years as well as the continual review of the grant amount means that the grant is becoming more accessible and important to many people. The poverty line in South Africa is put at R 515 per month per person. With an amount of R 320 per child per month and up to six children from one family, the grant is by all standards an important source of income for poor households. It is estimated that about 50 percent of the population lives below the poverty line. It is also estimated that for most families the Child Support Grant accounts for 40 percent of reported incomes. The Child Support Grant may be the sole source of income for many poor families; making it essential for people's survival. It, therefore, is an important source of income for poor families and is an important weapon in the fight against child and intergenerational poverty. The Child Support Grant therefore presents a unique opportunity to gain further understanding on how cash transfers work in developing countries and provide another perspective to the well documented conditional cash transfers from Latin America and Asia.

CHAPTER 3

LITERATURE REVIEW

3.1 Introduction

Poverty alleviation is a preoccupation of many governments, development practitioners and policy makers the world over. Different programs have been put forward and implemented with varying levels of success in different parts of the world. One such program is cash transfers which has been implemented in many developing countries with prominence in Latin and Central America. Many of these programs aim to address intergenerational poverty by focusing on child poverty and human capital development (Ponce and Bedi, 2010); particularly education and health. This is important because children, more often than not, are the most vulnerable groups due to their age, physical and developmental fragility, societal status and dependence on others (Gabel, 2012). The effect of childhood poverty has long-term implications on children's physical, social, emotional, neurological, mental and physical development (Meaney, 2001; Shonkoff and Phillips, 2000; McEwen, 2003; cited in ibid).

Growing up in poverty is correlated with diminished cognitive achievement as measured by standardized intelligence tests (Farah *et al*., 2006). On another hand, stunting, for example, is very difficult to reverse after the first two years of a child's life leading to proven reduced work capacity and less productive livelihoods as adults. Children who lacked iron and iodine in their early years perform worse off in school compared with those who did not; and insufficient investment in childhood increase the likelihood of poverty in adulthood; and exacerbate the intergenerational transmission of poverty (Grantham-McGregor *et al*., 2007; Samson, Heinrich, and Williams, 2008; Handa, Devereux, and Webb, 2010; Heckman

and Carneiro, 2003; ibid); and there is a growing body of evidence suggesting that cash transfer programs can increase nutritional, health and educational well-being of children (Gabel; 2012).

To shed light on what is known on cash transfers and human capital development, the literature review will assess the impact of cash transfers on education and health separately, drawing from Latin American and South Asian experiences. It will then focus on the debate on conditional versus unconditional transfers. This is very important and particularly so in the case of the Child Support Grant were the debate has stoked the program since its inception in 1998. Lastly, the literature review will look at the existing literature on the Child Support Grant in general and on education and health in particular; and identify gaps from the literature review, which become the premises of this research where upon I bridge and expand on these gaps.

3.2 Impact of cash transfers on education

A number of researchers focused on the impact of cash transfers on education (Schultz, 2000; 2004; Behrman, Sengupta and Todd, 2000; 2005; Todd and Wolpin, 2006; Behrman, Parker and Todd, 2006; 2007; Maluccio and Flores, 2004). Slavin (2010) reviewed research on the effects of conditional cash transfers and other financial incentive schemes on educational outcomes both in developing countries (Mexico, Colombia, Ecuador, Costa Rica, Jamaica, Pakistan, and Kenya) and developed countries (Israel, UK, and USA) and discovered that providing families with significant financial incentives in developing countries modestly increases secondary school attendances although effects on graduation

rates and on actual learning are less well known; and less supportive results in developed countries.

Assessing the impact of cash transfers on enrolment, Attanasio, Fitzsimons and Gomez (2005) found an effect of 5-10 percent increase in enrolment for children aged 12-17 years in Colombia. However, there was no effect for children aged 8-13 years living in urban areas but for children living in the rural areas with boys registering higher impacts in both rural and urban for primary school-aged children. For secondary school children, effects were large for boys in the urban areas and for girls in the rural areas (ibid). In a similar work but a different program (on *Subsidios Condicionados a la Asistencia Escolar* cited in Slavin, 2010), cash transfers increased attendance by 2.8 percent; recording larger effects for children aged 9-11 years as compared to the effect for children aged 6-8 years. One of the most important conclusions from this program is that the graduation bonus significantly increased the chances of secondary school graduation and entry into post-secondary school education (by a gain of 49.7 percent).

Working on Ecuador, Schady and Araujo (2006) also found a program effect of 10 percent increase in enrolment for children aged 6-17 years. In Bangladesh, Khandler, Pitt and Fuwa (2003) found a 12 percent increase in probability of enrolment for girls aged 11-18 years. Filmer and Schady (2011) found that a modest cash transfer, equivalent to approximately 2 percent of the consumption of the median recipient household in Cambodia, had a substantial impact on school attendance, approximately 25 percentage points (although a somewhat larger transfer did not raise attendance rates above this level, probably suggesting that program design might also be important). In Pakistan, girl's schools that received stipend witnessed an increase in attendance of about 9 percent (Chaudhury and Parajuli, 2006; cited in Slavin, 2010).

In terms of educational outcomes, a sizeable number of impact evaluation studies have shown that such programs have led to an increase in school enrolment, ensured regular school attendance and led to a reduction in child labor (ibid; Galiani and McEwan, 2013; Patrinos, 2007; Barrera-Osario, Bertrnd, Linden, and Perez-Calle, 2008; Glewwe and Olinto, 2004 cited in Gabel, 2012; Fiszbein and Schady, 2009). However, De Janvry et al (2006) concluded that although conditional transfers helped protect enrolment, they do not completely discourage ('refrain') parents from increasing child work in the presence of shocks. In general, however, evidence from conditional cash transfers, mostly from Latin American countries, suggests that cash transfers have an impact on schooling outcomes. Although empirical evidence on students' test scores is scarce, Ponce and Bedi (2010) opined that they may also be expected to exert a positive impact.

3.3 Impact of cash transfers on health

There is also a rich body of literature on the impact of cash transfers on health (Fernald, Gertler, and Neufeld, 2008; Attanasio, 2005; Gertler, 2000; Maluccio, 2004; Behrman, 2005; 2004; Lagarde *et al*., 2009). Health and education of children are important aspects of human capital development and in the fight of intergenerational poverty. As Glewe and Miguel (2008) noted, poor health may reduce learning through fewer years enrolled, lower daily attendance, and less efficient learning per day spent in school; and inevitably having a long-term impact on a child's future. Much of the literature on the impact of cash transfers on health is from Latin American experiences as well (Gertler, 2004; Behrman and Hoddinott, 2005; Gertler and Boyce, 2001).

Maluccio and Flores (2004) found that cash transfers in Nicaragua reduce the prevalence of stunting in children under the age of 5 years by 5 percent and underweight by 6 percent. Maluccio (2004) found a positive impact on height-for-age (an increase in height-for-age by 0.17 standard deviations) for children under the age of 5 years. In Colombia, Attanasio et al. (2005) noted a 0.44 centimeters increase in height for infants under 24 months old.

Fernald, Gertler, and Neufeld (2008) used a doubling of cash transfer in Mexico to find the impact of cash transfers on child health, growth and development; concluding that a doubling of cash transfers was associated with higher height-for-age Z score (0.20 standard deviations); lower prevalence of stunting (-0.10 standard deviations); lower body-mass index for age percentile (-2.85 standard deviations); and lower prevalence of being overweight (-0.08 standard deviations), and also associated with children doing better on a scale of motor development; three scales of cognitive development, and with receptive language. In another research; an unconditional cash transfer in Ecuador, however, Fernald and Hidrobo (2011) found no effects on height-for-age z-score among other health and child development outcomes.

Lagarde *et al*. (2009) reviewed 29 papers on the impact of conditional cash transfers on access to care and health outcomes. They limited their analysis to conditional cash transfers and settled on ten papers reporting results on six studies and concluded that conditional cash transfers may lead to a number of benefits to health for poor populations. For children's anthropometric outcomes in particular, they found positive effects on children's growth; an 'increase in height by about 1 centimeter amongst children less than 4 years old'. Interestingly, they discovered contradictory findings on the impact on height-for-

age Z-scores with one study reporting a significant increase while the other indicating a negative impact; though similar in magnitude.

Morris *et al*. (2004), working on *Bolsa Alimentacao* in Brazil, also found a negative and significant impact on mean height-for-age for children under the age of 7 years. However, they did not find a significant impact on height-for-age for children under the age of 20 months; for children aged 24 – 48 months; and for children aged 4 – 7 years. Neither did they find a significant impact on weight-for-age for children under the age of 24 months; for children aged 24 – 48 months; for children aged 4 – 7 years; and for all children under the age of 7 years.

Another piece of literature on the impact of cash transfers on children's height comes from Behrman (2005) and from Gertler (2000). Working on *Progresa* in Mexico, Behrman (2005) discovered a significant impact on the height of children aged 12 – 36 months (an increase in height by 1.016 centimeters) and children aged 24 – 36 months (an increase in height by 1.224 centimeters). However, the author did not find significant results for children aged 4 – 12 months; and for children aged 36 – 48 months. Also working on *Progresa*, Gertler (2000) also found a significant impact on the height of children aged 12 – 36 months; discovering an increase in height by 0.959 centimeters. These results are also well summarized in Lagarde, Haines, and Palmer (2009). Other researches which concentrated on height-for-age and weight-for-age, as summarized by Manley *et al*. (2013) who reviewed 30,000 articles relating cash transfer programs and height-for-age, are by Ahmed *et al*. (2009); Vera-Hernadez *et al*. (2010); Gitter *et al*. (2010); Rivera *et al*. (2004); Barrios *et al*. (2008); Perova and Vakis (2009); Gomez *et al*. (2010); and Himaz (2008). All this work is on Latin American experiences except the work by Ahmed *et al*. (2009) and Himaz (2008) which is based on South Asian experience; Bangladesh and Sri Lanka in particular.

Parker, Rubalcava and Teruel (2008) reviewed cash transfers in Mexico, Nicaragua, Honduras, Colombia, Brazil and 'other countries' (Bangladesh and Cambodia). They concluded that 'the diverse studies showed almost uniformly positive results on the short-term indicators measured'; including, among others, better health. However, they noted that although conditional cash transfers are generally regarded as successful, it is not clear the success comes from the price effect (conditionality) or some other factors such as the income effect or 'the potential intra household allocation effect deriving from women receiving the transfer'. To this effect, there is a large body of literature that pays particular attention on conditional transfers versus unconditional transfers. Before looking at the existing literature on the Child Support Grant, it is worthwhile to pay special attention to the current debates in the literature on conditional versus unconditional cash transfers for the obvious reason that this subject is also very rive in South Africa.

3.4 Conditional versus Unconditional Cash Transfers

Cash transfers can be conditional or unconditional with conditional transfers prominent in many Latin American countries (Parker, Rubalcava, and Teruel, 2008; Skoufias *et al*. 2001; Angelucci *et al*., 2009; Behrman *et al*., 2005; Rawlings and Rubio, 2005). The case of conditional versus unconditional has been debated extensively in the literature. While significant impacts have been demonstrated quantitatively, Adato, Roopnaraine and Becker (2011) argued, little attention is paid to why conditional cash transfers have these observed impacts, and as importantly – why impacts are not greater than they are. Several arguments are advanced for and against conditions. Fiszbein and Schady (2009), for example, developed an illustrative depiction of considerations to be taken into account in order to determine whether conditioning is the right policy instrument. Assuming rationality among economic

agents, well-functioning markets and competent governments, the best option would be unconditional cash transfers. Revealed preferences have shown that unconditional cash transfers are more preferable and consumers are at least as well-off under a cash transfer just as they would under a subsidy for a particular good.

Conditions work well if private investment in children's human capital is believed to be below private optimal level emanating from either misguided believe about the nature of process of investments in the human capital development of a child (it can also be due to a failure to understand the underlying investment returns thereto) to what the authors called 'imperfect information, myopia, and incomplete altruism' or it can be below the social optimal level. Parents normally make investment decisions for their children. Viewed in another way, there exists a principal-agent relationship. If parents discount the future at a higher rate, they demand a suboptimal level of schooling for their children. In the presence of credit market constraints and such a principal-agent problem, this would be more akin to a lower expected rate of return to education. In that case, then a conditional cash transfer would be more appropriate.

In the presence of wrong beliefs and credit market imperfections, even an unconditional transfer will have an income effect that would reduce the effect of missing credit markets on educational investment but however, a conditional transfer would have a larger positive effect on investment. Fiszbein and Schady (2009) argued that this emanates from the fact that a conditional transfer adds a substitution effect to the income effect of the unconditional transfer. In a case where credit constraint is the only market failure, an unconditional transfer is more appropriate.

There are political considerations as well. Conditioning may increase public support for the office bearers or even so as a result of influences of voting, lobbying and political bargaining. Society may be putting more value on the consumption of a particular good such as education such that additional consumption of the good is viewed as socially acceptable leading to conditions to incentivize its consumption. Fiszbein and Schady (2009) argued that the conditions would then be justified by merely making redistribution more acceptable to taxpayers and voters; a view shared by Parker *et al*. (2008) that conditional programs might be more attractive politically as they are less likely to be viewed as a "handout".

Conditions can be used as a screening mechanism and can induce self-selection for those actually intended by the program and those not intended opting out (Das *et al*, 2005) thereby ensuring that the poor receive more than the rich. A good example prevails in South Asia where conditions are placed on attendance in public schools because the rich use private schooling. In a context with extremely low school quality, unconditional cash transfers might increase welfare more than conditional cash transfers (Parker *et al*., 2008). Rey and Estevan (2013) reached the same conclusion. They investigated the relative merits of unconditional cash transfers, conditional cash transfers, and the effects of improvements in education quality on efficiency and welfare; concluding that under sufficiently accurate targeting, conditional cash transfers are more effective than unconditional cash transfers in enhancing the efficiency of household's decisions, however, an unconditional cash transfer is superior to conditional cash transfer in terms of welfare unless targeting is perfect, in which case they are equivalent; and that education quality is welfare improving, but may not be efficiency enhancing when public education quality is very low.

Paxson and Schady (2010) also examined both conditional and unconditional transfers. In their paper, they used a randomized 'new' social program in rural Ecuador to

assess the impact of relatively small cash transfers on child health and cognitive development and found no treatment effects for the sample as a whole, but modest effects for the poorest. Das *et al*. (2005) presented a case which shows that in the standard economic framework unconditional cash is better than conditional cash. They discuss how well conditional cash transfers address market failures and how well it targets resources to a particular group.

Results from Mexico by De Janvry *et al*. (2006, cited in Adato and Bassett, 2008) found that a one dollar of conditional cash transfer income is about eight times more effective at inducing enrolment than a dollar of unconditional cash transfer income, at the mean income of the poor. In a somewhat related approach, Brauw and Hoddinott (2011) exploited the fact that some beneficiaries who received transfers in a Mexican program did not receive the forms needed to monitor the attendance of their children at school and their results showed that the absence of these forms reduced the likelihood that children attended school with this effect acute when children are transitioning to lower secondary school. However, it is important to note that conditional cash transfers, just like public works programs, demand higher administrative capacity than unconditional programs (Sedlacek *et al*. 2003 cited in Samson *et al*. 2010). Unconditional transfers provide the most immediate short-to medium-term response and are good for countries with limited fiscal space since they deliver 'as much benefit as possible to the poor per unit expenditure' (ibid).

There are also a few evaluations comparing conditional and unconditional programs in African countries. Adato and Bassett (2008) noted that analysis of economic benefits and costs of conditionality are not easy and straight forward to quantify and even more difficult are the social benefits and costs. With a growing presence in Eastern and Southern Africa, unconditional cash transfers have proved to have positive impacts on welfare with pronounced impacts on school enrolment, attendance and nutrition; with impacts on health

found in Zambia, South Africa, and Malawi. Most of programs in Southern Africa are in their pilot stages; representing a new wave of social protection programs, though with limited coverage and weak institutionalization (Nino-Zarazua *et al*., 2012) except maybe in the case of South Africa. The Social Cash Transfer Scheme (SCTS), an unconditional program in Zambia, has registered an increase in enrolment rates by 8 percentage points for 14-15 year olds and 10.4 percentage points for 5-6 year olds (Adato and Bassett, 2009); and a drop in households not sending at least one child to school from 41.4 percent to 33.8 percent; an impact on enrolment for asset-poor households of between 6 and 11.4 percentage points in two of the three districts evaluated; a fall in self-reported incidence of illness of 14.2 percentage points among the elderly, 12 percentage point for children under five and adults of productive age.

In Malawi, The Mchinji Cash Transfer program saw a significant higher percentage of newly enrolled children of 8.3 percent in intervention households compared with 3.4 percent in comparison group; a 3 percentage points decrease in drop-out rates (Miller, Tsoka, and Reichert, 2008, cited in Adato and Bassett, 2009); a 13 percentage points decrease in incidence of illness for children compared with non-beneficiaries; and a 11 percentage points decrease in underweight although there was no change in weight-for-age z-score. In Mozambique, the GAPVU program recorded an increase of 0.2 standard deviations in height-for-age, if received in first year of life and for at least two-thirds of first three years.

In Ghana, the Livelihood Empowerment against Poverty (LEAP) combines conditional and unconditional cash transfers with social services. The conditions include school enrolment and retention, registration at birth, uptake of post-natal care and immunizations for young children, conditions on the fight against child trafficking and labor; and enrolment in the National Health Insurance Scheme (ibid). It targets vulnerable

population groups; the aged, un- and underemployed, HIV AIDS households, extreme poor, and the disabled.

One of the most recent works on unconditional cash transfers is by Haushofer and Shapiro (2013), who conducted a randomized controlled trial (RCT) of the unconditional cash transfer program implemented by the NGO *GiveDirectly* in Western Kenya between 2011 and 2012. The eligibility criterion was simply 'living in a thatched house'. They concluded that the unconditional cash transfer increased asset holdings by 58 percent over the control group mean and by 39 percent of the average amount transferred; increased food consumption by 20 percent and 30 percent reduction in food insecurity for respondents and 42 percent in the number of days children go without food; increased investment in and revenue from livestock and small businesses by 48 percent and 38 percent, respectively; and lead to a 0.18 standard deviation increase in happiness, a 0.15 standard deviations increase in life satisfaction, and a 0.14 standard deviations reduction in stress.

One of the important lessons from Haushofer and Shapiro's paper is on the design of unconditional cash transfers. The authors noted that 'monthly transfers have stronger effects on food security than lump-sum transfers, while lump-sum transfers show larger effects than monthly transfers on particular types of assets such as metal roofs. Large transfers produce larger treatment effects than small transfers on most outcomes, but with decreasing marginal returns'. They did not observe significant differences in outcomes when making transfers to the female versus the male in the household; all important for policy makers.

There are important debates in some countries whether to condition or not and South Africa presents an example of such (Hall, 2011; Gabel, 2012; Woolard and Leibbrant, 2010; Woolard, Harttgen and Klasen, 2010; Budlender and Woolard, 2006; Lund *et al*., 2008).

Africa presents a complex set-up which makes the debate even more meaningful; supply-side considerations are as important as the demand-side considerations. As Adato and Bassett (2008) noted, 'cash cannot be conditioned on services that are nonexistent, too far away, or of very poor quality'. As Manley *et al.* (2013) concluded, 'unconditional transfers do as well as anything, and transfers conditional on participation in health care are also effective. Setting other conditions may be counterproductive'. They noted that although the discussion on unconditional versus conditional transfers is predominant when discussing the value of cash transfers, 'conditionality appears to be much less important than a number of other issues, such as the age and sex of the children in the household and access to health care'.

Adato, Roopnaraine and Becker (2011) on the assumption that cash incentive will produce behavior change (on health care decisions) found multiple sociocultural and structural influences that compete with cash including beliefs around traditional and modern practices, social-cultural norms, gender relations, and the quotidian experience of poverty in many dimensions. They concluded that impacts can be increased through a better understanding of multiple contextual influences, and greater attention to the education components and complementary interventions.

The debate on conditional versus unconditional has always been very topical and it is very relevant in the case of South Africa and the Child Support Grant in particular[6]. The discussion so far has been on cash transfers in general. However, there is a growing body of literature on the Child Support Grant.

[6] There have been concerted efforts to put conditions on the Child Support Grant throughout the history of the program, which is always faced with running battles with civil society and child organizations opposing the imposition of conditions arguing that it is a right for children to get the support as enshrined in the country's constitution which undertakes to protect vulnerable members of the society by providing social protection.

3.5 Existing literature on the Child Support Grant

South Africa is one of the middle-income countries with a very high income inequality predating to the apartheid era. In general, however, social transfer programs in South Africa are believed to have reduced poverty gap by 47 percent (Samson *et al*. 2005 cited in Samson *et al*. 2010), and the country's Gini coefficient by three percentage points. Earlier works on the impact of cash transfers in South Africa looked at the impact of the Old Age Pension (Case and Deaton, 1998; Case, 2001; Duflo, 2003; Edmonds, Mammen and Miller, 2005; Edmonds, 2006; Hamudi and Thomas; 2005; Ardington, Case and Hosegood, 2009; Bertrand, Mullainathan, and Miller, 2003; Ranchhod, 2010; Posel, Fairburn, and Lund, 2006; all cited in Woolard and Leibbrandt, 2010; and Klasen and Woolard, 2005; Wittenberg, 2001; Jensen, 2004; Posel *et al*., 2004; cited in Budlender and Woolard, 2006).

Various earlier studies on the effect on children's education have found significant positive effect on children living in households that include Old Age Pension recipients (Lund, 1993; cited in Coetzee, 2011). The social pension in South Africa was estimated to have a long term effect on the underlying determinants of growth where school enrolment of children living in three-generation households increased by about 3.1 percent with 5 percent for the poor and 7 percent for girls (Scott, 2009).

For the Old Age, Duflo (2003) showed that girls whose grandmothers receive transfers have large improvements of 1.2 standard deviations in weight and height. In a similar work, Duflo (2000) found that pensions received by women improved girls' weight given height by 1.19 standard deviations and height-for-age by 1.16 standard deviations. Samuel et al. (2004 cited in Adato and Bassett, 2008) also concluded that household receipt

of an Old Age Pension is associated with a 20 to 25 percent reduction in school non-attendance gap.

For the Child Support Grant in particular, a study in Umkhanyakude District of KwaZulu-Natal Province found that the receipt of the cash transfer in 2002 was linked to an 8.1 percentage point increase in enrolment among 6-year-olds and a 1.8 point increase for 7-year-olds (ibid). Boler (2007, in Eyal *et al*., 2011) used the KwaZulu-Natal Income Dynamics Study and found that Child Support Grant receipt does not affect primary school completion rates. However, the research found out that it appears to protect boys from drop-out. These impacts interact with nutritional impacts; poor children are more likely to be late both in school enrolment and completion (Adato and Bassett, 2008).

Access to the Child Support Grant in the first three years of a child's life has been found to increase child height; a conclusion also reached by Aguero *et al*. (2007) working on KwaZulu-Natal children. Also writing on nutrition, Aguero and Carter (2010) analyzed the impact of grants on child height-for-age and found significant impacts. Aguero, Carter and Woolard (2010) also reached the same conclusion. Using survey data from Eastern Cape, Gauteng, KwaZulu-Natal, Limpopo and Western Cape provinces, the Department of Social Development found that the Child Support Grant increases the probability of monitoring the growth of a child in the first two years of life by 7.7 percentage points, and an improvement of height-for-age scores for children with mothers with eight grades of schooling (Tiberti, *et al*., 2013).

Coeztee (2011) used propensity score matching with a binary outcome variable to estimate the impact of the Child Support Grant on child health, nutrition and education; and concluded that no convincing evidence of improvements on any of the outcome variables is

found. The author further employed a generalized form of the propensity scores and discovered a positive treatment effect for children's height-for-age and progress through the school system but cautioned that although these estimates do provide some evidence of the positive effect of the Child Support Grant on the lives of children, the estimates are small and do not provide clear evidence that transfers received by caregivers are spent mainly on improving the well-being of beneficiary children.

Eyal and Woolard (2011) estimated the effect of the Child Support Grant on mothers' labor supply and discovered that there are no significant differences between mothers of eligible and ineligible children in the samples used, over the years. They also concluded that the effect of having an age eligible child is large and mothers who become recipients in their twenties experience an average increase in employment probability of 15 percent and in labor force participation of 9 percent. Tiberti, *et al*. (2013) used a micro-simulation-Computable General Equilibrium Analysis to find economy-wide impacts of the Child Support Grant and concluded that there was a positive link between the Child Support Grant and the probability of participating in the labor force. Other works on the impact of the Child Support Grant on labor market behavior include works by Williams (2007); CASE (2008); and Noble *et al*. (2008), cited in ibid.

A few studies looked at the impact of the Child Support Grant on gender related issues. Patel *et al*. (2012), for example, assessed the gendered impact of the Child Support Grant in Doornkop, Soweto and discovered that 'it plays a key role in reducing income poverty among the very poor'. Makiwane *et al*. (2006) analyzed whether the Child Support Grant increases teenage pregnancy and concluded that there is no relationship between teenage fertility and the Child Support Grant. This is an important conclusion; otherwise it was going to be a huge social cost.

McEwen and Woolard (2012) examined the fiscal impact of this rapidly expanding assistance program (Child Support Grant). They investigated the expected costs of cash transfers to children in South Africa up to 2015. Their major conclusion is that the child population is not expected to grow between 2008 and 2015 and thus the fiscal cost of the Child Support Grant is expected to stabilize in the near future.

Much of the work that has been done on the Child Support Grant tended to put more emphasis on health and nutrition outcomes. There are some that concentrated on education as well (Samson *et al*., 2008; Williams and Samson, 2007; Aguero *et al*., 2009; Budlender and Woolard, 2006; Samson *et al*., 2004; cited in Eyal and Woolard, 2011). As Fleisch *et al*. (2012) noted that there is a new direction of research on patterns of enrolment that comes from studies of the relationship between social grants and school enrolment and a few have begun to explore this relationship within the South African context. Although they have shown an interest in assessing the impact of the Child Support Grant on education, none has specifically paid particular attention to secondary-school- aged children; in part because only recently does the age eligibility apply to children aged 15 to 17 years. To my knowledge, this research is one of the very few to specifically concentrate on this group of children. To the best of my knowledge, I do not know any research that has empirically and rigorously evaluated the impact of the Child Support Grant on the enrolment of secondary-school-aged children. This dissertation bridges this gap in literature.

Boler (2007) used the KwaZulu-Natal Incomes Dynamics Study to study the impact of the Child Support Grant on primary school completion rates and reached an important

conclusion that it does not affect completion rates[7]. However, the study used data from one province of South Africa. I used a nationally representative data collected in all the nine provinces of South Africa. Although Coeztee (2011) analyzed the impact of the Child Support Grant on education among health and nutrition outcomes, the author used cross-sectional analysis and employed propensity score matching; reaching a conclusion that no convincing evidence of improvements on any of the outcome variables is found and cautions that there is no clear evidence that transfers received by caregivers are spent mainly on improving the well-being of children begs for more confrontation on the subject. My research confronts the subject with a bigger dataset and an analysis able to follow the same child over a longer period in trying to ascertain the true impact of the program; using different methodologies altogether.

On the other hand, Tiberti *et al*. (2013) were interested at looking at the economy-wide impacts of the grant focusing on multiplier effects with special attention to household-level impacts including changes in labor supply of different household members; investments of part of the funds into productive activities, and local economy impacts including transfers between beneficiaries and ineligible households; effects on local goods and labor markets; and multiplier effects on income and/or welfare. All important, however, this research focuses on finding out the impact of the program on the enrolment of secondary school-aged children and on health outcomes for children living in South Africa; at a very micro-level.

[7] Other works that concentrated on KwaZulu-Natal province include: Ardington, 1998; Case *et al.*, 2005; Hamoudi and Thomas, 2005; Aguero *et al*., 2005; Yamuchi, 2005 (all cited in Budlender and Woolard, 2006).

3.6 Conclusion

Social Protection has a long history in South Africa (as way back as 1928; ibid) and the Child Support Grant, though fairly a recent program compared to other programs, has been around for 14 years now. The Child Support Grant presents an interesting case study chiefly because of its size and coverage and more importantly because it offers a platform to compare it with results from the much celebrated Latin American and Asian conditional cash transfers. Much of the work on cash transfers draws from Latin American experiences; as shown in this chapter. This research contributes to the existing literature on cash transfers in general and a case of South Africa in particular.

This research is more-timely in understanding the impact of this form of poverty alleviation strategy in South Africa. There is a renewed interest in cash transfers with a number of pilot projects in Southern and Eastern Africa; and no doubt, it is more urgent to gain a better and fuller understanding in order to influence policy in this region. The next two chapters are devoted to assessing the impact of the Child Support Grant on enrolment and health for children in South Africa.

CHAPTER 4

AN IMPACT EVALUATION OF THE CHILD SUPPORT GRANT ON THE ENROLMENT OF SECONDARY-SCHOOL-AGED CHILDREN IN SOUTH AFRICA

4.1 Introduction

There has been a growing interest in understanding the impact of unconditional cash transfers on poverty alleviation and human capital development. Most of this attention is on pilot experiences in East and Southern Africa. Cash transfers, in general, are widely believed to be an alternative strategy for poverty alleviation.

South Africa's Child Support Grant is the largest cash transfer for children in Africa; reaching to 11 million children in a country with 18.6 million children under the age of 18 and where 11.9 million children live in income poverty (UNICEF, 2011). It accounts for 36.8 per cent of total budget towards social assistance and is only second from the Old Age grant which consumes 39 per cent of the total budget towards social assistance (National Treasury, National Budget; 2013). Eligibility for the Child Support Grant is based on two criteria: age for the child and means-test income threshold for the caregiver. Over the years, the age eligibility criterion has been raised starting from children under the age of 7 in 1998 to children under the age of 18 by 2013. The grant amount has been growing at a rate of 6 per cent starting at R 100 per month per child in 1999 and reaching R 320 by October, 2014. A total of six eligible children from an eligible caregiver are allowed to benefit from the Child Support Grant. It is therefore an important source of income for poor families with many children and an increase to include children under the age of 18 has important welfare implications to society.

This research sought to find out the impact of the Child Support Grant on schooling with special attention on enrolment of secondary-school-aged children. There was an important change in government policy in 2008 concerning means-test eligibility criteria for married caregivers that offers a 'natural' opportunity to create a good counterfactual to assess the impact of the program. South Africa has a serious challenge as far as secondary school education is concerned. Dropout rates are as low as less than 3 percent from grade zero to grade 6 (primary school) but as children enter into secondary school, dropout rates increase sharply and increase by grade reaching as high as 40 percent by the time children reach grade 10 and reaching almost 50 percent by the time children sit for their matric, which is taken in grade 12. There is no difference in dropout rates between boys and girls from grade zero to grade 6 but the gap widens as children enter secondary school and for the entire period of secondary school life; with dropout rate for boys being higher than that of girls. The most cited reason for dropping out of secondary school is financial constraints; with 24 percent of all children, 23 percent of all boys and 18 percent of all girls citing financial constraint as the main reason for dropping out of school.

Now that the Child Support Grant caters for all children under the age of 18 years, it is now also an important source of income for secondary-school-aged children as well. I hypothesize that the Child Support Grant has a significant impact on the enrolment of secondary-school-aged children. I also hypothesize that the Child Support Grant has a significant impact on the enrolment of secondary-school-aged boys. The chapter proceeds as follows: Section 4.2 is on literature review; Section 4.3 covers data and data treatment; Section 4.4 dwells on the methodology and empirical strategy and Section 4.5 presents the results. Section 4.6 concludes the chapter.

4.2 Brief Literature Review and hypotheses

A lot of work on cash transfers is on Conditional Cash Transfers (CCTs) with detailed experiences from Latin America (Rawlings and Rubio, 2005; Angelucci and Attanaso, 2009; Behrman *et al*., 2005; Skoufias *et al*., 2001; Das *et al,* 2005; Paxson and Schady, 2010; Bastagli, 2008; Gertler *et al*., 2006) and in South East Asia (Chaudhury and Parajuli, 2006; Meng and Pfau, 2012; Ferreira *et al*., 2009). Many of these researches document success stories in increasing enrolment rates; among other outcome variables. However, as Haushofer and Shapiro (2013) also noted, unconditional cash transfers are relatively less common and their impacts and design are also less well understood. Schubert and Slater (2006) argued that there have been no rigorous analyses of the respective costs and benefits of conditional versus unconditional transfers.

Recently, there has been renewed interest in understanding whether cash transfers should be conditioned or not. Baird, McIntosh, and Ozler (2011) assessed the role of conditionality in cash transfer programs using a unique experiment featuring two distinct interventions; unconditional transfers (UCT arm) and conditional on school attendance, targeted at adolescent girls in Malawi. They observed a modest decline in dropout rate in the UCT arm in comparison with the control group (it was only 43 percent as large as the impact in the CCT arm at the end of the 2-year program[8].

In a similar approach, Robertson *et al*, (2013) carried out a matched, cluster-randomized controlled trial in ten sites in Manicaland province, Zimbabwe, to investigate the effects of unconditional cash transfers (UCTs) and conditional cash transfers (CCTs) on birth

[8] The authors also found out that teenage pregnancy and marriage rates were substantially lower in the UCT than in the CCT arm, entirely due to the impact of UCTs on these outcomes among girls who dropped out of school.

registration, vaccination uptake, and school attendance. They found out that, compared with control clusters, and the proportions of children aged 6-12 years who attended school at least 80 percent of the time was 7.2 percent higher in the UCT group and 7.6 percent in the CCT group than in the control group.

A noticeable amount of work on social protection in general and cash transfers in particular also exist in South Africa. Various earlier studies on the effect on children's education have found significant positive effect on children living in households that include Old Age Pension recipients (Lund, 1993; cited in Coetzee, 2011). The social pension in South Africa was estimated to have a long term effect on the underlying determinants of growth where school enrolment of children living in three-generation households increased by about 3.1 percent with 5 percent for the poor and 7 percent for girls (Scott, 2009). These impacts interact with nutritional impacts; poor children are more likely to be late both in school enrolment and completion (Adato and Bassett, 2008).

A study of an unconditional cash transfer in Umkhanyakude District of KwaZulu-Natal Province found that the receipt of the cash transfer in 2002 was linked to an 8.1 percentage point increase in enrolment among 6-year-olds and a 1.8 point increase for 7-year-olds (ibid). Samuel *et al*. (2004 cited in Adato and Bassett, 2008) also concluded that in South Africa household receipt of an Old Age Pension is associated with a 20 to 25 percent reduction in the non-attendance gap. Boler (2007, in Eyal *et al*, 2011) used the KwaZulu-Natal Income Dynamics Study and found that the Child Support Grant receipt does not affect primary school completion rates. However, the paper found out that it appears to protect boys from drop-out.

Coeztee (2011) used propensity score matching with a binary outcome variable to estimate the impact of the Child Support Grant on child health, nutrition and education and concluded that no convincing evidence of improvements on any of the outcome variables is found. The author further employed a generalized form of the propensity scores and discovered a positive treatment effect for children's height-for-age and progress through the school system but cautioned that although these estimates do provide some evidence of the positive effect of the Child Support Grant on the lives of children, the estimates are small and do not provide clear evidence that transfers received by caregivers are spent mainly on improving the well-being of beneficiary children.

Much of the work that has been done on the Child Support Grant tended to put more emphasis on health and nutrition outcomes. There are some that concentrated on education as well. For example, Boler (2007) used the KwaZulu-Natal Incomes Dynamics Study to study the impact of the Child Support Grant on primary school completion rates and reached an important conclusion that it does not affect completion rates. However, the study used data from one province of South Africa. This dissertation contributes to the current literature on the impact of the Child Support Grant on education by using a nationally representative data collected in all the nine provinces of South Africa; and the results thereto will advise policy-makers at the national level. Although other researchers looked at the impact of the Child Support Grant on education, none to the best of my knowledge has paid particular attention to the impact of the Child Support Grant on the enrolment of secondary-school-aged children. This is, in part, due to the fact that the age-eligibility has been recently adjusted to include children aged 15, 16, and 17 years. This dissertation bridges this gap in literature by providing a rigorous empirical evaluation of the impact of the Child Support Grant on the enrolment of secondary-school-aged children. It contributes to the existing literature on cash

transfers in general and a case of South Africa in particular. This research is timely in understanding the impact of this form of poverty alleviation strategy in South Africa on human capital development.

4.2.2 Testable hypotheses

In general, enrolment rates in South Africa are high especially for children aged 6 – 13 years; with rates well above 90 percent for this group. Dropout is negligible in primary school (grades 0 – 6). There is, however, a clear and noticeable trend for children aged 14 – 17 years. Dropout rates increase year-on-year thereafter and higher for males than for females beginning in grade 6. This age cohort is mainly comprised of children who are more likely to be in secondary school. Enrolment rates for this group falls with age; with enrolment rates for 17 year olds averaging 85 percent. In 2010, for example, there were more than 1 million grade-ten pupils but two years later when this cohort reached grade 12, the graduating class, their number had fallen by half (Economist, 3rd May 2014). For those who were in grade 11 in 2008, about 40 percent of both males and females had dropped out of the schooling system without completing matric[9] (taken in grade 12) by 2010 (NIDS, 2012; Branson *et al*., 2013). From grade 6 onwards, dropout rates are higher for boys than for girls. This steep drop-out before the matric has been a persistent pattern in recent years. The high drop-out rate when coupled with already low pass rates (forty percent who start school pass the matric in grade 12, and only 5 percent pass math with a mark above 50 percent, and only 12 percent achieve high enough marks to get into universities), has important policy

[9] Yet completing grade 12 has been found to protect post-secondary adults from unemployment and idleness. Branson *et al*. (2013) discovered that only 40 percent of respondents under 26 years who completed grade 12 (matric) are either unemployed or out of the labor force compared to 70 percent of respondents who completed grade 10 and 11 but did not complete matric.

implications. The most common reason cited for dropping out of school is financial constraint; 23 percent of male dropouts and 18 percent of female dropouts cited that they could not afford to stay in school (ibid). Now that the Child Support Grant caters for all children under the age of 18 years; virtually all children in South Africa, the program is an important source of income for secondary-school-aged children as well. Therefore, the following hypotheses are worth testing:

Hypothesis 4.1: The Child Support Grant has a significant impact on the enrolment of secondary-school-aged children in South Africa.

Hypothesis 4.2: The Child Support Grant has a significant impact on the enrolment of secondary-school-aged girls in South Africa.

Hypothesis 4.3: The Child Support Grant has a significant impact on the enrolment of secondary-school-aged boys in South Africa.

Now that the age-eligibility criteria for the Child Support Grant has been expanded to include children under the age of 15, 16, 17 and 18 (secondary-school-going ages) in 2009 to 2012 respectively, it is important to empirically test whether the Child Support Grant is encouraging children to stay longer in school than they used to do; by assessing the impact of the program on the enrolment of secondary-school-aged children in South Africa and hence contribute to the literature on cash transfers in general and to the limited work on the impact of the Child Support Grant on the enrolment of secondary-school-aged children and its role on human capital development by answering the question: *What is the impact of the Child Support Grant on the enrolment of secondary-school-aged children in South Africa?*

4.3 Data

4.3.1 South African General Household Survey (GHS) Data

I made use of the South African General Household Survey (GHS) data published by Statistics South Africa. The survey has been executed annually since 2002 and can be used to determine the level of development, performance of programs and to measure multiple facets of living conditions of households in South Africa. It covers six broad areas; namely education, health and social development, housing, household access to services and facilities, and food security and agriculture. The GHS is a nationally representative data since the survey covers all the nine provinces of South Africa. I used data from 2007 to 2012; inclusively, restricting my analysis to secondary-school-aged (13 to 18; inclusive) children and the whole dataset for the six consecutive year period provided me a total of 77 745 secondary-school-aged children.

Table 4.1 in appendix reports descriptive statistics for enrolment and all other control variables used in the regressions. Overall enrolment rates increased from 90 percent in 2007 to 93 percent by 2012. They tend to be higher among the lower age cohorts and falling with age suggesting a general trend where children drop off from school. There was a general trend where enrolment rates were increasing each year when considered per age cohorts. Generally, each household has an average size of 6 people, an average of 3.4 siblings and a household head with an average age of 52 years and seven years of education. In 2007, 8.7 percent of the children were from double income households and the other years were averaging 7 percent except for 2012 with a figure of 10.1 percent. For all the years, there were as many male children as female children; on average. The percentage of mothers who are resident is twice as high as the percentage for fathers who are resident for almost all the

years. There was a marked increase in the uptake of the Child Support Grant over the whole period; starting with a mere 8.8 percent in 2007, increasing successively each year and reaching a high of 50.8 percent by 2012.

Table 4.2 shows descriptive statistics by age. The 15 year old cohort had an enrolment rate of 94 percent in 2007 and reached 97 percent by 2012. Correspondingly, the uptake of the Child Support Grant was 2.2 percent in 2007 and reached a high of 56.5 percent by 2012. Enrolment rates for the 16-year olds, although high, increased from 92.2 percent in 2007 to 93.1 percent in 2011 and 94.4 percent in 2012. Relatively, enrolment rates for 17-year-olds were at 86.6 percent in 2007 and increased to 87.4 percent by 2011 and 88.7 percent in 2012. Enrolment rates for children aged 16 and 17 years are comparatively lower suggesting that children drop out of school year by year. This has serious implications on secondary-school completion. On average, children sit for the matric national examinations when they reach 17 years; in grade 12. This, therefore, suggests that few children reach grade 12 and few children sit for the national examinations.

Enrolment rates among the treatment group based on 2008 means-test threshold were 88.8 percent in 2007 and increased to 90.1 percent in 2008 and 91.8 percent by 2012. Correspondingly, enrolment rates among the control group were 89.7 percent in 2007 and 2008 and levelling off at an average of 85 percent in 2010, 2011 and 2012. Enrolment rates for the treatment group based on 2012 means-test threshold were 90.4 percent and increased to 93 percent in 2008 compared to 89.6 and 89.5 in 2007 and 2008 respectively for the control group; as detailed in Table 4.3 in appendix. Generally, enrolment rates fell slightly in both treatment and control groups in 2009 (probably suggesting an exogenous shock from the global financial crisis). This does not have a serious problem with the identification strategy

discussed later because it affected both the treatment and control groups. It was going to be worrisome if this had affected only one group.

Table 4.4 shows descriptive statistics of child characteristics by treatment and control groups in 2007 (base year); based on the 'low income' control group. The difference in average enrolment rates between children in the control and treatment groups are statistically not different from zero (p-value = 0.267); suggesting that the average enrolment rates were the same for the two groups in 2007. The average age of the children in the control group was 15.7 years and 15.68 years for children in the treatment group; the difference of which is statistically insignificant (p-value = 0.834). The average proportion of boys in both the control and treatment groups is the same and the difference in the means is statistically not different from zero (p-value = 0.916); which is the same for the proportion of girls in the two groups.

There were 2.5 percent white children in the control group and 1.8 percent in the treatment group and the difference between them is statistically negligible. Sixty-four percent of children were under seventeen years in both the treatment and control groups. Other characteristics checked are: number of siblings; household size; head's education; head's age; proportion of children in grades 7, 8, and 10; and proportion of children in provinces, which were all not statistically different from each other. The fact that the treatment and control groups had similar characteristics in 2007 is a very important premise for the difference-in-differences framework; which is detailed in the next section. For the Difference-in-Differences framework to work well, both the treatment and control groups should be comprised of similar characteristics before a change in policy. This point is confirmed here by the insignificant p-values, which measure the difference in means. I will come back to this point fully under methodology and identification strategy in the next section.

Table 4.5 details descriptive statistics of take-up rates of the Child Support Grant from 2007 to 2012 by treatment and control groups. Panel A and Panel B of Table 4.5 show take-up rates by treatment and control groups based on 2008 means-test threshold respectively whereas Panel C and Panel D show take-up rates by treatment and control groups based on 2012 means-test threshold. Take-up rates in treatment groups saw a sharp increase from a low of 6 percent and 4 percent in 2007 reaching 34.3 percent and 30.6 percent by 2010 to a high of 53.7 percent and 51.4 percent by 2012 for treatment groups based on 2008 and 2012 means-test thresholds respectively. Take-up rates remained relatively low throughout the time period in the high income control groups starting with a low of 2.6 percent and averaging less than 10 percent by 2010. This is attributed to the fact that the high income control group is largely means-test ineligible for the grant. On the other hand, Table 4.6 shows descriptive statistics of enrolment by gender from 2007 to 2012. Panel A shows enrolment rates for girls; Panel B for boys; Panel C for treatment group by gender; and Panel D for control group by gender. Enrolment rates for boys grew over time at a higher rate from 89.5 percent to 93 percent in 2007 and 2012 respectively as compared to those for girls in the treatment group which grew from 88 percent to 90.6 percent in the two time periods respectively.

4.3.2 National Income Dynamics Study (NIDS)

My second data came from the National Income Dynamics Study. The National Income Dynamics Study (NIDS) is the first nationally representative panel data in South Africa, which came into being through a Presidential Decree. The NIDS is a comprehensive study which investigates the livelihoods and well-being of households and individuals over time and how they cope with shocks in life. It examines changes in poverty; household

composition and structure; demographic perspectives and development including fertility, mortality and migration; economic activity and labor market issues; human capital development on health and education; as well as changes in vulnerability and social capital. The study has three waves: the first wave carried out in 2008; wave 2, which was conducted in 2010 and early 2011; and wave 3, which was carried out in 2012 and became available in September, 2013.

The NIDS enables me to study children as they transition through phases of life and gives an opportunity to gain a deeper understanding of the underlying fundamentals that facilitate or impede their progress through education. In assessing the impact of the Child Support Grant on the enrolment of secondary-school-aged children, I used Wave 2 and Wave 3 data of the National Income Dynamics Study. I limited my sample to children aged 13 – 18 years in 2010. Using Wave 2 instead of Wave 1 was motivated by taking into consideration the age eligibility criterion and the fact that the NIDS is a longitudinal study. Any child who was above the age of 13 years was not eligible for the Child Support Grant in 2008; making my analysis where I am particularly interested in children aged 13 – 18 years not feasible when using Wave 1 because a child aged above 13 years would transition through secondary school education without receiving the Child Support Grant owing to being age-ineligible. On the other hand, the age eligibility criterion was adjusted to include all children under the age of 16 years; under the age of 17 years; and under the age of 18 years in 2010; 2011; and 2012 respectively; making Wave 2 (carried out in 2010) and Wave 3 (carried out in 2012) more appropriate to gain insight into the impact of the Child Support Grant on the enrolment of secondary-school-aged children. A child aged 13 years was age-eligible in 2010 and would be 15 years old in 2012 and still age-eligible for the grant. Likewise, a child aged 15 years in 2010 was age-eligible and would be 17 years old in 2012 and still age-eligible for the grant.

Descriptively, the average age of children in my sample of secondary-school-aged children was 15.3 years in 2010 and 16.9 years in 2012; with 49 percent of all children comprised of boys in the two time periods. Enrolment rates averaged 93 percent and 88.7 percent in the two time periods respectively. The proportion of children who reported having passed the previous year fell from 91.4 percent in 2010 to 77.8 percent in 2012. Thirty-two percent of children received the Child Support Grant in 2010 compared to 38.1 percent in 2012. On average, 10.3 percent of all children aged 13 – 18 years were of mixed races in 2010 and 10.5 in 2012; 1.25 percent whites; and 0.79 percent in 2010 and 0.68 percent in 2012 were of Indian origins; and the remainder were of African origin.

In terms of household characteristics, average household size was 6.7 and 6.4 persons in 2010 and 2012 respectively; 85.5 and 82.1 percent had their mothers still alive in 2010 and 2012 respectively. The proportion of children who had their fathers alive fell from 73.8 percent in 2010 to 67.3 percent in 2012. There was an increase in household real income from R 4 723 in 2010 to R 4 970 in 2012; as detailed in Table 4.7.

Breaking the sample according to geo-regions, 7.4 percent and 6.9 percent of children were living in formal rural areas; 54.4 percent and 52.8 percent lived in Tribal Authority areas; 5.9 percent and 6.3 percent lived in informal urban areas; and the remainder lived in formal urban areas in the two time periods respectively. Disaggregating the sample into different geo-regions is important and insightful. Formal rural areas, for example, are ‘sparsely populated areas in which people farm or depend on natural resources, including villages and small towns that are dispersed through these areas’ and are characteristic of inadequate physical conditions in schools and with comparatively weak learner performance. Many rural schools lack clean running water, electricity, libraries, laboratories and computers as well as a lack of accompanying good quality local services.

4.4 Methodology

4.4.1 Natural Experiment

The Child Support Grant is regulated under the Social Assistance Act 13, 2004 and any changes to it are announced through a government notice and published in the government gazette. There have been several announcements and amendments that have been made since 1998. Notable were the adjustments in the grant amounts over the years, which have been increased generally by 6 per cent each time; as well as age eligibility of children.

Before August 22, 2008, the means-test threshold was set at R 800 for households in the urban areas and R 1,100 for households in the rural areas. There was no distinction between single and double income caregivers. The policy tended to disadvantage against double income caregivers since household income was used and double income caregivers were more likely to fall above the means-test threshold. Furthermore, before 22 August 2008, there was no scientific way to calculate the means-test cut-off; it was just done through a government notice and had stayed at R 800 and R 1,100 for urban and rural households respectively for a very long time; for 10 years.

The 'Social Assistance Act 13 of 2004: Regulations relating to the application for and payment of social assistance and the requirements or conditions in respect of eligibility for social assistance, Government Gazette 31356, Government Notice Number R. 898 of 22 August 2008' brought drastic policy changes that would never have been anticipated thereby providing a natural experiment in the administration and regulation of the Child Support Grant. For the first time in the history of the Child Support Grant, the means-test threshold was to take into account double income caregivers by recognizing the determination as 'half

the annual income of the applicant and his or her spouse, where the applicant is in a spousal relationship'. This means that:

Letting W_H = husband's annual income,

W_W = wife's annual income,

C_{HI} = combined household income,

A = annual income threshold

$$C_{HI} \equiv \frac{W_H}{2} + \frac{W_W}{2} \leq A \rightarrow W_H + W_W \leq 2\text{A}$$

What this means therefore is that, with effect from 22 August 2008, the means-test threshold for double income caregivers is now double the income threshold for single income caregivers. This is a landmark change in policy for double income caregivers, which gives a natural experiment to assess the impact of the Child Support Grant on a number of outcome variables. Now there are households who are in a spousal relationship and before this landmark change in policy were not eligible for the Child Support Grant but who found themselves eligible after the change in policy. This change in policy was so drastic and was never anticipated so much so that it acts as a natural experiment. People might have anticipated a change in grant amount considering that it has been growing constantly at 6 per cent; it is difficult, however, to think that households might have anticipated the drastic change in policy now affecting double income caregivers. It was a landmark change in policy; one that does not have a precedence from 1998 to 2008.

Furthermore, and for the first time, the determination of the means-test threshold was going to be based on the following formula:

A = B x 10; where

i. A = annual income threshold

ii. B = annual value of the Child Support Grant

With this regulation, the means-test threshold adjusts automatically when the grant amount is adjusted. This also means that from 22 August 2008, there would not be any distinction between means-test thresholds for urban and rural households. Urban and rural households' means-test thresholds are now determined using the same formula. This is relatively more scientific and straight forward a determination than the one previously used.

This presents a natural experiment to assess the impact of the Child Support Grant on enrolment; for example. There are double income caregivers who, before the change in policy, were not eligible because their income was greater than the single income threshold and because the policy did not recognize that they were double income caregivers, they tended to be naturally 'discriminated' by the prevailing policy. After the drastic change in policy, these households found themselves eligible for the grant. This allows the employment of the Difference-in-Differences method to assess the impact of the Child Support Grant on enrolment. Difference-in-Differences method is well-suited to estimating the effect of sharp changes in government policy (Angrist and Krueger, 1999). This entails designing treatment and control groups in order to separate the change in enrolment rates as a result of the program from changes that affected enrolment in general. Treatment group is comprised of children who are age-eligible and whose caregiver(s) were not means-test eligible before the change in policy but who found themselves eligible after the change in policy. Control group is comprised of children who are age-eligible and whose caregiver(s) were means-test ineligible before the change in policy and remained ineligible after the change in policy.

Alternatively, for robustness check, another control group comprises of children who are age-eligible and whose caregiver(s) were means-test eligible before the change in policy and remained eligible after the change in policy.

The sudden change in policy allows me to use Instrumental Variable Method as well; having an age-eligible child in the expanded years is correlated with the Child Support Grant but is not directly related with enrolment. More importantly too, the fact that I also have data with repeated observations allows me to deal with unobserved fixed characteristics after which my explanatory variables become strictly exogenous and as a result the program impact estimate will be a true reflection of the impact of the Child Support Grant on the enrolment of secondary-school-aged children. Given this background, I used the Difference-in-Differences framework, Instrumental Variables and Panel Fixed Effects methods to estimate the impact of the Child Support Grant on the enrolment of secondary-school-aged children.

4.2.2 Empirical Strategy

1. *Difference-in-Differences Model*

The Difference-in-Differences estimator takes advantage of a comparison of participants and non-participants before and after the intervention (Khandker et al., 2010). This works by identifying treatment effect through comparing average difference between treatment and control groups; as Kim et al. (2008) put it, 'the DD estimator is often used to estimate a causal treatment effect when the outcome of interest is observed for both treatment and comparison groups before and after the treatment in question'. The main assumption is that the treatment should determine which potential response is realized, but be otherwise

unrelated to it (Myoung-Jae Lee, 2005). The model specification that I worked with is as follows:

$$S = \beta_0 + \delta_0 d2 + \beta_1 dT + \delta_1 d2.dT + \theta_k X_k + \varepsilon$$

In this case β_0 captures the control group in 2007 and the sum of β_0 and δ_0 captures the effect to the control group in the 'after' period. The coefficient, δ_0, is the before and after difference for the control group. It is the counterfactual measure of the treatment group in the 'after' and the 'before' period; reflecting what the treatment group would have been in the absence of the program. The sum of δ_0 and δ_1 is the difference in the treatment group between the two years or time periods. The coefficient of interest is δ_1 which measures the true impact of the program. It is the Difference-in-Differences estimator. *S* is the outcome variable; enrolment.

I borrow from Eissa and Hoynes (2006) who used a similar treatment to assess the impact of the Earned Income Tax Credit (EITC). Their idea was to use an exogenous change in tax rates as a 'natural experiment'. In a natural experiment, the objective is to identify a group that is affected by the exogenous shock (the treatment group) and another that is not (the control group). The difference between the response of the treatment group and the control group is the Difference-in-Differences estimator. One of the major criticisms of Eissa's approach by James Heckman was the potential endogeneity problem emanating from people moving from the treatment to the control group and vice versa making for a very poorly controlled experiment. The control group for those who were not means test-eligible because their household income was high are less likely to move backwards into treatment group unless there are major structural changes.

2. Instrumental Variables Method

The framework that I worked with involves identifying a variable that is correlated with the Child Support Grant but not itself directly correlated with enrolment. My instrument for the Child Support Grant is whether a household 'has a child in the expanded year'. For a child to receive the grant, the eligibility criterion is based on being age eligible and from a means-test eligible household. Having an eligible child is surely correlated with receiving the Child Support Grant. However, because the program is largely unconditional, being eligible for the grant is not itself directly correlated with enrolment.

The motivation on this part is driven by the fact that Instrumental Variable Method can be used where treatment effect heterogeneity is important. As Angrist and Pischke (2009) noted, a framework with heterogeneous treatment effects allows an assessment of both internal and external validity of IV estimates. I develop my model as follows:

Let:

$$S_i(d, z)$$

$$= \textit{potential enrolment of child i were this child to have treatment status } D_i$$

$$= d \textit{ and instrument value } Z_i = z$$

$D_{1i} =$ child *i*'s treatment status when $z_i = 1$

D_{0i} = child *i*'s treatment status when $Z_i = 0$

$$D_i = D_{0i} + (D_{1i} - D_{0i})Z_i = \pi_0 + \pi_{1i}Z_i + \varepsilon_i = \textit{Observed Treatment Status}$$

where:

$$\pi_0 \equiv E[D_{0i}] \textit{ and } \pi_{1i} \equiv (D_{1i} - D_{0i})$$

Given this framework, π_{1i}, therefore, is the heterogeneous casual effect of the instrument on observed treatment status.

Main Assumptions

The main assumption in this framework is that the instrument is as good as randomly assigned. This is derived from the independence assumption where the understanding is that it is independent of the vector of potential outcomes and potential treatment assignments:

$$\mathrm{E}[S_i|Z_i = 1] - E[S_i|Z_i = 0]$$

$$= \mathrm{E}[S_i(D_{1i}, 1)|Z_i = 1] - E[S_i(D_{0i}, 0)|Z_i = 0]$$

$$= \mathrm{E}[S_i(D_{1i}, 1) - S_i(D_{0i}, 0)]$$

and or

$$\mathrm{E}[D_i|Z_i = 1] - E[D_i|Z_i = 0] = E[D_{1i}|Z_i = 1] - E[D_{0i}|Z_i = 0]$$

$$= \mathrm{E}[D_{1i} - D_{0i}]$$

In short,

$$[\{S_i(d, z); \forall d, z\}, D_{1i}, D_{0i}] \perp Z_i$$

Since my model incorporates covariates, it is important to think of the instrumental variable as being 'as good as randomly assigned' conditional on covariates, X_i and my generalized case would be:

$$[\{S_i(d, z); \forall d, z\}, D_{1i}, D_{0i}] \perp Z_i|X_i$$

Using ‘having an age-eligible child in the expanded years’ as an instrument satisfies the assumption of randomness. For a child to be age-eligible for the grant that child must have been born after a certain year. For example, in 2008 only children under the age of 14 years were age-eligible for the grant; in 2009 children under the age of 15; 2010 children under the age of 16; in 2011 children under the age of 17 and in 2012 children under the age of 18. For a child to be age-eligible then that child must have been born after 1993. Only nature determines when and in which year a child is born; nature randomizes. It is, therefore, plausible to conclude that my instrument is as good as randomly assigned conditional on other covariates used in my regressions.

The second assumption is exclusion restriction:

$$S_i(d,0) = S_i(d,1) for\ d = 0,1$$

$$S_{1i} \equiv S_i(1,1) = S_i(1,0);$$

$$S_{0i} \equiv S_i(0,1) = S_i(0,0) \text{ and therefore,}$$

$$S_i = S_i(0,Z_i) + [S_i(1,Z_i) - S_i(0,Z_i)]D_i$$

$$= S_{0i} + (S_{1i} - S_{0i})D_i$$

This can conveniently be written as:

$$S_i = \alpha_0 + \rho_i D_i + \eta_i \,; where\ \alpha_0 \equiv E[S_{0i}] and\ \rho_i \equiv S_{1i} - S_{0i}$$

The third assumption is that while the instrument might have no effect on the probability of enrolment for some children, there is no child who has been kept out of school by coming from a household with a child in the expanded years (the instrument). This is the assumption of monotonicity; summarized as follows:

$$D_{1i} \geq D_{0i} \; or \; D_{1i} \leq D_{0i} \;\; for \; all \; i$$

Given these three assumptions, as Angrist and Pischke (2009) also argued, an instrument that is as good as randomly assigned, affects outcome through a single known channel, has a first stage, and affects the causal channel of interest only in one direction can be used to estimate the average causal effect on the affected group. The IV estimates of the impact of the Child Support Grant on enrolment using 'having an age-eligible child in the expanded years' captures the effect of the program on children who are enrolled because of the grant but who would not otherwise have enrolled.

3. Panel Fixed Effects

Some of the major concerns in impact evaluations are selection bias and omitted variable bias emanating from unobserved and fixed characteristics that are related to both outcome variables and explanatory variables. In my analysis, I am concerned with unobserved factors that affect enrolment that are correlated with some of my explanatory variables; for example innate ability. Highly motivated children or children with higher innate ability are more likely to be enrolled in school irrespective of the existence of the Child Support Grant. On another hand, some parents, probably because of a unique characteristic in them, are more likely to take up the Child Support Grant than others who do not possess such characteristic; and as a result, my explanatory variables are more likely to be endogenous. As Angrist and Krueger (1999) argued, I can use repeated observations to control for unobserved and time-invariant characteristics that are related to both dependent and explanatory variables. In a similar motivation, therefore, I used the Fixed-Effects identification strategy to estimate the impact of the Child Support Grant on the enrolment of secondary-school-aged children and the general model that I worked with is as follows:

$$S_{it} = X'_{it}\beta_t + C_{it}\delta_t + \lambda\alpha_i + \varepsilon_{it}$$

Where S_{it} is enrolment status for child *i* at time *t*; α_i is a fixed characteristic for child *i*; X'_{it} is a vector capturing a host of time varying covariates controlled for; C_{it} is the Child Support Grant status for child *i* at time *t*; and ε_{it} is uncorrelated with both the time-varying covariates and fixed characteristics (by construction).

This way, I have separated the correlation between the Child Support Grant and unobserved enrolment potential as well as unobserved unique fixed characteristics that make some parents take up the Child Support Grant to be described by an additive time-invariant covariate α_i, which has a constant coefficient each period enabling differencing between time periods to eliminate $\lambda\alpha_i$; and as a result my explanatory variables become strictly exogenous and the program estimate becomes the true reflection of the impact of the Child Support Grant on the enrolment of secondary-school-aged children. The main assumptions are that λ is time-invariant and the correlation between the Child Support Grant status, C_{it}, and the idiosyncratic error is zero in each time period.

Panel Fixed Effects identification strategy is appealing because of the superiority of repeated observations and the fact that Panel Fixed Effects models can be subjected to a variety of specification tests (Angrist and Krueger, 1999). As noted by Hsiao (2006), Panel Fixed Effects gives greater capacity for capturing the complexity of human behavior especially in evaluating the effectiveness of social programs. Panel data analysis has an added advantage of improving the efficiency of econometric estimates. Given this background, I exploited the richness and uniqueness of panel in assessing the impact of the Child Support Grant on the enrolment of secondary school aged children in South Africa. Using the three empirical methods detailed in this section, the next section details the results thereto.

4.5 Results

4.5.1 Results Based on Difference-in-Differences Estimations

Difference-in-Differences estimation results of the impact of the Child Support Grant on the enrolment of secondary-school-aged children in this chapter are based on the General Household Survey (GHS) data. Table 4.8 in the appendix shows results using both the 'Low income' and 'High income' control groups using 2007 and 2012 data on secondary school-going-aged (13 to 18) children. Columns 1 to 3 show results based on 2008 means-test threshold; which was pegged at R 2 200 for single caregivers and implying R 4 400 for double income caregivers. The treatment group for columns 1 to 3 comprises of children from households whose income was between R 2 200 and R 4 400 and received the Child Support Grant. These are households who were not means-test eligible before the change in policy and found themselves eligible after the change in policy. The 'Low income' control group is comprised of children from households whose income was below R 2 200. These households were means-test eligible before the drastic change in policy and remained so after the change in policy. The 'High income' control group is comprised of children from households whose income was greater than R 4 400 who did not receive the Child Support Grant and were not means-test eligible before the change in policy and remained ineligible after the change in policy.

Columns 4 to 6 of Table 4.8 show estimation results based on 2012 means-test threshold; which was now R 2 800 for single income caregivers and R 5 600 for double income caregivers. The treatment group for columns 4 to 6 comprises of children whose household income was between R 2 800 and R 5 600 who received the Child Support Grant. The 'Low income' control group in turn comprised of children from households whose

income was below R 2 800 and 'High income' control group from households whose income was above R 5 600 who were means-test ineligible for the grant and did not receive the grant. The inclusion of columns 4 to 6 was for robustness check; I expected results for columns 1 to 3 to be generally similar and not very different from results for columns 4 to 6. Another dimension for robustness check was to compare results using the 'Low income' control group and those for the 'High income' control group. Generally, they should not be very different. Although they are not very different, for the purpose of my analysis, I will concentrate on the results based on the 'High income' control group for my interpretation.

Although results in this section are based on the Difference-in-Differences framework, I also controlled for a host of other covariates in my regressions[10]. One of the most important premises of the Difference-in-Differences framework is to make sure that my treatment and control groups are comprised of similar characteristics before the change in policy; and as shown in section 4.3.1 and Table 4.4, my treatment and control groups were comprised of similar characteristics before the change in policy as evidenced by the insignificant p-values in Table 4.4 which measure the difference in means. All the same, I went on to control for a host of other covariates just to increase the precision of my estimates and to be rest assured that I do not suffer from any confoundedness.

Estimation results in Table 4.8, column 3, show that for a secondary-school-aged (aged 13 -18) child, receiving the Child Support Grant increases the probability of enrolment by 11.06 percentage points; which is significant at 1 percent. This result supports hypothesis 4.1 in section 4.2.2 in this chapter, which says that the Child Support Grant has a significant

[10] To capture household characteristics I controlled for household head's age, household head's age squared, household size, household head's education, binary variable to indicate whether father of child is alive, binary variable to indicate whether the father of child is resident, binary variable to indicate whether the mother of child is resident, binary variable to indicate whether a child is from a dual income household, and log of real income. Child characteristics controlled for are: child's age; number of siblings; gender dummy; and race dummies.

impact on the enrolment of secondary-school-aged children. Another year of education reduces the probability of enrolment by 4.5 percentage points for secondary-school-aged children. An increase of household income by 1 percent increases the probability of enrolment by 4.4 percentage points; which is statistically significant at 1 percent. As expected, all the results in columns (1) to (6) are not very different from each other.

Table 4.9 shows estimation results of the impact of the Child Support Grant on the enrolment of secondary-school-aged female children using data for 2007 and 2012. Column (2) shows estimation results using the 'Low income' control group and column 3 shows results using the 'High income' control group; all based on 2008 means-test threshold. Column (5) and (6) is based on the same analogy; however, based on 2012 means-test threshold. Results in columns (1), (2), (3), (4), (5), and (6) should not be very different; and as expected are not very different. For a secondary-school-aged female child, receiving the Child Support Grant increases the probability of enrolment by 13 percentage points, which is significant at 1 percent. This result supports hypothesis 4.2 in section 4.2.2, which says that the Child Support Grant has a significant impact on the enrolment of secondary-school-aged girls.

On the other hand, for a male child, receiving the Child Support Grant increases the probability of enrolment by 9.7 percentage points, which is significant at 5 percent. This is a very important result considering that dropout rates for secondary school boys are higher than those for girls. This result supports hypothesis 4.3 in section 4.2.2, which says that the Child Support Grant has a significant impact on the enrolment of secondary-school-aged boys. Comparing results from Table 4.9 and Table 4.10, it can be concluded that the chance of enrolment for female children who receive the grant is higher than the chance of enrolment for a male child who receive the grant; suggesting that the program had a higher impact on

the enrolment of female children than on the enrolment of male children. However, this is a bit surprising considering that dropout rates for boys in secondary school are higher than those of girls; one would have expected to see a higher impact among boys compared to girls. Generally, the program has a positive and significant impact on the enrolment of secondary school-aged children.

Looking at the impact of the program by the highest grade completed reveals that there is an increase in the probability of enrolment by 6.8 percentage points for children who completed Grade 8 and who receive the Child Support Grant, which is significantly different from zero at the 5 percent level. Children who completed Grade 9 and receive the Child Support Grant see an increase in the probability of enrolment by 1.8 percentage points than those that did not receive the grant. Children who completed grade 10 and receive the grant have a 0.054 higher chance of being enrolled in school than those who do not receive the grant. The program has the greatest impact on children who completed grade 12. The probability of enrolment for a child who completed Grade 12 is 61.6 percentage points higher for a child who received the grant than one who did not, which is significant at 1 percent. This is a very important piece of evidence. Indirectly, this measures the impact of the Child Support Grant on pass rates and progression into post-secondary school education. This is an important finding given that only forty percent who start school pass the matric in grade 12; and only 12 percent achieve high enough marks to get into universities. The Child Support Grant has a significant impact on the enrolment of children who completed grade 12. These results are shown in Table 4.11, which details results using the ‘High income’ control group.

I also investigated the impact of the Child Support Grant using six yearly data from 2007 to 2012; inclusive. The results of these regressions are detailed in Table 4.12 to Table 4.16 in the Appendix. Table 4.12 shows results of the impact of the program on enrolment

using the full sample. Columns (1), (2), and (3) are based on 2008 means-test threshold. Column (1) shows results using both the 'High income' and 'Low income' control groups; column (2) using the 'Low income' control group only; and column (3) using the 'High income' control group only. Like before, the treatment group for columns (1) to (3) is comprised of secondary-school-aged children (13 to 18 years) from households whose income was greater than the threshold for single caregivers and less than the threshold for double income caregivers; greater that R 2 200 and less than R 4 400 based on 2008 means-test threshold. Columns (4) to (6) uses the same analog, however, based on 2012 means-test threshold; R 2 800 for single caregivers and R 5 600 for double income caregivers.

Using the 'High income' control group, based on 2008 means-test threshold, receiving the Child Support Grant increases the probability of enrolment by 9.3 percentage points. Based on 2012 means-test threshold, the treatment effect is estimated to be an increase in the probability of enrolment by 11.2 percentage points. Both are significant at 1 percent. Table 4.13 in the appendix shows estimation results of the impact of the program on the enrolment of female children using the six yearly data. The probability of enrolment for a girl child who receives the Child Support Grant is 11.1 percentage points higher than one who does not receive the grant; which is significant at 1 percent. The corresponding estimate of the treatment effect at 2012 means-test threshold is 13.4 percentage points, albeit significant at 5 percent.

In general, the program had a higher and significant impact on the enrolment of female children than on male children. The probability of enrolment for a child who completed grade 12 and receives the grant is 72.0 percentage points higher than one who does not receive the Child Support Grant. The estimate is not different when using either the High income control group (72.0) or the 'Low income' control group (71.9) at 2008 means-test

threshold. All these estimates are significant at 1 percent. Although the year dummies are generally positive and significant for grade 8 and grade 9 regressions, the program did not have any significant impact on these grades as can be seen in estimation results detailed in Tables 4.15 and 4.16 in the appendix.

To check for robustness, I used three different strategies. I devised two control groups; namely the 'Low income' and 'High income' control groups. The 'Low income' control group corresponds to single income caregivers at a particular means-test threshold. In all the cases, the treatment group comprised of children from double income households who are means-test eligible. The 'High income' control group is comprised of children from households whose income was means-test ineligible. Using this framework, I expected the results not to be very different; and I got consistent results. Slight differences that I found in some cases were very small and negligible.

The second strategy in checking robustness involved considering two different means-test thresholds. The first means-test threshold was based on 2008 means-test threshold. This takes into cognizance the fact that the landmark change in policy was announced in 2008. The second criterion is based on 2012 means-test threshold. This follows an appreciation that from 2008 the means-test threshold was to be 10 times the grant amount. I used this without any loss of generality. I also got consistent results. For example, using data for 2007 as base year and 2012 as the after year to assess the impact of the program on enrolment, the results predicted that a child who receives the Child Support Grant has a 11.1 percentage points higher probability of being enrolled in school than one who does not; at the 2008 means-test threshold using the 'High income' control group. On the other hand, using the 2012 means-test threshold the results predicted that the child would have a 12.9

percentage point higher probability of being enrolled. Both are significant at 1 percent. These estimates are not very different from each other.

For the third strategy, I repeated the whole exercise using data for 2007 and 2011 as opposed to data for 2007 and 2012 and these results are presented in Table 4.17 to Table 4.21 in the appendix. I also obtained consistent results. For example, using the 'High income' control group and data for 2007 and 2011 to assess the impact of the program on enrolment, the results predicted that a child who receives the grant see an increase in the probability of enrolment by 10.8 percentage points than one who does not receive the grant; at the 2011 means-test threshold compared to an estimate of 12.9 percentage points when using 2007 and 2012 data. Estimation results on the impact of the program on the enrolment of female children based on 2008 means-test threshold was 11.4 percentage points for results based on the 'High income' control group for regressions based on 2007 and 2011 data compared with 13 percentage points for regressions based on 2007 and 2012 data. They were both significant at 1 percent. Although results based on 2012 means-test threshold are slightly higher than those based on the 2011 means-test threshold, the differences are negligible. The results were also consistent.

Comparing estimation results based on the six yearly data from 2007 to 2012 (inclusive) with the results based on 2007 and 2011 data also show the same level of conformity; 9.3 and 9.5 percentage points respectively for results based on 2008 means-test threshold, both of which are significant at 1 percent; and 10.8 percentage points compared with 11.2 percentage points for results based on 2011 and 2012 means-test threshold respectively. A female child who receives the grant is predicted to have 11.1 percentage points higher probability of being enrolled in school than one who does not when using the six yearly data compared with 11.4 percentage points result obtained when using 2007 and

2011 data; both of which are significant at 1 percent when using the 2008 means-test threshold. Assessing the impact of the program on enrolment by the highest grade completed is consistent using the three robustness checks. For example, using 2007 and 2011 data; the 2008 means-test threshold; and the 'High income' control group, the results predict that a child who has completed grade 12 and receives the grant has a 66 percentage points higher probability of being enrolled than one who does not compared with 61.6 percentage points using 2007 and 2012 data; and 72 percentage points using the six yearly data. They are all significant at 1 percent.

Generally, although the estimates for 2012 are slightly higher, the differences are small and the results are consistent. It is also important, however, to note that the age eligibility was increased to include all children under the age of 18 in 2012. The age eligibility was children under the age of 17 in 2011. Without any loss of generality, the strategy still provided a good measure of robustness check; for the differences were negligibly small and the results are consistent. It is also interesting to note that when I extended the number of years to include six yearly data, I am still getting very similar estimates with negligible differences and which are consistent. In general, therefore, the Difference-in-Differences estimation results confirm that the Child Support Grant has a significant impact on the enrolment of secondary-school-aged children in South Africa. These results support the hypotheses (hypothesis 4.1; 4.2; and 4.3 in section 4.2.2) that the Child Support Grant has a significant impact on the enrolment of secondary-school-aged children; a significant impact on the enrolment of secondary-school-aged girls; and a significant impact on the enrolment of secondary-school-aged boys in South Africa.

4.5.2 Results based on Instrumental Variables (IV) Method

Instrumental Variable estimations are based on the General Household Survey Data. Table 4.22 shows First Stage results which confirm that there is a significant effect of my instrument on the Child Support Grant. The instrument used in these regressions is 'having an age-eligible child in the expanded years'.[11] Table 4.23 shows IV estimation results of the impact of the Child Support Grant on the enrolment of secondary-school-aged children. Columns (1), (2), and (3) show results for the full sample; girls; and boys respectively based on 2007 and 2011 data whereas columns (4), (5), and (6) show results for the full sample; girls; and boys respectively based on 2007 and 2012 data. For a child of secondary school age, receiving the Child Support Grant increases in the probability of enrolment by 9.2 percentage points than one who does not, which is significant at 1 percent. A child whose father is alive see an increase in the probability of enrolment by 1.6 percentage points than one who does not, which is strongly significant. Another year reduces the probability of enrolment by 3.8 percentage points, which is significant at 1 percent. These results are detailed in Column (1) of Table 4.23. For a girl child, of secondary school age, receiving the Child Support Grant increases the probability of enrolment by 11.8 percentage points, which is significant at 1 percent. On the other hand, for a boy, receiving the Child Support Grant increases the probability of enrolment by 7.1 percentage points; albeit significant at 10 percent.

Using data based on 2007 and 2012, the results are consistent with those using data based on 2007 and 2011. A child who receives the Child Support Grant has 12.1 percentage points higher in probability of being enrolled in school than one who does not, which is significant at 1 percent. For a girl child, receiving the Child Support Grant is predicted to

[11] The accompanying tests show that the Child Support Grant is indeed endogenous. The instrument is strong. For detailed specification tests see notes to Tables 4.22 and 4.23 in the appendix.

increase the probability of enrolment by 11.6 percentage points, which is significant at 1 percent. In turn, the program effect for boys is an increase in the probability of enrolment by 12.9 percentage points, which is also significant at 1 percent; as detailed in Table 4.23.

Table 4.24 shows IV estimation results using six yearly data from 2007 to 2012. Column (1); Column (2); and column (3) show results on full sample; girls; and boys respectively. Like in Table 4.23, the instrument is 'having an age-eligible child in the expanded year'. For a child of secondary school age, receiving the Child Support Grant increases the probability of enrolment by 11.9 percentage points, which is significant at 1 percent. The program effect for girls is an increase in the probability of enrolment by 9.9 percentage points, which is significant at 5 percent. On the other hand, for a male child, receiving the Child Support Grant increases the probability of enrolment by 13.9 percentage points, which is significant at 1 percent.

Comparing the IV results with those of the Difference-in-Differences (DID) results above portrays an interesting picture. The comparison is done here because they are both based on GHS data. The estimates are more or less the same and are consistent. The DID estimate using 2007 and 2012 data and 'High income' control group is 11.1 percentage points and significant at 1 percent compares very well with the IV estimate of 12.1 percentage points which is also significant at 1 percent. The IV results are very similar with results in all the columns of the DID results in Table 4.8. Comparing Instrumental Variables (IV) results based on 2007 and 2011 data with DID results based on 2007 and 2011 data in Table 4.17 in the Appendix also show a similar picture of robustness. The IV estimate is 9.2 percentage points compared with the DID estimate (using the 'High income' control group) of 9.5 percentage points; and both are significant at 1 percent. The program impact estimate for girls using the Instrumental Variables method of 11.8 percentage points (which is significant at 1

percent) using 2007 and 2011 data compares very well with the DID estimate of 11.4 percentage points (also significant at 1 percent) using 2007 and 2011 data. Likewise, comparing Instrumental Variables estimation results with Difference-in-Differences estimation results of the impact of the Child Support Grant on the enrolment of secondary-school-aged girls using 2007 and 2012 data reveals a similar picture. A program impact estimate of 11.6 percentage points (which is significant at 5 percent) using the Instrumental Variables method compares very well with an estimate of 13 percentage points (though significant at 1 percent) under the DID method.

On the other hand, the program impact estimate for secondary-school-aged boys of 7.1 percentage points (which is significant at 10 percent) using the Instrumental Variables method based on 2007 and 2011 data compares very well with an estimate of 8.2 percentage points (which is also significant at 10 percent) under the Difference-in-Differences method using 2007 and 2011 data. Using 2007 and 2012 data, the program impact estimate for secondary-school-aged boys is 12.9 percentage points (which is significant at 1 percent) based on IV method compared to an estimate of 9.7 percentage points (which is significant at 5 percent) under the Difference-in-Differences framework using 2007 and 2012 data.

The IV estimation results show that secondary-school-aged children who receive the Grant have a higher chance of being enrolled in school than those who do not receive the grant; confirming the DID estimation results that the program has a significant impact on the enrolment of secondary-school-aged children in South Africa. These results support hypotheses 4.1; 4.2; and 4.3 in section 4.2.2 that say that the Child Support Grant has a significant impact on the enrolment of secondary-school-aged children; a significant impact on the enrolment of secondary-school-aged girls and a significant impact on the enrolment of secondary-school-aged boys, respectively.

4.5.3 Results Based on Panel Fixed Effects Estimations

Panel Fixed Effects estimations are based on the National Income Dynamics Study (NIDS) Wave 2 and Wave 3 data and the results are detailed in Table 4.25 and Table 4.26 in the appendix. The dependent variable is binary and equal to 1 if the child is enrolled in school and zero otherwise. Covariates controlled for are: Child Support Grant status, which is the variable of interest; 2012 year dummy; log of real income; binary variable indicating whether a child passed the previous year; binary variable indicating whether the child's mother is alive; and a binary variable indicating whether a child's father is alive. Variables such as gender dummy, geo-region dummies, and race dummies were excluded in the regressions because they are fixed over time. The difference in age between children does not change over time and was also excluded. Other supply-side characteristics that affect enrolment were also excluded because it is reasonable to assume them to be fixed over a two year period.

Table 4.25 shows Panel Fixed Effects estimation results of the impact of the Child Support Grant on the enrolment of secondary-school-aged children. Column (1) shows results based on the full sample of children that were aged 13 – 18 years in 2010; Column (2) shows results of the impact of the Child Support Grant on the enrolment of secondary-school-aged girls; and Column (3) shows results of the impact of the program on the enrolment of secondary-school-aged boys. For a child who is of secondary school age, receiving the Child Support Grant increases the probability of enrolment by 4.1 percentage points than one who does not, which is significant at 1 percent[12]. This result supports hypothesis 4.1 in section 4.2.2, which states that the Child Support Grant has a significant impact on the enrolment of secondary school aged children.

[12] When I drop the variable 'passed the previous year' the program impact becomes 3.7 percentage points, which is significant at 5 percent.

The probability of enrolment for a child who passed the previous year is 8.8 percentage points higher than one who did not pass the previous year, which is also significant at 1 percent. A girl of secondary school age who receives the Child Support Grant see an increase in the probability of enrolment by 0.9 percentage points than one who does not receive the grant. However, the program impact for girls is not statistically different from zero. The semi-elasticity of income to enrolment for secondary-school-aged girls is 2.6 percentage points, which is significant at 5 percent. Girls who passed the previous year have a 9.5 percentage points higher probability of being enrolled in school than those who did not pass; an estimate which is statistically different from zero at the 1 percent level.

On the other hand, for a male child who is aged 13 – 18 years, receiving the Child Support Grant increases the probability of enrolment by 8.1 percentage points, which is significant at 1 percent[13]. This result supports hypothesis 4.3 in section 4.2.2 which states that the Child Support Grant has a significant impact on the enrolment of secondary school aged children. In turn, a boy of secondary school age who passed the previous year has an 8.2 percentage points higher probability of being enrolled in school than one who did not pass the previous year, which is statistically different from zero at the 1 percent level.

Table 4.26 in the appendix shows Panel Fixed Effects estimation results of the impact of the Child Support Grant on the enrolment of secondary-school-aged children based on geo-regions: formal urban areas; informal urban areas; tribal authority areas; and formal rural areas. According to the rural development framework (1997; cited in Local Government Budgets and Expenditure Review, 2011) rural areas are defined as having 'sparsely populated areas in which people farm or depend on natural resources, including villages and small

[13] When I run the regressions without the variable 'passed the previous year', the program impact estimate for boys becomes 11 percentage points and still significant at 1 percent.

towns that are dispersed through these areas' as well as 'areas that include large settlements in the former homelands, which depend on migratory labor and remittances as well as government social grants for their survival , and typically have traditional land tenure systems'. Characteristically[14], rural areas are difficult to reach and face inadequate physical conditions with comparatively weak leaner performance. Getting a deeper understanding of the impact of the Child Support Grant on the enrolment of secondary school aged children in these areas is insightful and important for policy considerations.

For a child of secondary school age who lives in formal urban areas, receiving the Child Support Grant increases the probability of enrolment by 7.5 percentage points than one who does not receive the grant, which is significant at 1 percent[15]. A child living in urban areas and of secondary school age who passed the previous year has a 16.5 percentage point higher probability of being enrolled in school than one who did not pass; an estimate which is significant at 1 percent. A child who lives in the formal urban areas and is of secondary school age whose father is alive has a 12.8 percentage point higher probability of being enrolled in school than one whose father is not alive, which is significant at 10 percent.

It is important to gain a deeper understanding of the impact of the Child Support Grant on the enrolment of children living informal urban areas. Column (2) of Table 4.26 shows Panel Fixed Effects estimation results of the Child Support Grant on the enrolment of secondary-school-aged children living in informal urban areas of South Africa. For a child of secondary school age living in informal urban areas, receiving the Child Support Grant increases the probability of enrolment by 4.7 percentage points. However, the estimate is not

[14] Many rural schools still lack clean running water, electricity, libraries, laboratories and computers (Gardiner, 2008).

[15] Running regressions without the variable 'passed the previous year' does not change the program estimate of the impact of the Child Support Grant on the enrolment of secondary-school-aged children living in formal urban areas; with an estimate of 7.4 percentage points, albeit significant at 5 percent.

statistically different from zero. A child of secondary school age living in informal urban areas and who passed the previous year has an 18.6 percentage point higher probability of being enrolled in school than one who did not pass, which is significant at 5 percent. The effect of 'whether mother is alive' as well as the effect of 'whether father is alive' on the enrolment of secondary-school-aged children living in informal urban areas are both positive and insignificant[16] (10.6 and 27.8 percentage points respectively).

Children living in Tribal Authority Areas and are of secondary school age who receive the Child Support Grant have a 2.3 percentage point higher probability of being enrolled in school than those who do not receive the grant; albeit not statistically different from zero. The semi-elasticity of real income on enrolment for children living in Tribal Authority Areas is 1.9, which is significant at 10 percent. The program does not have an impact on the enrolment of secondary-school-aged children living in formal rural areas[17]. However, a child living in formal rural areas and is of secondary school age who passed the previous year has a 13 percentage points higher probability of being enrolled in school than one who did not pass the previous year, which is significant at 5 percent.

Using Panel Fixed Effects method, the Child Support Grant has a positive and significant impact on the enrolment of secondary-school-aged children in South Africa; which is significant at 1 percent. This supports hypothesis 4.1 in section 4.2.2, which states that the Child Support Grant has a significant impact on the enrolment of secondary-school-aged children. The Child Support grant has a positive and significant impact on the enrolment

[16] Dropping the variable 'passed the previous year' from my regressions leaves the estimate of impact of the Child Support Grant on the enrolment of secondary-school-aged children living in informal urban areas still not significant with a coefficient of 6.2 percentage points. However, the coefficient on 'father alive' becomes 40.9 percentage points and significant at 5 percent.

[17] The situation in rural areas might have an overbearing effect. As Gardiner (2008) noted, 'villages and rural communities are difficult to reach, the physical conditions in schools are inadequate, and leaner performance in comparison to schools elsewhere is weak'.

of secondary-school-aged boys, which is significant at 1 percent; confirming hypothesis 4.3 in section 4.2.2 that states that the Child Support Grant has a significant impact on the enrolment of secondary-school-aged boys in South Africa. The program has a positive and significant impact on the enrolment of secondary-school-aged children living in formal urban areas; which is also significant at 1 percent. These are very important conclusions considering that using Panel Fixed Effects enables me to solve the problem of selection bias and omitted variable bias emanating from potential unobserved time-invariant factors that are likely to be correlated with the Child Support Grant status and or other explanatory variables that affect the enrolment of children.

The conclusion from Panel Fixed Effects estimations that the Child Support Grant has a significant impact on the enrolment of secondary-school-aged children is an important conclusion considering the challenge South Africa is facing as far as secondary school education is concerned where drop-out rates are very high. A conclusion that the program has a significant impact on the enrolment of secondary-school-aged boys is also a very important piece of evidence considering that dropout rates for boys in secondary school are much higher than those of girls. It is also an important conclusion considering that the opportunity cost of attending school as a result of labor market activities is generally higher for boys than for girls. Overall, Panel Fixed Effects estimations predict that the Child Support Grant has a significant impact on the enrolment of secondary school aged children in South Africa; confirming the results obtained under the Difference-in-Differences and Instrumental Variables methods.

4.5.4 Cost Effectiveness Estimation

For expositional purposes, I carried out a calculation of the cost-effectiveness of the Child Support Grant using results obtained above. The procedure entails calculating the total cost of the program and dividing it with the total impact. Using this procedure, I discovered that the Child Support Grant achieves 0.03 additional years of schooling for every $100 spend as detailed in Table 4.27 in the appendix. Comparing this estimate to the cost-effectiveness figures obtained in some African countries portrays an interesting picture. For example, in the case of an unconditional cash transfer for girls in Malawi, the program was discovered to increase schooling by 0.02 years for every $100 spent. The fact that the Child Support Grant has been largely unconditional since its inception makes it very comparable to the situation in Malawi but suggesting that the Child Support Grant is somewhat more cost-effective although the difference is not very large. When compared to programs in Malawi, the Child Support Grant is far much larger in terms of coverage where it is reaching more than 11 million children whereas the program in Malawi only reaches a few thousand beneficiaries. This might suggest that scale, among other factors, might be an important factor in accounting for the difference between the cost-effectiveness of the unconditional cash transfer program in Malawi when compared to the Child Support Grant.

Another explanation as to why the estimate of the cost-effectiveness of the Child Support Grant is slightly higher than the unconditional program in Malawi could be as a result of the life of the two programs. Although the estimates are not alarmingly different, it is noteworthy to consider that the Child Support Grant has been there for a comparatively longer period than the unconditional program in Malawi. This suggests that longer term impacts maybe bigger and relatedly administrative and information costs tend to go down over time.

However, the estimate of 0.03 additional years of schooling for every $100 spent obtained for the Child Support Grant is also comparatively lower when compared to an estimate of 0.09 additional years of schooling for every $100 spent on a conditional cash transfer for girls' attendance in Malawi[18]. This suggests that a complete introduction and enforcement of conditions for the Child Support Grant can generate relatively higher cost effectiveness. The difference in cost effectiveness between the two programs can be attributed to the difference in program design and enforcement.

4.6 Conclusion

The three empirical methods used in this chapter were not meant to compete amongst themselves but rather to gain a deeper understanding of and unravel the impact of the Child Support Grant on the enrolment of secondary-school-aged children in South Africa. Reconciling the results of the impact of the Child Support Grant on the enrolment of secondary-school-aged children from the Difference-in-Differences, Instrumental Variables, and Panel Fixed Effects methods reveals a very interesting and reassuring picture. Using different methodologies and different data, the impact of the Child Support Grant on the enrolment of secondary-school-aged children is positive (with a coefficient of 11.1; 9.2; and 4.1 percentage points using Difference-in-Differences; Instrument Variables; and Panel Fixed Effects, respectively) and significant at 1 percent in all the three estimation results: Difference-in-Differences, Instrumental Variables, and Panel Fixed Effects estimation results. In general, the Child Support Grant has a significant impact on the enrolment of secondary-school-aged children. The fact that the estimate of the program impact under the Panel Fixed Effects is slightly lower than in the other empirical methods saves to confirm that there are

[18] For a detailed approach on cost-effectiveness analysis, see Dhaliwal et al. (2012).

potentially some fixed and unobserved characteristics that I was able to difference away; and the consistence of the results in all the three methodologies is reassuring.

The Child Support Grant has a positive and significant impact on the enrolment of secondary-school-aged boys; with an estimate of 9.7 percentage points under the Difference-in-Differences method, which is significant at 5 percent; an estimate of 12.9 percentage points under the Instrumental Variables method, which is significant at 1 percent; and an estimate of 8.1 percentage points under the Panel Fixed Effects which is significant at 1 percent. This is an important conclusion considering that drop-out rates for secondary school boys are much higher for boys than those of female children. It is comforting to realize that the Child Support Grant has a significant impact for this group of children given the challenges South Africa is experiencing as far as secondary school education is concerned for boys; and where 23 percent of male drop-outs cited financial constraints as their main reason of dropping out of school. This is also a very important conclusion considering that the opportunity cost of attending school due to labor activities was much higher for boys compared to that of girls.

Although the estimate of the impact of the Child Support Grant on the enrolment of secondary-school-aged girls is strongly significant (with a coefficient of 13 percentage points which is significant at 1 percent) under the Difference-in-Differences method and significant under the Instrumental Variables method (with a coefficient of 11.6 which is significant at 1 percent), the estimate is small and statistically not different from zero under the Panel Fixed Effects method. I therefore conclude that my result on the impact of the Child Support Grant on the enrolment of secondary school aged girls is inconclusive.

The Child Support Grant has a positive and significant impact on the enrolment of secondary-school-aged children living in formal urban areas, which is significant at 1 percent. The program impact on the enrolment of secondary-school-aged children living in informal urban areas and in Tribal Authority Areas is positive. The program has no impact on the enrolment of secondary-school-aged children living in formal rural areas. This conclusion is derived from Panel Fixed Effects results[19]. This is also an important observation. Characteristically, rural areas face many short-comings with inadequate physical conditions in schools (which are also difficult to reach) and comparatively weak learner performance suggesting that supply-side factors are still important for policy consideration.

The Child Support Grant has had important and significant impact on schooling for secondary-school-aged children in South Africa. This is a very important conclusion. Given the challenges that South Africa has as far as secondary school education is concerned; with high drop-out rates reaching as high as 40 percent by the time children reach grade 10 and as high as 50 percent by the time children reach grade 12 coupled with relatively lower enrolment rates (and poor pass rates), here is a social protection program for children which in general has a significant impact on the enrolment of secondary-school-aged groups of children.

[19] It was not possible to disaggregate my sample into geo-regions on whether rural or urban using the General Household Survey (GHS) which I used for my Difference-in-Differences and Instrumental Variables estimations because the General Household Survey (GHS) data for 2007 (which was my base year data) does not have a variable for geo-region although the years after that the data now has a variable on geo-region. On the other hand, the National Income Dynamics Study (NIDS) data which I used for my Panel Fixed Effects estimations has a variable for geo-region and as a result I was able to disaggregate my sample into formal urban, informal urban, tribal authority areas, and formal rural areas.

CHAPTER 5

AN IMPACT EVALUATION OF THE CHILD SUPPORT GRANT ON THE HEALTH OF CHILDREN IN SOUTH AFRICA

5.1 Introduction

Child health is an important pillar of human capital development. There is mounting evidence pointing to the fact that healthy children are more likely to become healthy adults. In recent years, there has been an increased attention on improving children's health. Development practitioners and policy-makers, in particular, have invested a lot in trying to gain a better understanding into programs that promote child health and help break intergenerational poverty. One such development tool that has received a lot of interest is cash transfer programs; with many of such programs being conditional on a parent or caregiver taking a child to a health facility.

This chapter assesses the impact of the Child Support Grant, a cash transfer program for children in South Africa, on health. The Child Support Grant is a means-tested social protection program given to every child under the age of 18. The outcome variables of interest are height-for-age z-score, which is a measure of accumulation of nutritional status since birth (Duflo, 2003); weight-for-age z-score. I used a sudden change in policy governing the Child Support Grant as a natural experiment for my identification strategy. I hypothesize that the Child Support Grant has a significant impact on height-for-age and weight-for-age for children living in South Africa; and that the Child Support Grant does not increase the chances of obesity among children in South Africa.

The rest of the chapter is structured as follows: Section 5.2 covers a brief literature review; Section 5.3 covers testable hypotheses; Section 5.4 presents a description of the data and statistics; Section 5.5 dwells on the methodology used in this chapter; in Section 5.6, I present my findings; and Section 5.7 concludes the chapter.

5.2 Brief Literature Review

Experiences from Latin American countries will always save as a referral to cash transfer evaluations. A number of researches in this area have also looked at health and development outcomes in young children (Fernald and Hidrobo, 2011; Morris et al., 2004a, 2004b; Galasso, 2011; Attanasio and Mesnard, 2005; Barham, 2005 and 2009; Gertler, 2000 and 2004; Arraiz and Rozo, 2010); to mention but a few. As noted by Bleakley (2008), the early years are particularly important; for most of a person's human-capital and physiological development happens in childhood.

Ranganathan and Lagarde (2011) provided an overview of conditional cash transfer programs in low and middle income countries (excluding South Africa); mostly in Latin America, and presented the evidence to date on their contribution to improvements in health and the encouragement of healthy behaviors. They concluded that conditional cash transfers have been effective in increasing the use of preventive services, improving immunization coverage, certain health outcomes and in encouraging healthy behaviors. In a related approach, albeit at a grander scale, Manley *et al*., (2013) reviewed 30,000 articles relating cash transfer programs and specifically height for age (finding 21 papers on 17 programs). They concluded that the programs' average impact on height-for-age is positive, small and statistically not significant.

Cash transfer programs are highly regarded as powerful instruments to improve health outcomes in low and middle income countries (ibid). Attanasio *et al*., (2005) and Gertler (2004) concluded that indeed cash transfer programs reduced the magnitude of stunting and the proportion of underweight in children aged 0 to 5 years old. They can lead to remarkable decline in infant mortality in some instances. Barham (2011), for example, discovered that Progresa led to a 17 percent decline in rural infant mortality among the treated; although it did not reduce neonatal mortality on average.

Most cash transfer programs are conditional and very few are unconditional. Some of the examples of impact evaluations of unconditional cash transfers on health outcomes include Duflo (2003) in South Africa; Leon and Younger (2007), Ecuador; Paxson and Schady (2007); Ecuador; Shinha and Yoong (2009), India. Important conclusions reached by Manley *et al*., (2013) were that conditional programs statistically accomplish the same as unconditional; conditionalities not related to health or education strongly inhibit child growth; and girls benefit more than boys as well as disadvantaged areas benefit more.

Although a lot of documented experience on cash transfers on health outcomes comes from Latin America, this developmental tool is now receiving prominence in Africa as well. Alderman (2007), for example, assessed the impact of a large scale community growth promotion program in Uganda and discovered a significant improvement of child nutrition for the youngest children in the treatment group compared to the same age cohort in the control communities. Robertson *et al*., (2013) investigated the effects of unconditional cash transfers and conditional cash transfers on birth registration, vaccination uptake, and school attendance in children in Zimbabwe. They found out that, among other results on birth registration and school attendance, the proportions of children aged 0 - 4 years with complete vaccination records was 3.1 percent greater in the unconditional cash transfer group and 1.8

percent greater in the conditional cash transfer group than in the control group. In Rwanda, Basinga *et al*., (2011) discovered that facilities in the intervention group had a 23 percent increase in the number of institutional deliveries and increases in the number of preventive care visits by children aged 23 months or younger and aged 24 months and 59 months; although no improvements were registered for children receiving full immunization schedules.

In South Africa, Duflo (2003) showed that girls whose grandmothers receive transfers have large improvements of 1.2 standard deviations in weight and height. Also writing on nutrition, Aguero, Carter and Woolard (2010) analyzed the impact of grants on child height-for-age and found significant impacts. However, Aguero and Carter used a panel data from one province of South Africa (KwaZulu-Natal) whereas in my case I used a nationally representative panel data covering all the nine provinces of South Africa. Woolard *et al*. (2005) and Aguero *et al*. (2007) limited their analysis to children 0-3 years (a limitation that comes from their data). I expand on that by looking at children aged 1 – 4 years; 5 – 9 years; and 10 – 14 years using a totally different and nationally representative data covering all the nine provinces of South Africa. In general, however, as Manley *et al*. (2013) also noted, previous studies of cash transfer programs' effects on child nutritional status are limited and come to varying conclusions. This dissertation seeks to contribute to a rather limited body of literature on cash transfers in Africa and expand on and bridge gaps on the impact of the Child Support Grant on the health of children living in South Africa.

5.3 Testable hypotheses

The main objectives of this chapter are: to find out the impact of the Child Support Grant on height-for-age and weight-for-age for children in South Africa; and to show whether

the Child Support Grant increases the chances of obesity among children in South Africa. In order to meet these objectives, the research seeks to answer questions as to whether the Child Support Grant has a significant impact on height-for-age and weight-for-age for children aged 1 – 4 years; 5 – 9 years; 10 – 14 years; and all children below 15 years; and whether the Child Support Grant increases the chances of obesity among children in South Africa. The following hypotheses are worth testing:

Hypothesis 5.1: The Child Support Grant has a significant impact on height-for-age for children living in South Africa.

Hypothesis 5.2: The Child Support Grant has a significant impact on weight-for-age for children living in South Africa.

South Africa is a country with a complex mix of under- and over- nutrition. Understanding whether the Child Support Grant does not increase the chances of obesity among children is also very important. Obesity is a serious challenge for many countries and particularly so for South Africa. In particular, about 70 percent of adult women and 40 percent of adult males in South Africa are obese; and about 25 percent of girls and 20 percent of boys in South Africa are obese (The Economist, June 14, 2014). Obesity exposes children to risks of suffering from diabetes and heart diseases; among others. Getting a deeper understanding on whether the program increases the chances of obesity or not among children is therefore of paramount importance when assessing the impact of the Child Support Grant on the health of children in South Africa. Therefore, it is reasonable to advance the following hypothesis:

Hypothesis 5.3: The Child Support Grant does not increase the chances of obesity among children.

5.4 Data and Descriptive Statistics

5.4.1 Data

In the history of South Africa, for the first time, through a Presidential decree, the country commissioned a national panel survey; the National Income Dynamics Study (NIDS). The first wave was available in 2008, the second wave was held in 2010 and became available in May 2012, and Wave 3 was published in September 2013. This, no doubt, is essential in getting a deeper understanding of the social dynamics of cash transfers, among others and policies and social forces driving them. I used the National Income Dynamics Study (NIDS) over the three waves; namely 2008, 2010 and 2012. The NIDS data has added more, new and rich information about socioeconomic change over time at the individual level.

It is unique in the case of South Africa in that it is the only nationally representative household survey which measures longitudinal change among the same individuals[20]. The panel study was implemented in all the nine provinces of South Africa. It used a combination of household and individual level questionnaires. The data provides information on geography, Occupation, Industry, Employment Status, Income, Expenditure and Wealth; among others. Information about children was collected from caregivers. The Child questionnaire focused on educational history, education, anthropometrics and access to grants. Wave 1 (2013 version of the first wave) comprises of 28,255 households, 16,885 adults, and 9,616 children; Wave 2 comprises of 9,134 households, 21,880 individuals, and 11,094 children; and Wave 3 comprises of 10,236 households, 22,481 adults[21], and 12,235 children.

[20]National Income Dynamics Study, 2012 Wave 2 Overview.

[21] A person is defined as an adult if they were 15 years old or older on the day of the interview; *see* the National Income Dynamics Study Wave 3 User Manual.

For the purpose of my research, where I am interested in the drastic change in policy governing the Child Support Grant which came into effect on 22 August 2008, care was exercised by dropping all observations who were interviewed after July 2008 since the drastic change in policy was announced on 22 August 2008. So drastic was the change in policy that it is reasonable to conclude that no household would ever have anticipated this kind of change[22] (I will come back to this point under identification strategy in the next section). Out of the 9,616 children whose households were interviewed in 2008 only 545 children's households were interviewed after July 2008. Nothing much, if at all, was lost by excluding these 545 children from my analysis and at the same time making Difference-in-Differences framework suitable for the analysis.

For anthropometric information, data provides three measures for height, weight and waist. Two measures were taken for each and then a third if the first two measures were more than one centimeter apart for height and when the first two measures were more than one kilogram apart for weight. The two measures were important in the calculation of z-scores where the average of the two was used. In cases where these two measures differed by more than one centimeter for height and one kilogram for weight, the third measure was used. The z-scores for children under the age of 5 for height-for-age and weight-for-age were calculated using the WHO international child growth standards as the reference[23] (ibid). The WHO growth standards for school-aged children and adolescents were used as a reference in the calculation of z-scores for height-for-age, and weight-for-age; for children older than 5 years.

[22]A study of the Social Assistance Act Government Notices from 1998 shows no precedency of such a kind of policy shift. I reviewed all the government notices from 1998 to 2008.

[23] In calculating height z-scores, it was assumed that the child was measured in the recumbent position if the child is below 24 months. If the child is aged 24 months and above, it was assumed that the measured height is standing height. Age in days was used to calculate the z-scores (ibid).

The outcome variables of interest in assessing the impact of the Child Support Grant on health in this chapter are height-for-age z-score and weight-for-age z-score. Generally, height-for-age is regarded as a chronic measure (Alderman, 2007). Weight-for-age is an important indicator for poverty and hunger eradication as stipulated by the first millennium development goal (Kazianga *et al*., 2014). In general, children who are more than two standard deviations below the average are regarded to be underweight. On the other hand, children who are more than three standard deviations are considered to be severely underweight.

5.4.2 Descriptive Statistics

Table 5.1 in appendix shows descriptive statistics for children aged below 15 years and for children aged 10 – 14 years; for the three waves. Panel A includes statistics for some of the control variables used in the regressions and Panel B details statistics on outcome variables used in the analysis. The average household size is 7 in all the years. There was a marked increase in household real income which was R 2,394; R 2,880; and R 3,174 in 2008, 2010, and 2012 respectively. Real expenditure on food averaged R 864; R 885; and R 840 respectively. Children who received the Child Support Grant increased from 72.4 percent to 76.6 percent in 2010 and 77.7 percent by 2012. Fifty-one percent of the children are boys in all the waves and slightly half of all the children are from Tribal Authority Areas. Six percent of all the children are from Urban Informal Areas and 8.4 percent from Rural Formal Areas; remainder proportion of children is from the Formal Urban Areas.

The average height-for-age z-score was -0.913, -1.007, and -1.003 in 2008, 2010 and 2012 respectively for the full sample. Correspondingly, the average height-for-age for

children aged 5 – 9 years is -0.79, -0.845, -0.795 for the three waves respectively; and for children aged 1 – 4 years is -1.216, -1.19, and -1.091 respectively. Summary statistics for weight-for-age z-score are detailed in Panel B of Table 5.1 and Table 5.2. Weight-for-age z-score averaged -0.347, -0.252, and -0.33 in 2008, 2010, and 2012 respectively for the full sample. There is a noticeable trend in all the age subgroups (namely: full sample of children below 15 years, children aged 10 – 14 years, aged 5 – 9 years and aged 1 – 4 years); the z-scores increased in 2010 and then fell in 2012.

Table 5.3 shows descriptive statistics on height and weight for children aged 1 – 4 years; 5 – 9 years; and 10 – 14 years in 2008, 2010 and 2012. The average height for children aged 1 – 4 years was 89.73; 94.6; and 101.1 centimeters in the three years respectively. The average weight for the same age group was 14.67; 17.16; and 16.81 kilograms in each time period respectively. On the other hand, the average height for children aged 5 – 9 years was 118.7; 117.5; and 119.1 centimeters and average weight was 23.54; 24.46; and 23.75 kilograms in 2008, 2010 and 2012, respectively. As for children aged 10 – 14 years, the average height was 133.5; 136.8; and 144.1 centimeters and average weight was 31.11; 36.02; and 39.92 kilograms in the three time periods respectively. There is a noticeable trend, however. There is a marked increase in average height in each time period for children aged 1 – 4 years. Furthermore, average height in 2012 is generally higher for all age subgroups (1 – 4 years; 5 – 9 years; and 10 – 14 years) as compared to averages in 2008 and 2010. However, this is not the case for average weight except for children aged 10 – 14 years where average weight increases in each time period. Table 5.4 shows descriptive statistics of take-up of the Child Support Grant by treatment and control groups based on both 2008 and 2012 means-test thresholds in the three time periods; 2008, 2010, and 2012. Take-up rates were 63.1 percent in 2008 and reached 80.7 percent by 2012 in the treatment group based on

2008 means-test threshold and correspondingly started off at 51.6 percent in 2008 and levelling off at 78.7 percent by 2012 in the treatment group based on 2012 means-test threshold. In both cases take-up rates remained fairly constant in control groups based on 2008 and 2012 means-test thresholds as detailed in Table 5.4 in the appendix[24].

One of the most important premises for using the Difference-in-Differences framework is to make sure that the treatment and control groups are similar in characteristics in the baseline (the 'before' year). Table 5.5 to Table 5.8 show summary statistics categorized into treatment and control groups using different control groups. The tables confirm that both the treatment and control groups are similar in characteristics in the baseline. Table 5.5, for example, shows summary statistics for treatment and control group based on both the 'Low income' and the 'High income' control groups together. The mean height-for-age z-score is -0.916 and -0.985 in the control and treatment groups respectively; which are statistically not different (p-value = 0.353). The average weight-for-age z-score is -0.366 and -0.329 in the control and treatment groups respectively and a p-value of 0.614 for the difference in means. The means for the two groups are statistically not different from each other for age, proportion of children whose mothers are alive, proportion of children whose fathers are alive, proportion of children in good health, proportion of children in fair health, proportion of children whose birth place is a clinic, proportion of children who visited a health facility once in year, and the proportion of children who visited a facility at least more than once in a year; just to mention but a few characteristics.

In my regressions, I used two different control groups namely: (1) comprised of children from households who were both means-test eligible (Low income group) and means-

[24] Reasons for not taking up the Child Support Grant are detailed in section 2.2.

test ineligible (high income group) who did not receive the Child Support Grant; and (2) comprised of children from households who were both means-test eligible (Low income group) and means-test ineligible (high income group) both who received and did not receive the grant. It is important therefore to determine whether these groups were different in characteristics before the change in policy and whether this could lead to any bias in estimates. In Tables 5.9 and 5.10 I compare observable characteristics of those who did not receive the Child Support Grant and those who received the Child Support Grant before the change in policy based on 2008 and 2012 means-test thresholds respectively. My conclusion from both tables is that they were similar in characteristics before the change in policy.

For example, in Table 5.10 average height-for-age was -0.987 and 0.916 in the two groups respectively. These averages are not statistically different from each other (with p-value = 0.316). Average weight-for-age was -0.29 for the group that did not receive the Child Support Grant in the base year compared with an average of -0.37 for the group that received the grant before the change in policy, which are also not statistically different from each other (with a p-value = 0.265). The two groups had an almost equal number of boys as girls on average and both are not statistically different from each other in the two groups (with p-value = 0.955 in both cases). The proportion of children whose fathers were alive before the change in policy were 88.2 percent and 89.7 percent (p-value = 0.223) in the two groups respectively. Other characteristics detailed in the table are: household head's education, proportion of children in good health, proportion of children in fair health, proportion of children born in a clinic, illness history, and health check-up frequency. All these observable characteristics are statistically not different from each other in the two groups before the change in policy as evidenced by the insignificant p-values which measure the difference in means. This detailed analysis suggests that the two groups are not different

and importantly the incomplete take-up of the Child Support Grant does not bias my estimates. It is also important to note that these two groups are comprised of both children from households that were means-test eligible and means-test ineligible.

In general, the health of children is also determined by, among other factors, the nutritional intake of a balanced diet. An understanding of nutritional intake can be derived from the type of food consumed and indirectly from the amount spend on each type of food. Expenditure on food, although widely used as a measure of consumption, it is silent on how much is really consumed and how much is wasted; how much of the food purchased was consumed by members of the household and how much was consumed by visitors; and how much was consumed by adults and how much was indeed consumed by children. However, it is a widely used proxy for nutritional intake.

Table 5.11 shows summary statistics based on type and expenditure on food consumed for a selected types of food in 2008 and 2010. Columns (1) and (2) show the proportion of households consuming the type of food named and columns (3) and (4) detail the real expenditure amount on each type of food. There has been a generally marked increase in the proportion of households consuming each type of food. The proportion of households consuming red meat increased from 55.6 percent in 2008 to 64.3 percent in 2010. Likewise, 23.8 percent of households consumed fish in 2010 compared with 18.9 percent in 2008. Seventy-seven percent of households consumed eggs in 2010 compared with 68.3 percent in 2008; and 67.8 percent of households consumed dairy products in 2010 compared with 60.8 percent in 2008. The real expenditure amounts on each type of food also increased in 2010 compared to 2008. This dimension of analysis is important because nutritional intake have a direct bearing on my outcome variables. This analysis confirms that food expenditure and food consumption were important in the time periods reviewed.

5.5 Methodology

5.5.1 Difference-in-Differences

The Difference-in-Differences method is well suited to estimating the effect of sharp changes in government policy (Angrist and Krueger, 1999) and is itself a version of fixed-effects estimation using aggregate data (Angrist and Pischke, 2009), although it does not necessarily require a balanced panel (Ravallion, 2008) and still be robust to selective attrition. The model specification that I worked with is as follows:

$$h = \beta_0 + \delta_0 d2 + \beta_1 dG + \delta_1 d2.dG + X'\beta_k + \varepsilon_i$$

This entails creating time and group dummies (i.e. control and treatment groups). In this case β_0 captures the control group in the pre-treatment period and the sum of β_0 and δ_0 captures the effect to the control group in the after treatment period. The coefficient, δ_0, is the difference between after and before for the control group. It is the counterfactual measure of the treatment group in the post- and pre-treatment periods; reflecting what the treatment group would have been in the absence of the program. The sum of δ_0 and δ_1 is the difference in the treatment group between the two years. The coefficient of interest is δ_1 which measures the true impact of the program. It is the Difference-in-Differences estimator. h is the health outcome variable; height-for-age, and weight-for-age z-scores. X' is a vector of other covariates. Although I am using the Difference-in-Differences framework, I am also controlling for a host of other covariates just to increase the precision of my estimates and to be rest assured that I do not suffer from any potential confoundedness. However, this should not be of concern given my identification strategy.

Identification Strategy

With effect from 22 August 2008, for the first time in the history of the Child Support Grant, means-test eligibility took into account double income caregivers. From this date, the means-test eligibility criteria for those in spousal relationship was to be calculated as half the sum of the total income for the two, which should be less than the means-test cutoff threshold. Effectively, this works out to be double the means-test threshold for single income caregivers. This sharp change in policy has made some households that were otherwise means-test ineligible before the change to be suddenly means-test eligible. Before the change in policy, double income caregivers were 'disadvantaged' because in determining their eligibility total household income was considered and then there was no distinction between single income and double income caregivers; they were all subjected to the same means-test threshold. The sharp change in policy presents a natural experiment. This allows for a treatment-control strategy.

For the first time as well, with effect from 22 August 2008, the means-test threshold was to be calculated as 10 times the grant amount. These two sudden changes in policy, which came into effect the same day, provide the scope for a natural experiment. It is difficult to believe that one might have anticipated such sudden change in policy; given the history of the Child Support Grant. This had no precedence and is exogenous. For the purpose of my analysis, I designed two control groups: (1) children who did not receive the grant (both means-test eligible and not eligible); (2) children who received the grant and those who did not receive the grant (both means-test eligible and not eligible). My treatment group is defined as children from households who were means-test ineligible before the change in policy but who found themselves means-test eligible after the change in policy; interacted with the grant.

5.5.2 Panel Fixed Effects

The fact that the National Income Dynamics Study has repeated observations on individuals allows me to employ Panel Fixed Effects method to analyze the impact of the Child Support Grant on health. The motivation is that there are potentially unobserved child and family characteristics (such as innate healthiness; a higher food conversion efficiency for a particular child; parental tastes for healthy children, for example) that do not vary over time; and I would want to wish away; helping me deal with omitted variable bias when they are correlated with observed child health outcomes. This is important for controlling not only for the unobserved time-invariant heterogeneity but also for heterogeneity in observed characteristics over time. The general model that I worked with is of the form:

$$H_{it} = \alpha_i + \lambda_t + \delta D_{it} + X'_{it}\beta + \mu_{it}$$

This emanates from, as motivated by Angrist and Pischke (2009):

$$\mathrm{E}[H_{it}|A_i, X_{it}, t, D_{it}] = \alpha + \lambda_t + \delta D_{it} + A'_i\gamma + X'_{it}\beta \text{ , where}$$

$$\mu_{it} \equiv H_{0it} - E[H_{0it}|A_i, X_{it}, t];$$

$$\alpha_i \equiv \alpha + A'_i\gamma;$$

Where H_{it} is health outcome variable for child *i* at time *t*; α_i is a fixed effect for child *i*; D_{it} denotes the Child Support Grant status for child *i* at time *t*; and X'_{it} is a vector which captures a range of time-varying covariates of children characteristics, household characteristics and parents or caregiver characteristics; among others. A_i is a vector of unobserved but fixed confounders. The unobserved effect contains such factors as child, family background and such other fixed effect characteristics, which I am also assuming to be

constant over the time periods. Once the unobserved effect is taken out the explanatory variables become strictly exogenous.

The parameter of interest is δ, which measures the true effect of the program and represents the impact of the grant on health outcomes. The main assumption here is that the idiosyncratic errors are uncorrelated with the explanatory variable in each time period. By treating the fixed effects as an independent variable has the same effect as estimating deviations from means. It is understandable to assume that increased resources through the Child Support Grant will improve child health outcomes. The challenge, however, will come if families who are able to earn more money are more likely to raise healthy children. With Panel Fixed Effects, this worry is minimized (or even eliminated) if this characteristic is fixed over time (which is plausible to assume) so that it can be differenced away. Panel Fixed Effects importantly addresses the challenge of selection bias in program participation. If households who choose to take-up the Child Support Grant possess some characteristics that make them participate, and if these characteristics are fixed over time, the methodology is suitable to deal with the challenge. As a result, my explanatory variables will be strictly exogenous and the program impact estimate will be a true reflection of the impact of the Child Support Grant on the health of children living in South Africa.

In order to assess the impact of the Child Support Grant on the health (in particular, height-for-age and weight-for-age and uncovering whether the Child Support Grant does not increase the chances of obesity) of children living in South Africa, therefore, I employed the Difference-in-Differences framework and Panel Fixed Effects methods and the results are detailed in the next section.

5.6 Results

5.6.1 Difference-in-Differences Results

The sharp change in policy governing the Child Support Grant presents a case of 'natural experiment' which facilitates the employment of a Difference-in-Differences framework to assess the impact of the program on health. Due to the change affecting double income households, some families found themselves means-test eligible for the Child Support Grant; who otherwise would not be in the absence of the sudden and unprecedented change in policy. This enables the construction of control and treatment groups that can be compared before and after the change in government policy.

For the purpose of my analysis, I designed two control groups: (1) children who did not receive the grant (both means-test eligible and not eligible); (2) children who received the grant and those who did not receive the grant (both means-test eligible and not eligible)[25]. My treatment group is defined as children from households who were means-test ineligible before the change in policy but who found themselves means-test eligible after the change in policy. These are households with incomes greater or equal to R 2 200 and less than R 4 400 in 2008[26]). I interacted this group with receiving the Child Support Grant.

[25] I checked whether these two control groups were similar in characteristics before the change in policy and discovered that they were similar as evidenced by the insignificant p-values that measure the difference in means as detailed in section 5.4.2 and Tables 5.9 and 5.10 in the appendix.

[26] I conveniently called this group 'middle income group' to distinguish it from households with an income less than or equal to R 2 200 ('low income' group) which was the single income household cut-off threshold, and those with an income greater than R 4 400 ('high income group') who were means-test ineligible. The grant amount was R 220 on 1 October 2008 and following the policy announcement of 22 August 2008 that the means-test threshold will be 10 times the grant amount, this puts the means-test threshold for single caregivers at R 2 200 and at R 4 400 for double income caregivers following a policy change of 22 August 2008 affecting those in spousal relationships; which stipulates that their cut-off threshold should be determined as: half their total income should be less than the means-test threshold for single income caregivers. This is mathematically the same as that their total income should be less than double the means-test threshold for single income caregivers.

Designing these different control and treatment groups provide an opportunity to check the robustness of the results. Also, because these classifications are based on household income, I subjected the results to three different income measurements: (1) self-reported household income; (2) imputed household income; and (3) imputed household income less government grant income (by running regressions with each one of them separately as a control variable). This sensitivity analysis approach is motivated by the fact that income is self-reported and measurement error is always a concern. I also took advantage of the fact that the means-test threshold is now calculated as 10 times the grant amount; meaning that the means-test thresholds were different in 2008 and 2012.

Although I used the Difference-in-Differences framework, I also controlled for a host of other covariates[27]. I controlled for these covariates even though my treatment and control groups had similar characteristics before the change in policy as detailed in section 5.4.2 and in Table 5.5 to Table 5.8 in the appendix. This way, I intend to increase the precision of my estimates and get an assurance that my results do not suffer from any confoundedness coming from these covariates in anyway.

5.6.1.1 Results based on 2008 means-test threshold

Table 5.12 shows Difference-in-Differences estimation results of the impact of the Child Support Grant on height-for-age. The treatment group for these results is comprised of children from households who are in 'middle income group' and who received the Child Support Grant. In turn, the control group is comprised of children from households who did

[27] Covariates controlled for are: 2010 and 2012 year dummies; log of real income; log of real expenditure on food; household size; dummies to indicate whether formal rural areas, tribal authority areas, urban informal areas and the base geo-area was formal urban areas; dummy to indicate whether father of child is alive; household head's education; race dummies; child's age; gender dummy; dummies on health status; dummies to indicate number of times a health professional was visited in the previous 12 months; and dummies to indicate place of birth.

not receive the grant (both means-test eligible and ineligible). Log of real income included in these regressions is household income less government grants. Column (1) of Table 5.12 shows estimation results of the impact on height-for-age z-score for children below the age of 15. The program effect is an increase in height-for-age by 0.299 standard deviations; which is significant at 10 percent. This result confirms hypothesis 5.1 in section 5.3 which says the Child Support Grant has a significant impact on height-for-age for children living in South Africa. Controlling for total household income including government grants; and self-reported household income, do not affect the results (0.288 and 0.32 standard deviations respectively, both significant at 10 percent[28]).

Further disaggregating the sample into the following age groups: (1) 10 – 14 years; (2) 5 – 9 years; and (3) 1 – 4 years, is very important and insightful in gaining a better understanding of the impact of the program on different age groups. It is well documented elsewhere in the literature that the effect of nutritional deficiencies experienced in early stages of a child's life might be difficult to reverse. Inferring the impact of the Child Support Grant on health for children aged between 1 – 4 years is therefore important. The effect of the Child Support Grant is an increase in height-for-age by 0.107; 0.253; and 0.337 standard deviations on children aged 10 – 14 years; 5 – 9 years; and 1 – 4 years respectively, which are all not statistically different from zero[29].

An important aspect of the Difference-in-Differences framework is that the control groups and treatment groups should be the same in characteristics before the intervention. To this effect, disaggregating the sample into rural and urban is very important and insightful. I

[28] Summaries of these results are detailed in Table 5.20 and Table 5.21 in the appendix.

[29] Estimation results controlling for total household income (including government grants) and controlling for another self-reported household income do not yield different results: 0.04, 0.274, 0.354 and 0.094, 0.291, 0.40 for children aged 10 – 14, 5 – 9, and 1 – 4 years respectively.

therefore separately estimated the impact of the Child Support Grant on the health of children aged below 15 years; aged 10 – 14 years; aged 5 – 9 years; and aged 1 – 4 years, living in formal urban areas; informal urban areas; formal rural areas; and tribal authority areas. Health outcomes are affected by environmental factors and these tend to be very distinct between urban and rural areas. Important factors include sanitary conditions, water source, dwelling type, ablution facilities, and access to health facilities; among others, which tend to vary greatly between urban and rural areas. Rural areas are also characteristic of access barriers including vast distances, high travel costs, high out of pocket costs and long queues[30].

Children living in formal urban areas who receive the Child Support Grant see an increase in height-for-age by 0.601 standard deviations than those who do not receive the grant. The estimate is significant at 5 percent; as detailed in results in Table 5.13, which show estimation results of the impact of the Child Support Grant on height-for-age for children living in urban formal areas. Applying a sensitivity analysis to the results by using household income including government grants as a control variable does not change the results (0.587 which is significant at 5 percent); and neither do they change for another measure of self-reported household income (0.588 standard deviations, which is also significant at 5 percent).

For children aged 10 – 14 years, the estimate is negative but not statistically different from zero. The effect of the program is an increase in height-for-age by 0.853 standard deviations for children aged 5 – 9 years living in formal urban areas who receive the grant compared to those who do not receive, which is significant at 5 percent[31]. The estimate for

[30] *See* Harris *et al.* (2011) and Visagie *et al*. (2014).

[31] I also get similar results when I control for household income including government grants (0.835 standard deviations, significant at 5 percent); and when I control for another self-reported household income (0.833 standard deviations, significant at 5 percent).

the program impact on height-for-age for children aged 1 – 4 years who live in urban areas is positive (0.165 standard deviations) but not significant.

Receiving the grant is associated with an increase of 0.249 standard deviations in height-for-age for children living in tribal authority areas relative to those who do not receive the grant; though not significant. These results are detailed in Table 5.14. For children aged 5 – 9 years living in tribal authority areas, receiving the Child Support Grant increases height-for-age by 0.044 (with robust standard error of 0.393) standard deviations[32] relative to those who do not receive the grant; and an increase in height-for-age by 1.09 standard deviations for children aged 1 – 4 years, albeit not significant. It is important to gain an insight into the effect of the Child Support Grant on health for children living in urban informal areas. However, none of the coefficients for the program impact is significantly different from zero. For children living in formal rural areas, the program effect on height-for-age is negative and insignificant. This might be an indication that supply-side considerations have an overbearing effect for children living in rural areas.

The effect of the program on girls is an increase in height-for-age by 0.37 standard deviations which is weakly significant, as detailed in Table 5.15. The estimate does not change when I control for household income including government grants; and neither does it change when I use another self-reported household income (0.383 and 0.425 standard deviations, which are both significant at 10 percent as well). On the other hand, the effect on boys is an increase in height-for-age by 0.201 standard deviations (0.173 and 0.208 standard deviations respectively, when I apply the sensitivity check of controlling for household

[32] The coefficient becomes relatively larger when total household income including government grants is used as a control as opposed to one excluding government grants (0.074 standard deviations) as well as when another self-reported measure of household income is used (0.113 standard deviations).

income including government grants and another self-reported household income); though not significantly different from zero.

The effect of the Child Support Grant is an increase by 0.114; 0.272; and a decrease by 0.491 standard deviations in weight-for-age for children aged below 15 years, 5 – 9 years, and 1 – 4 years respectively; which are all not significantly different from zero, as detailed in Table 5.15 in the appendix. Children aged below the age of 15 and living in formal urban areas who receive the Child Support Grant see an increase in weight-for-age by 0.849 standard deviations than those who do not receive the grant; which is statistically different from zero at the 1 percent level. Applying a sensitivity analysis to the results by using household income including government grants as a control variable does not change the results (0.849, which is significant at 1 percent); and neither do they change for another measure of self-reported household income (0.845 standard deviations, significant at 1 percent) as detailed in Table 5.20 and Table 5.21. The effect of the program for children aged 5 – 9 years is an increase in weight-for-age by 1.281 standard deviations, which is significant at 1 percent[33]. However, the estimate for children aged 1 – 4 years is negative; though insignificant. None of the estimates is positive and significant for children living informal urban areas, in formal rural areas, and in tribal authority areas except for children aged 1 – 4 years where the program impact is an increase in weight-for-age by 0.615 standard deviations, which is, however, not significant. Table 5.19 shows Difference-in-Differences estimation results of the impact of the Child Support Grant by gender. The effect of the program on girls is an increase in weight-for-age by 0.125 standard deviations; albeit not statistically different

[33] The coefficient seems to be large. However, this is not unusual in the case of South Africa. Duflo (2003) working on the impact of the Old Age Pension on children's health outcomes discovered an impact of 1.2 standard deviations on height and weight; although her sample was limited to children under the age of 5 years.

from zero. On the other hand, the effect on boys is an increase in weight-for-age by 0.101 standard deviations, which is also not significant.

5.6.1.2 Results based on 2012 Means-Test Threshold

With effect from 22 August 2008, the means-test threshold for 'single income caregivers' is to be calculated as 10 times the grant amount. For those in spousal relationship (double income caregivers), the means-test threshold is to be calculated so that half their combined income should be less than or equal to 10 times the grant amount. In 2012, the grant amount was pegged at R 280 per month per age-eligible child. This means that the cutoff threshold was R 2 800 for single income caregivers and R 5 600 for double income caregivers. Extending the identification strategy to 2012 means-test thresholds, there are families who were means-test ineligible before the change in policy but who now found themselves eligible for the grant in 2012.

I designed a new treatment group comprised of children from households whose income is greater than R 2 800 and less than or equal to R 5 600 who received the grant[34]. My control group is comprised of children from households whose income is less than or equal to R 2 800 and greater than R 5 600 who did not receive the grant (both means-test eligible and ineligible). Table 5.22 shows summaries of the program impact on height-for-age, and weight-for-age for results based on 2012 means-test threshold. Covariates used in these regressions are the same as those used in the regressions above: 2010 and 2012 year dummies,

[34] I dropped observations whose household income was between R 2 800 and R 5 600 who received the grant in 2008; this could be as a result of reporting error.

log of real income[35] (real income is less of government grants), log of real expenditure on food, household size, father alive, household head's education, race dummies, gender dummy, child's age, health status, place of birth, and number of times a health professional was consulted in the year.

Using the 2012 means-test threshold yields very similar results as when I used the 2008 means-test threshold, although the coefficients are slightly larger. This is reassuring. The program effect for children below the age of 15 is an increase in height-for-age by 0.384 standard deviations, which is significant at 5 percent[36]. The impact of the program for girls is an increase in height-for-age by 0.44 standard deviations (which compares very well with an estimate of 0.372 standard deviations in the results based on 2008 means-test threshold); which is also significant at 10 percent[37]. On the other hand, program impact for boys on height-for-age is an increase by 0.26 standard deviations; though not significant. The estimates of the impact of the program on height-for-age for children aged 10 – 14 years, 5 – 9 years, and 1 – 4 years are all positive (0.237; 0.366; and 0.366 standard deviations, respectively) but not significant.

The program is estimated to have a significant impact for children in the formal urban areas. The program effect for children living in formal urban areas who are aged below 15 years is an increase in height-for-age by 0.658 standard deviations; and significant at 5 percent. For children aged 10 – 14 years, the estimate is positive but not significant (0.039 standard deviations). The effect of the Child Support Grant on children aged 5 – 9 years

[35] I subtracted government grants from household income.

[36] Controlling for household income including government grants and another self-reported measure of household income does not change the results (0.365 and 0.404 standard deviations, also significant at 5 percent) for height-for-age. In the urban areas the estimate is 0.635 standard deviations for both results which are also significant at 5 percent. The results are very similar and consistent as detailed in Tables 5.23 and 5.24 in appendix.

[37] When I control for another self-reported measure of household income, the estimate becomes significant at 5 percent.

living in formal urban areas is an increase in height-for-age by 1.033 standard deviations, which is significant at 5 percent. However, the estimate of the impact of the program on height-for-age for children aged 1 – 4 years and living in formal urban areas is negative and not significant. In the tribal authority areas, the program had a positive impact on height-for-age for all age sub-groups as detailed in Table 5.22 (0.369; 0.381; 0.122; and 1.339 standard deviation for children aged below 15 years; 10 – 14 years; 5 – 9 years and 1 – 4 years respectively). The program effect is an increase in height-for-age by 1.339 standard deviations for children aged 1 – 4 years living in tribal authority areas, which is weakly significant. The estimates of the impact of the program on height-for-age for children living in informal urban areas and formal rural areas are negative and not significant.

On another hand, the program impact on weight-for-age is positive but not significant (0.22; 0.159; 0.271; and 0.353 for children aged below 15 years; girls; boys; and children aged 5 – 9 years, respectively). The estimate for children aged 1 – 4 years is negative and insignificant. The program is also estimated to have a significant impact on weight-for-age for children in the formal urban areas; an increase in weight-for-age by 0.674 standard deviations for children aged below 15 years, which is significant at 5 percent. The effect of the Child Support Grant on children aged 5 – 9 years living in formal urban areas is an increase in weight-for-age by 1.278 standard deviations, which is significant at 1 percent. The estimate of the impact of the program on weight-for-age for children aged 1 – 4 years and living in formal urban areas is negative, however, not significantly different from zero. In the tribal authority areas, the program had a positive, albeit not significant, impact on weight-for-age for children aged below 15 years and for children aged 1 – 4 years (0.085 and 1.19 standard deviations, respectively); weakly significant for children aged 1 – 4 years when I control for household income including grants and another self-reported income.

5.6.1.3 Robustness Check

To check internal validity of results and put the identification strategy to test, I designed another control group which is different for the results presented in the last section. In the last section, the results are based on a control group comprising of children who did not receive the grant (both from means-test eligible and ineligible households). In this section, the control group comprises of children who received the grant and those who did not receive the grant (from means-test eligible and ineligible households). This also has the advantage of increasing the number of observations remarkably. Like in the last section, treatment group comprises of children from households whose income fell between R 2 200 and R 4 400 (was greater than R 2 200 and less than or equal to R 4 400); to comply with my identification strategy.

Covariates used in these regressions are the same as those in the previous section. I controlled for 2010 and 2012 year dummies. Real income does not include government grants[38]. The general expectation is that children from bigger households will have lower health outcomes especially in developing countries; so I controlled for this. Other covariates are log of real expenditure on food, geographical classification, whether father is alive or not, household head's education, population group, child's age, gender dummy, health status, place of birth, health check-up status[39]. Table 5.25 shows summaries of results of the impact of the Child Support Grant on height-for-age and weight-for-age. The results compare very well with those presented in the previous section and they are consistent in almost all the sub-

[38] I also ran separate regressions in which I controlled for total household income including government grants as well as another set of regressions in which I controlled for a third self-reported measure of household income; and the summaries of the results are detailed in Tables 5.26 and 5.27.

[39] Health status is dummy with base = 'excellent'. As in the previous section, 'very good' was re-classified to 'good' and all the other lower classification to 'fair'. Place of birth is binary with base = 'hospital'. Health check-up refers to number of times a health professional was visited in the past 12 months; and the base = 'never'.

groups although they are slightly lower. The slight differences are negligible. The program effect for children below the age of 15 is an increase in height-for-age by 0.215 standard deviations; which is also significant at 10 percent[40]; and an increase in weight-for-age by 0.086 standard deviations, which is not significant. Breaking the sample by gender does not change the results with a program effect of an increase in height-for-age by 0.231 standard deviations for girls and 0.168 standard deviations for boys.

These results also show that the program had a significant impact on health outcomes for children living in urban areas. In particular, the program impact for children aged below 15 years and living in urban areas is an increase in height-for-age by 0.373 standard deviations. Although it is significant, it is weakly significant and much lower compared to the results using a control group comprised of children who did not receive the grant only. However, using log of real income that includes government grants as a control variable as opposed to one that does not, improves the significance of the results to significantly different form zero at the 5 percent level with a coefficient of 0.387 standard deviations[41]. On the other hand, the program increased weight-for-age by 0.573 standard deviations for children receiving the grant, which is significant at 5 percent. Furthermore, the program impact for children aged 5 – 9 years living in urban areas is an increase in height-for-age by 0.689 standard deviations, which is significant at 5 percent; and an increase in weight-for-age by 0.77 standard deviations, which is also significant at 1 percent just like in the results presented in the previous section.

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[40] However, when I use log of real income (which includes government grants) the program effect becomes significant at 5 percent with a coefficient of 0.239 standard deviations. When I use the third measure of self-reported household income in the data, the program effect also becomes significant at 5 percent with a coefficient of 0.244 standard deviations. The estimate for the impact on height-for-age for children living in formal urban areas also becomes significant at 5 percent; as detailed in Table 5.26 and Table 5.27 in appendix.

[41] The third measure of self-reported household income yields an impact estimate of 0.389 standard deviations, which is significant at 5 percent.

I also ran regressions based on 2012 means-test threshold using a control group of children both who received the grant and those who did not; who are from households whose incomes are less than or equal to R 2 800 and greater than R 5 600 (i.e. both means-test eligible and ineligible). The results are not very different from the ones presented in the previous section. Generally, the estimates are slightly lower but the differences are not alarming. Table 5.28 presents summaries of results of the impact of the program on height-for-age and weight-for-age. The effect of the program is an increase in height-for-age by 0.308 standard deviations for children below the age of 15 years, which is significant at 5 percent[42]. The program impact is also positive (0.341 standard deviations) for girls and significant at 10 percent.

The coefficients of the impact of the program on weight-for-age for the full sample are all positive but not significant for all the age sub-groups except for children aged 1 – 4 years (which is negative but also not significant) and they compare very well with the once presented in the previous section. The effect of the Child Support Grant is an increase in height-for-age by 0.431 standard deviations for children aged below 15 years living in formal urban areas and 0.74 standard deviations for children aged 10 – 14 years. However, the estimates are weakly significant compared to the ones in Table 5.22. For weight-for-age, the estimate loses significance completely. The program effect is an increase in height-for-age by 0.844 standard deviations for children aged 5 – 9 years living in formal urban areas; and an increase in weight-for-age by 0.719 standard deviations. They are both significant at 5 percent.

[42] The results do not change when I control for total household income including government grants and when I used another measure of self-reported household income (0.322 standard deviations; also significant at 5 percent); see Tables 5.29 and 5.30.

5.6.2 Panel Fixed Effects Results

Table 5.31 shows Fixed Effects estimation results of the impact of the Child Support Grant on height-for-age. I further disaggregated the sample to smaller age groups of 10 – 14 years, 5 – 9 years, and 1 – 4 years old. This classification is important. Generally, nutritional deficiencies experienced at an early stage of life tend to have a long-term impact on a child's z-score. Column (1) shows results on height-for-age for children below the age of 15; column (2), for children aged 10 – 14 years; column (3), for children aged 5 – 9 years; and column (4), for children aged 1 – 4 years. It is estimated that the program effect is an increase in height-for-age by 0.118 standard deviations, which is significant at 5 percent. This result supports hypothesis 5.1 in section 5.3, which says that the Child Support Grant has a significant impact on height-for-age for children in South Africa. Children who have had more than twice medical consultation with a health professional in the year have 0.135 standard deviations below the mean height-for-age compared to those who never consulted; which is also significant at 1 percent. Children from bigger households have 0.023 standard deviations below the mean weight-for-age; which is statistically different from zero at the 5 percent level.

A child who receives the Child Support Grant and aged 10 – 14 years sees an increase in height-for-age by 0.294 standard deviations, which is significant at 5 percent. Estimations for children aged 5 – 9 years do not yield a significant result although it is positive (0.129 standard deviations); neither do results for children aged 1 – 4 years (0.159 standard deviations).

Limiting the sample according to whether children are from formal urban areas, informal urban areas, formal rural areas and tribal authority areas is important and insightful.

Assuming that children (or households) do not move from one category to another between waves (which is a reasonable assumption given a 2 year difference between each wave), then Panel Fixed Effects is suited to address this by treating them as fixed effects and difference them away. No wonder why they are not included as covariates in regression results presented in Tables 5.31 to 5.41. Variables such as population group (black, white, coloured and Indian), household characteristics (such as dwelling conditions, water source, and toilet type), and gender as well as age were left out for similar reasons. However, it is generally known that rural areas differ greatly from urban areas in terms of access to health facilities, livelihoods (and presumably take-up rates). All this should not be a problem because I employed Panel Fixed Effects. All the same, I provided results of the effect of the Child Support Grant on health outcomes after limiting my sample according to the four geo-classifications; results of which are presented in Tables 5.32 to 5.35.

The effect of the program is an increase in height-for-age by 0.084 standard deviations for children below the age of 15 years living in urban formal areas, which is, however, not significant. A child aged between 10 and 14 years who lives in the formal urban areas and receives the Child Support Grant has a 0.298 standard deviation above the mean height-for-age than one who does not; which is significant at 5 percent. The estimates for children aged 5 – 9 years and 1 – 4 years are both positive but not significant; 0.135 and 0.128 standard deviations, respectively. For children living in informal urban areas, the program impact is an increase in height-for-age by 0.089 and 0.174 standard deviations for those aged below 15 years and 10 – 14 years, respectively; both not statistically different from zero. The estimates for children aged 5 – 9 years and 1 – 4 years are also insignificant.

None of the estimates for children living in formal rural areas are significant. This might be an indication that although supply side considerations are reasonably assumed to

fixed overtime, they might still have an overbearing effect for children living in the rural areas. Table 5.34 shows results of the impact of the Child Support Grant on height-for-age for children living in rural formal areas. For children living in tribal authority areas, the effect of the program on height-for-age is positive. Children aged below 15 years living in tribal authority areas see an increase in height-for-age by 0.155 standard deviations, which is significant at 10 percent. The effect of the program is an increase by 0.375; 0.341; and 0.282 standard deviations in height-for-age for children aged 10 – 14 years; 5 – 9 years; and 1 – 4 years living in tribal authority areas. The estimate for children aged 5 – 9 years is significant at 10 percent. These results are detailed in Table 5.35 in the appendix.

On the other hand, the impact of the Child Support Grant on weight-for-age is also positive in all the age subgroups as detailed in Table 5.36. The effect of the program is an increase in weight-for-age by 0.05; 0.102; and 0.256 standard deviations for children aged below 15 years; 5 – 9 years; and 1 – 4 years, respectively. However, none of the estimates is significant. The program is estimated to increase weight-for-age by 0.416 standard deviations for children aged 1 – 4 years and living in urban formal areas, which is weakly significant. The estimates for children aged below 15 years and 5 – 9 years are insignificant. These results are detailed in Table 5.37. All the estimates for children aged below 15 years; 5 – 9 years; and 1 – 4 years living in formal rural areas are negative and insignificant except for children aged below 15 years, which is significant at 5 percent.

Table 3.40 shows Fixed Effects estimation results of the impact of the Child Support Grant on weight-for-age for children living tribal authority areas. The effect of the program is an increase by 0.09; 0.151; and 0.032 standard deviations in weight-for-age for children aged below 15 years; 5 – 9 years; and 1 – 4 years living in tribal authority areas, respectively. However, all the estimates are statistically not different from zero. Further disaggregating the

sample according to gender shows that the variable of interest, the Child Support Grant, is not statistically different from zero for all the outcome variables for female children and male children; though positive. Table 5.41 shows Fixed Effects estimation results of the impact of the Child Support Grant on height-for-age and weight-for-age for girls and boys. The effect of the program is an increase by 0.122 and 0.112 standard deviations in height-for-age for girls and boys respectively; and an increase by 0.023 and 0.067 standard deviations in weight-for-age for girls and boys respectively.

5.6.3 Results on the effect of the program on obesity, overweight and underweight

Having considered the impact of the Child Support Grant on height-for-age and weight-for-age, the next natural question is to ask whether the program does not increase the chances of obesity among children in South Africa. South Africa is a country with a complex mix of under- and over-nutrition. Many countries are grappling with the challenge of obesity in the world. This is particularly so in South Africa given that 70 percent of adult females and 40 percent of adult males in South Africa are obese. The problem is also prevalent among children; with 25 percent of girls and 20 percent of boys in South Africa being obese (ibid). Obesity exposes children to the risks of suffering from diabetes and heart diseases. Is the Child Support Grant contributing to the problem of obesity in South Africa?

To answer this question, I estimated the effect of the Child Support Grant on obesity for children aged 5 – 14 years. My outcome variable is binary, which equals one when a child has a body mass index z-score[43] greater than 2. Table 5.42 in the appendix shows a summary

[43] According to the World Health Organization (WHO) 2007 growth reference, a child aged between 5 – 19 years is obese if his or her Body Mass Index z-score is greater than 2 standard deviations. Children with a body mass index z-score < -2 are classified as being thin and those with a z-score between +1 and +2 standard deviations as overweight.

of estimation results of the Child Support Grant on obesity for children aged 5 – 14 years. Column (1) shows Fixed Effects results and Column (3) shows Difference-in-Differences results[44]. A child aged 5 – 14 years who receives the Child Support Grant has 0.02 lower chance of being obese than one who does not; based on the Fixed Effects results. Using the Difference-in-Differences estimation method, a child aged 5 – 14 years who receives the grant has a 0.013 lower chance of being obese. However, both estimates are not statistically different from zero. The most important conclusion from these results is that the Child Support Grant does not seem to contribute to the problem of obesity among children in South Africa. This result supports hypothesis 5.3 in section 5.3, which says that the Child Support Grant does not increase the chances of obesity among children in South Africa. This is a very important conclusion considering that obesity is a serious challenge in South Africa where 70 percent of all adult females and 40 percent of all adult males are obese; and where 25 percent of all girls and 20 percent of all boys are obese. The Child Support Grant does not increase the chances of obesity among children in South Africa.

I further estimated the effect of the Child Support Grant on overweight, normal weight, and underweight (thinness) and the results are detailed in Tables 5.43 and 5.44 in the appendix. In the case of underweight (thinness), my dependent variable is equal to 1 if a child's body mass index z-score is less than -2. The results on underweight are detailed in Table 4.43. Column (1) shows results based on Panel fixed Effects and Column (3) shows results based on Differences-in-Differences estimations. The Child Support Grant reduces the

[44] Covariates used in Panel Fixed Effects estimations are: 2010 and 2012 year dummies, log of real income, log of real expenditure on food, household size, father alive (which is binary), heath status; self-reported and binary with base = 'excellent', health check-up; number of times health professional was consulted in the last 12 months and the base = 'never'. Covariates used in Differences-in-Differences estimations are: 2010 and 2012 year dummies, log of real income (less government grants), log of real expenditure on food, household size, father alive, household head's education, race dummies, gender dummy, child's age, and health check-up status.

chance of being underweight for children living South Africa. A child who receives the grant has a lower chance of being underweight than one who does not received.

For overweight, my dependent variable is equal to 1 if a child's body mass index is between 1 and 2. A child who receives the Child Support Grant has 0.011 and 0.041 lower chance of being overweight under the two methods respectively than one who does not receive the grant. These results are shown in Table 5.44. For normal weight my dependent variable is binary which equals 1 if a child's body mass index z-score is between -2 and 1. Using Panel Fixed Effects, a child who receives the Child Support Grant has a 0.042 higher chance of having normal weight than one who does not, which is significant at 5 percent. On the hand, under Difference-in-Differences is 0.077, which is also significant at 5 percent. Children who receive the Child Support Grant have a higher chance of having normal weight and a lower chance of being over- and under-weight and importantly too the Child Support Grant does not increase the chances of being obese for children living in South Africa.

5.7 Conclusion

Reconciling Difference-in-Differences results with Panel Fixed Effects results is important. The two methods were used in this chapter not to compete but to facilitate a thorough investigation and assessment of the impact of the Child Support Grant on health. The fact that Panel Fixed Effects results show relatively smaller coefficients might be an indication that indeed there were fixed characteristics that I was able to wish away. The consistence of the results under two different methodologies for most of the population sub-groups and age cohorts is reassuring. The results estimate a positive and significant impact on height-for-age for children below the age of 15 years (full sample) in Panel Fixed Effects

results and in all the different Difference-in-Differences scenarios used in this chapter. The impact on girls, although weakly significant under the Difference-in-Differences methodology, becomes insignificant under the Panel Fixed Effects methodology. The impact of the program for children aged 10 – 14 years (full sample) is strongly significant under the Panel Fixed Effects method.

The estimations of the impact of the program on weight-for-age for children aged below 15 years (full sample), girls, boys, and aged 5 – 9 years are all positive in Panel Fixed Effects results and in all Difference-in-Differences scenarios. The results estimate a positive impact on height-for-age for children aged below 15 years, aged 10 – 14 years, 5 – 9 years, and 1 – 4 years living in tribal authority areas; picking weak significance under Panel Fixed Effects for the full sample and for children aged 5 – 9 years. The impact on weight-for-age is also positive but insignificant for full sample living in tribal authority areas and for children aged 1 – 4 years (based on 2012 means-test threshold results and Panel Fixed Effects). The results estimate positive impact on height-for-age for children living in urban areas with Difference-in-Differences predicting results significant for the full sample and for children aged 5 – 9 years and Panel Fixed Effects results predicting significant results for children aged 10 – 14 years. In general, the Difference-in-Differences results show weakly significant and positive impact of the program on height-for-age to children aged 1 – 4 years in almost all the regressions.

The Child Support Grant has had an important impact on children's health. It has had a significant impact on height-for-age for children below the age of 15 years. It has also had a positive impact on weight-for-age in almost all the different age cohorts and population subgroups. The program has had a significant impact on the health of children living in formal urban areas. The Difference-in-Differences estimates of the impact of the program on

height-for-age z-scores for children aged below 15 years and aged 5 – 9 years are significant at 5 percent; and the program effect on weight-for-age is strongly significant. By extension, it can be concluded that the change in policy governing means-test eligibility criteria for those in spousal relationship (double income caregivers) had a significant impact on formal urban households and children.

It is always important to get a deeper understanding of the impact of social protection programs to children in their early years of life. Of particular importance is an understanding of the impact of the Child Support Grant on the health of children aged 1 – 4 years. Nutritional deficiencies experienced in a child's early years have long-term implications. Although most of the estimates of the program impact on height-for-age and weight-for-age for children aged 1 – 4 years are positive and in some cases weakly significant, they are not strongly significant. One possible explanation for this is a cascading effect from the low uptake of the Child Support Grant by caregivers for children below the age of 1 year. The uptake of the Child Support Grant is lowest among children below the age of 1 year. Relatedly, rural areas in South Africa still face challenges such as post-natal feeding support, social determinants of health such as low educational levels, poor housing and sanitation, insufficient health surveillance and information systems as well as a shortage of healthcare service providers. Supply-side factors still have an overbearing effect for children living in rural areas.

In general, however, the Child Support Grant has had a significant impact on height-for-age. One of the most important pieces of evidence in this chapter is the conclusion that the Child Support Grant reduces the chances of both thinness and obesity among children; an important conclusion given that South Africa is a society with a complex mix of under- and over-weight.

CHAPTER 6

CONCLUSIONS

There is so much interest in gaining a better understanding of programs that are capable of breaking intergenerational poverty among the poor and cash transfer programs, particularly those that pay particular attention to child poverty and human capital development are widely regarded as a development tool capable of achieving this objective. Cash transfers can be conditional or unconditional. Conditional cash transfer programs are prominent in many Latin American countries and quite a number of researchers have worked on analyzing the impact of these transfers on educational and health outcomes. Although much of the experience on the impact of cash transfers is from Latin American experiences, there is a renewed interest in understanding cash transfer programs in Africa with many programs in pilot stages.

The Child Support Grant in South Africa presents an interesting case study to better understand the impact of cash transfers on education and health for children living in Africa in general and on unconditional cash transfers in particular owing to the fact that the program has been largely unconditional for the greater part of its life. It is arguably the largest cash transfer program for children in Africa in terms of coverage; reaching to over 11 million children in a country with 18.6 million children. The program accounts for 40 percent of reported incomes in poor households and gives an eligible child R 320 per month (US$80 at PPP) and up to six age-eligible children per caregiver in a country where the poverty datum line is put at R 515 per month per person and where 50 percent of the population lives below the poverty line; this goes to show how important the Child Support Grant is in terms of fighting poverty.

There is some prior work on the impact of the Child Support Grant on education and health outcomes for children. In particular, however, there are few rigorous empirical studies that assess the impact of the Child Support Grant on the enrolment of secondary-school-aged children. Given the challenge South Africa is experiencing as far as secondary school education is concerned where drop-out rates are very high in secondary school reaching almost 50 percent by the time children sit for their matric examination which is taken in grade 12 (coupled with poor pass rates), this study bridges this gap by providing evidence to answer the question as to whether the Child Support Grant has a significant impact on the enrolment of secondary-school-aged children.

The study also looked at the impact of the Child Support Grant on the health of children living in South Africa. When discussing child poverty and human capital development, it is important to talk about education but is equally important to talk about health too, for the obvious reasons (from the literature) that a healthier child is more like to do well in school; and a healthier child is more likely to be a healthier adult and contribute to the development of a country. The findings from this analysis provide evidence to answer a question as to whether the Child Support Grant has a significant impact on the health of children living in South Africa. South Africa is a country with a complex mix of under- and over-nutrition. Although there is prior work on children's health outcomes in South Africa, none that I know of paid particular attention to find out whether the Child Support Grant contributes to the problem of obesity among children living in South Africa. This study fills this gap by providing evidence to a question that answers whether the Child Support Grant contributes to the problem of obesity among children. This is important, particularly so given that in South Africa about 70 percent of all female adults and 40 percent of all male adults are obese; and 25 percent of all girls and 20 percent of all boys in South Africa are obese.

Gaining a deeper understanding of whether the Child Support Grant increases the chances of obesity among children is therefore important because if so, then the program would expose children to serious health problems such as diabetes and heart diseases.

In assessing the impact of the Child Support Grant on the enrolment of secondary-school-aged children I used the South African General Household Survey (GHS) data from 2007 to 2012; and Wave 2 and Wave 3 of the National Income Dynamics Study (NIDS), which is the first nationally representative panel data in South Africa that came into being through a Presidential Decree. On the other hand, in assessing the impact of the Child Support Grant on children's health outcomes I used Wave 1, Wave 2, and Wave 3 of the National Income Dynamics Study (NIDS). This study, therefore, assesses the impact of the Child Support Grant on human capital development: particularly on education and health for children living in South Africa. This chapter proceeds as follows: Section 6.1 summarizes the related literature on cash transfers in general and on the Child Support Grant in particular, and the empirical findings from the investigation of the impact of the Child Support Grant on the enrolment of secondary-school-aged children as well as empirical findings from the investigation of the impact of the Child Support Grant on children's health outcomes in South Africa; drawing from these findings, Section 6.2 concludes the chapter with policy implications.

6.1 Summary of findings

The Child Support Grant is an important source of income for poor families living in South Africa. In recent years, the age eligibility criterion has been adjusted to include virtually all children under the age of eighteen years. It has been undergoing a marked

transformation and transition over the years; both in terms of age eligibility and grant amounts as detailed in Chapter 2. The review of the literature in Chapter 3 reveals that much of the work on the impact of cash transfers on education and health is based on Latin American experiences. By and large, these experiences are on Conditional Cash Transfers. Chapter 3 extensively reviewed the literature on conditional versus unconditional cash transfers and several arguments are advanced for and against conditions. This dissertation contributes to the limited literature on cash transfers in Africa in general, and add a better understanding of the impact of unconditional cash transfers in particular; owing to the fact that the Child Support Grant has largely been unconditional for its entire life although there is so much debate and attempts to make it conditional on health and education. There is renewed interest in understanding the impact of unconditional cash transfers in Africa with a lot of programs in their pilot stages in East and Southern Africa (Kenya, Malawi, Zambia, and Zimbabwe). Now, more than ever before, it is timely to gain a better understanding of the impact of cash transfers on human capital development in the context of African experiences to better inform policy-makers in this region.

Chapter 3 also looks at the existing literature on the Child Support Grant in general and linking the literature on the impact of the Child Support Grant on education and health in particular. Although prior work on the impact of the Child Support Grant on education shows significant impact on enrolment, none of this work paid particular attention to secondary-school-aged children. Most of this work looks at primary-school-aged children and this Dissertation fills this gap in literature by paying particular attention to secondary-school-aged children. Earlier work on the impact of cash transfers on children's health outcomes in South Africa is on the impact of the Old Age Pension on children's health outcomes; where positive impacts are registered. In a few cases where earlier work on children's health outcomes

focused on the Child Support Grant, this research expanded on that by bringing in a nationally representative and longitudinal data as opposed to data from one province in some cases and cross sectional data in other cases as well as expanding the analysis to children under the age of 15 grouping them into different age cohorts to further interrogate the subject.

In addressing the gaps identified in the literature, I presented my own empirical findings in Chapters 4 and 5. Chapter 4 provided an impact evaluation of the Child Support Grant on the enrolment of secondary-school-aged children in South Africa. South Africa has a serious challenge as far as secondary school education is concerned; with high drop-out rates reaching as high as 50 percent by the time children sit for their matric examination taken in grade 12. The finding from the three empirical methods employed; namely: Difference-in-Differences framework; Instrumental Variables Method; and Panel Fixed Effects Estimations shows that the Child Support Grant has a positive and significant (significant at 1 percent in all the three empirical methods used) impact on the enrolment of secondary-school-aged children. This is a very important conclusion given the challenges that South Africa is experiencing as far as secondary school education is concerned; here is a program which has a significant impact on the enrolment of secondary-school-aged children.

The Child Support Grant has a positive and significant (significant at 1 percent under the Instrumental Variables method and Panel Fixed Effects; and at 5 percent under the Difference-in-Differences framework) impact on the enrolment of secondary-school-aged boys. This is a very important conclusion too, considering that drop-out rates for boys are much higher than those of girls for all grades in secondary school. It is an important conclusion too considering that the opportunity cost of attending school from labor activities used to be higher for boys than that of girls.

The program has a positive and significant (significant at 1 percent) impact on the enrolment of secondary-school-aged children living in formal urban areas; and a positive but not significant impact on the enrolment of secondary-school-aged children living in urban informal areas and in Tribal Authority Areas. The Child Support Grant has no impact on the enrolment of secondary-school-aged children living in formal rural areas. This is an important observation. Rural areas are characteristic of inadequate physical conditions which might have an overbearing effect on the enrolment of secondary school aged children and are therefore important for policy consideration.

Given the challenges South Africa is experiencing as far as secondary school education is concerned with high drop-out rates, here is a program that has a significant impact on the enrolment of secondary-school-aged children. The Child Support Grant has a significant impact on the enrolment of secondary-school-aged children particularly for boys; and it is also comparatively cost-effective when compared to other programs in the region. The cost-effectiveness analysis shows that the Child Support Grant is able to buy 0.03 years of additional schooling for every US$100 spend. This is comparable and slightly higher when compared to 0.02 additional years of schooling achieved by an unconditional cash transfer in Malawi. Scale, among other factors, is important; the Child Support Grant is reaching to over 11 million children whereas programs in Malawi are reaching to a few thousand beneficiaries. However, the cost effectiveness estimate of 0.03 additional years of schooling for every US$100 spend achieved by the Child Support Grant is lower than an estimate of 0.09 achieved by a conditional cash transfer in Malawi suggesting that there is room for the Child Support Grant to be more cost effective if conditionalities are fully introduced and enforced.

Chapter 5 provided an impact evaluation of the Child Support Grant on the health of children living in South Africa. It answers whether the Child Support Grant has a significant

impact on height-for-age and weight-for-age of children living in South Africa; and whether the Child Support Grant contributes to the problem of obesity among children that is so prevalent in South Africa. The findings show that the Child Support Grant has a positive and significant impact on height-for-age for children below the age of 15 years living in South Africa. The program has a positive and significant impact on height-for-age for children living in formal urban areas. On the other hand, the program has a positive impact on weight-for-age for children living in South Africa. The program has a positive impact on weight-for-age for children living in formal urban areas. However, the program does not have an impact on height-for-age and weight-for-age for children living formal rural areas. Rural areas in South Africa still face challenges such as post-natal feeding support, social determinants of health such as low educational levels, poor housing and sanitation, insufficient health surveillance and information systems as well as a shortage of healthcare service providers.

Chapter 5 also paid special attention to children in their early years of life (aged 1 – 4 years) for the obvious reason that nutritional deficiencies experienced at this stage in life are very difficult to reverse and have a long-term effect on a child's well-being. Although the program impact estimates on height-for-age and weight-for-age for this age group are positive; and in some cases weakly significant, they are, however, not strongly significant. This might be as a result of a cascading effect from a low uptake of the Child Support Grant by caregivers for children below the age of 1 year. The uptake of the Child Support Grant is lowest among children below the age of 1 year.

I also looked at whether the Child Support Grant contributes to the problem of obesity among children. Obesity is a serious problem the world over and exposes children to serious problems of diabetes and heart diseases. This is particularly so in South Africa, where 70 percent of all adult females and 40 percent of all adult males are obese; and where 25

percent of all girls and 20 percent of all boys are obese. South Africa is a country with a complex mix of under- and over-nutrition. The finding from this empirical investigation shows that the Child Support Grant does not increase the chances of obesity among children in South Africa. This is a very important conclusion. In conclusion in Chapter 5, overall, the Child Support Grant has a significant impact on children's health outcomes in South Africa and does not contribute to the problem of obesity that is so prevalent in South Africa.

In conclusion, given the challenges that South Africa is experiencing as far as secondary school education is concerned, the Child Support Grant has a significant impact on the enrolment of secondary-school-aged children. In terms of breaking intergenerational poverty through human capital development, indeed the Child Support Grant has a significant impact on the enrolment of secondary-school-aged children and a significant impact on the health of children living in South Africa; and does not contribute to the problem of obesity among children.

6.2 Policy Implications

The investigation of the impact of the Child Support Grant on the enrolment of secondary-school-aged children; and on height-for-age and weight-for-age for children living in South Africa reveals important policy implications. The Child Support Grant does not have an impact on the enrolment of secondary-school-aged children living in formal rural areas. Rural areas are characteristic of inadequate physical conditions in schools, poor accessibility and comparatively weak learner performance. Critically too, the Child Support Grant does not have an impact on height-for-age and weight-for-age for children living in formal rural areas. Rural areas in South Africa still face challenges such as post-natal feeding support,

social determinants of health such as low educational levels, poor housing and sanitation, insufficient health surveillance and information systems as well as a shortage of healthcare service providers. Supply-side factors still have an overbearing effect for children living in rural areas. This finding has important policy implications. It is of paramount importance for policy makers to pay particular attention to children living in rural areas.

It cannot be overemphasized that nutritional deficiencies experienced in the early years of a child's life are difficult to reverse and have a long-term effect on a child's well-being. It is of particular importance to note that, although the program impact on height-for-age and weight-for-age for children aged 1 – 4 years are positive, and in some cases weakly significant, it is not strongly significant. This is a critical age group. Health outcomes for this age group are very important. A special attention to this age group is warranted if the objective of breaking intergenerational poverty is to be achieved. Healthier children are more likely to do well in school; and healthier children are more likely to be healthier adults and be able to contribute to the development of a country. At policy level, it is therefore important to pay special attention to children living in rural areas and children aged 1 – 4 years and to further encourage the uptake of the Child Support Grant among children below the age of 1 year (making documentation easier to get) so that the human capital development for these groups of children is also enhanced just like other groups of children in South Africa.

The investigation also revealed that there is room to improve the cost-effectiveness of the Child Support Grant by implementing and enforcing conditionalities, for example. When compared to conditional programs in the region the program is less cost-effective but when compared to unconditional programs it is slightly cost-effective. The Child Support Grant remains an interesting case study and potential areas of further research include an empirical investigation of the impact of the Child Support Grant on poverty outcomes.

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APPENDIX

Table 2.1: Beneficiaries, Eligibility and Grant Amount over years

	Child Support Grant			Care Dependency		Foster Grant	
Year	Beneficiaries	Age threshold	Nominal grant value	Beneficiaries	Nominal grant value	Beneficiaries	Nominal grant value
1999	21,997	< 7 years	R 100	16,835	R 520	46,496	R 374
2000	150,366	< 7 years	R 100	22,789	R 540	49,843	R 390
2001	856,402	< 7 years	R 110	33,574	R 570	66,967	R 410
2002	1,277,396	< 7 years	R 140	34,978	R 640	67,817	R 460
2003	3,947,073	< 9 years	R 160	42,355	R 700	83,574	R 500
2004	4,446,230	< 11 years	R 170	76,494	R 740	120,571	R 530
2005	5,465,545	< 14 years	R 180	86,917	R 780	195,454	R 560
2006	7,075,266	< 14 years	R 190	90,112	R 820	317,434	R 590
2007	7,892,869	< 14 years	R 200	98,631	R 870	400,503	R 620
2008	8,189,975	< 14 years	R 220	102,292	R 960	454,199	R 650
2009	8,765,354	< 15 years	R 240	107,065	R 1010	474,759	R 680
2010	9,570,287	< 16 years	R 250	110,731	R 1080	510,760	R 710
2011	10,336,000	< 17 years	R 260	121,000	R 1080	554,000	R 710
2012	10,977,000	< 18 years	R 280	128,000	R 1140	613,000	R 740

Notes: R stands for South African Rand; R 100 is approximately equivalent to US $12.50 using average foreign exchange rate for 2012.
Source: South African Human Rights Commission/UNICEF (2011).

Table 2.2: Number of Children receiving the Child Support Grant in South Africa by province, 1999 – 2009

	Number of Beneficiaries										
Province	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Eastern Cape	4,131	26,342	122,214	187,256	630,157	747,838	1,032,201	1,379,325	1,482,450	1,481,128	1,575,528
Free State	1,183	7,195	54,140	83,379	226,497	249,439	328,350	405,321	436,192	454,150	473,141
Gauteng	2,721	24,762	114,125	156,639	496,867	558,358	696,991	843,745	912,920	959,139	1,031,785
KwaZulu-Natal	5,778	27,982	203,948	291,329	945,417	1,085,447	1,287,851	1,651,827	1,942,365	2,102,775	2,297,520
Limpopo	1,674	21,847	135,473	204,461	684,675	740,937	955,630	1,175,221	1,249,443	1,274,823	1,364,184
Mpumalanga	539	14,780	75,179	100,465	329,096	371,463	468,987	598,787	641,068	657,534	696,614
North West	1,206	14,375	81,215	120,929	312,468	351,867	457,953	581,014	648,558	631,499	666,259
Northern Cape	2,052	6,646	17,482	25,937	67,818	71,703	94,830	116,887	128,658	182,225	202,630
Western Cape	2,713	6,437	52,626	107,001	254,078	269,178	344,327	418,437	451,215	474,385	525,014
South Africa	21,997	150,366	856,402	1,277,396	3,947,073	4,446,230	5,667,120	7,170,564	7,892,869	8,217,658	8,832,675

Notes: These figures are taken from end of April for each year and are compiled from South African Social Security (SASSA) SOPEN monthly reports.
Source: Children's Institute, University of Cape Town.

Table 2.3: Number of Beneficiaries of the Child Support Grant by age and province as at 30 June 2011

Age	EC	FS	GAU	KZN	LIM	MPU	NW	NC	WC	Total
(0-1 yrs)	74 455	30 236	66 160	113 815	73 040	37 870	28 969	11 708	35 164	471 417
(1-2 yrs)	99 812	39 511	92 978	156 402	95 599	57 607	45 572	16 622	52 055	656 158
(2-3 yrs)	108 824	41 170	98 238	168 819	99 788	62 838	51 131	17 886	58 215	706 909
(3-4 yrs)	119 287	43 414	100 194	181 963	104 137	66 804	54 203	17 933	58 527	746 462
(4-5 yrs)	119 881	41 994	96 833	180 604	100 542	65 476	54 576	17 387	56 106	733 399
(5-6 yrs)	123 790	41 794	96 986	187 620	99 603	66 617	53 979	17 332	54 931	742 652
(6-7 yrs)	119 996	41 303	93 689	177 739	94 276	65 991	53 580	16 848	51 396	714 818
Total 0-7	766 045	279 422	645 078	1 166 962	666 985	423 203	342 010	115 716	366 394	4 771 815
(7-8 yrs)	112 890	38 618	89 497	166 128	84 294	61 731	50 470	16 253	48 355	668 236
(8-9 yrs)	103 266	34 828	81 714	155 893	77 518	56 869	46 246	15 509	44 852	616 695
Total 7-9	216 156	73 446	171 211	322 021	161 812	118 600	96 716	31 762	93 207	1 284 931

Notes: EC = Eastern Cape Province, FS = Free State, GP = Gauteng Province, KZN = KwaZulu Natal, LP = Limpopo Province, MP = Mpumalanga Province, NW = North West, NC = Northern Cape, WC = Western Cape and SA = South Africa.
Source: Tiberti et al. (2013).

Table 2.4: Number of Beneficiaries of the Child Support Grant by age and province as at 30 June 2011

Age	EC	FS	GAU	KZN	LIM	MPU	NW	NC	WC	Total
(9-10 yrs)	98 578	33 822	77 787	159 740	75 727	54 849	44 767	14 760	43 140	603 170
(10-11 yrs)	95 621	32 806	73 977	152 548	76 129	56 081	43 898	14 200	43 364	588 624
Total 10-11	194 199	66 628	151 764	312 288	151 856	110 930	88 665	28 960	86 504	1 191 794
(11-12 yrs)	99 546	31 806	70 234	155 238	76 031	55 910	42 453	14 646	42 083	587 947
(12-13 yrs)	103 749	29 324	65 761	149 619	74 922	53 359	40 013	13 825	39 741	570 313
(13-14 yrs)	103 480	28 646	62 864	143 549	75 175	53 799	38 285	13 274	37 942	557 014
Total 11-14	306 775	89 776	198 859	448 406	226 128	163 068	120 751	41 745	119 766	1 715 274
(14-15 yrs)	103 388	29 398	63 840	139 666	76 481	53 763	38 870	13 320	38 606	557 332
(15-16 yrs)	103 458	29 461	60 137	135 218	77 318	52 387	38 049	12 792	35 752	544 572
(16-17 yrs)	94 057	26 366	51 721	116 285	74 904	48 049	33 679	11 399	29 503	485 963
(17-18 yrs)	44 272	13 718	21 709	61 419	44 040	24 919	13 508	5 311	12 185	241 081
Total 14-18	345 175	98 943	197 407	452 588	272 743	179 118	124 106	42 822	116 046	1 828 948

Notes: EC = Eastern Cape Province, FS = Free State, GP = Gauteng Province, KZN = KwaZulu Natal, LP = Limpopo Province, MP = Mpumalanga Province, NW = North West, NC = Northern Cape, WC = Western Cape and SA = South Africa.
Source: Tiberti et al. (2013).

Table 2.5: Social Grants Expenditure by Type of Grant and Province, 2003/04 to 2009/10

Social grants expenditure by type of grant and province, 2003/04 to 2009/10

R million	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	% growth (average annual)
Old age	17146	18504	19527	21590	22782	24405	26106	7.3
War veterans	34	36	28	25	21	18	14	-13.7
Disability	10329	12570	14099	14707	15728	16991	18347	10
Foster care	1142	1563	1996	2464	3404	4091	4886	27.4
Care Dependency	639	760	916	998	1127	1240	1357	13.4
Child Support	7690	11431	14143	17936	19176	20888	22327	19.4
Total	36982	44885	50708	57720	62238	67633	73037	12
Province								
Eastern Cape	7553	9006	9732	11085	11826	12855	13953	10.8
Free State	2379	3049	3352	3919	4214	4667	5166	13.8
Gauteng	4454	5411	6130	6938	7114	7682	8223	10.8
KwaZulu-Natal	8165	10275	11898	13362	15249	16610	17855	13.9
Limpopo	4899	5802	6815	7722	8464	9144	9899	12.4
Mpumalanga	2421	2981	3476	3888	4140	4484	4818	12.2
Northern Cape	936	1065	1177	1344	1429	1543	1660	10
North West	3064	3795	4186	4861	4963	5403	5823	11.3
Western Cape	3111	3500	3942	4601	4839	5245	5640	10.4
Total	36982	44885	50708	57720	62238	67633	73037	12

Notes: Data for 2008/09 and 2009/10 is based on National Medium Term Expenditure Estimates. War Veterans grant is payable to veterans from World War II or Korean War

Source: National Treasury, National Budget 2007, Social Development Vote 17.

Table 2.6: Social Assistance Expenditure by Grant, 2009/10 to 2015/16

Subprogramme R in 1000s	Audited outcome			Adjusted appro.	Average growth rate (%)	Expen-diture/ total: Average (%)	Medium-term expenditure estimate			Average growth rate (%)	Expen-diture/ total: Average
	2009/10	2010/11	2011/12	2012/13	2009/10- 2012/13		2013/14	2014/15	2015/16	2012/13 - 2015/16	
Old Age	29 826 420	33 750 600	37 129 812	39 323 119	9.70%	38.10%	44 328 024	47 913 265	51 464 236	9.40%	39.00%
War Veteran	16 644	13 976	11 848	12 902	-8.10%	-	8 167	6 840	5 659	-24.00%	-
Disability	16 566 681	16 840 182	17 375 021	19 062 534	4.80%	19.00%	18 775 972	19 754 371	20 659 406	2.70%	16.70%
Foster Care	4 434 346	4 616 442	5 010 915	5 951 842	10.30%	5.40%	5 576 084	6 176 403	6 719 023	4.10%	5.20%
Care D	1 434 143	1 586 452	1 736 431	1 856 901	9.00%	1.80%	2 058 799	2 252 870	2 444 150	9.60%	1.80%
Child Support	26 669 761	30 341 465	34 319 636	38 237 293	12.80%	35.20%	41 793 203	44 854 945	47 619 211	7.60%	36.80%
Grant-in-Aid	146 295	170 052	204 026	188 144	8.70%	0.20%	247 336	274 195	303 421	17.30%	0.20%
Social Relief	165 458	173 737	185 298	255 181	15.50%	20.0%	219 256	249 212	278 172	2.90%	0.20%
Total	79 259 748	87 492 906	95 972 987	104 887 916	9.80%	100.00%	113 006 841	121 482 101	129 493 278	7.30%	100.00%
Change to 2012 Budget estimate							(200 000)	(500 000)	1 900 000		

Notes: Social Relief of Distress is payable for a maximum of 3 months to any person that is not benefiting from another social grant and who is under dire economic distress.
Source: National Treasury, National Budget 2013

Table 4.1: Descriptive Statistics, General Household Survey (2007 – 2012)

(Sample – 13 to 18 year olds)

	2007	2008	2009	2010	2011	2012
	mean	mean	mean	mean	mean	mean
VARIABLES	(sd)	(sd)	(sd)	(sd)	(sd)	(sd)
Enrolment	0.908	0.912	0.905	0.904	0.915	0.929
	(0.289)	(0.283)	(0.293)	(0.294)	(0.279)	(0.257)
Child Support Grant	0.0881	0.113	0.186	0.289	0.393	0.508
	(0.284)	(0.316)	(0.389)	(0.453)	(0.488)	(0.500)
Head's Age	51.61	50.94	52.37	52.05	52.24	49.95
	(14.74)	(15.16)	(14.52)	(14.82)	(14.64)	(11.37)
Parent Education	6.944	7.399	7.063	7.119	7.423	8.231
	(5.642)	(5.702)	(6.138)	(5.961)	(6.282)	(6.154)
Household Size	6.189	6.116	6.084	6.104	6.041	6.089
	(2.713)	(2.796)	(2.697)	(2.870)	(2.838)	(3.031)
Siblings	3.491	3.138	3.397	3.404	3.333	3.311
	(1.927)	(1.870)	(1.977)	(2.029)	(2.007)	(2.165)
Household income	2,153	2,222	3,809	3,983	4,302	4,965
	(53,050)	(21,457)	(4,353)	(4,461)	(4,787)	(5,158)
Child's Age	15.45	15.44	15.47	15.51	15.51	15.50
	(1.707)	(1.680)	(1.722)	(1.721)	(1.682)	(1.678)
Dual income	0.0866	0.0772	0.0753	0.0738	0.0677	0.101
	(0.281)	(0.267)	(0.264)	(0.261)	(0.251)	(0.302)
Father alive	0.721	0.713	0.686	0.700	0.689	0.770
	(0.448)	(0.453)	(0.464)	(0.458)	(0.463)	(0.421)
Father resident	0.320	0.316	0.311	0.291	0.288	0.406
	(0.466)	(0.465)	(0.463)	(0.454)	(0.453)	(0.491)
Male child	0.500	0.506	0.510	0.508	0.500	0.490
	(0.500)	(0.500)	(0.500)	(0.500)	(0.500)	(0.500)
White	0.0244	0.0192	0.0215	0.0192	0.0236	0.0332
	(0.154)	(0.137)	(0.145)	(0.137)	(0.152)	(0.179)
Coloured	0.116	0.0935	0.0903	0.0885	0.0959	0.115
	(0.320)	(0.291)	(0.287)	(0.284)	(0.295)	(0.320)
Indian	0.0120	0.0160	0.0155	0.0145	0.0126	0.0146
	(0.109)	(0.125)	(0.123)	(0.120)	(0.111)	(0.120)
Mother alive	0.861	0.856	0.846	0.846	0.839	
	(0.346)	(0.351)	(0.361)	(0.361)	(0.367)	
Mother resident	0.638	0.639	0.627	0.614	0.610	
	(0.481)	(0.480)	(0.484)	(0.487)	(0.488)	
No. of Obs.	14,533	11,962	10,418	11,349	10,589	5,971

Notes: Standard deviations are in parenthesis.

Table 4.2: Descriptive Statistics, General Household Survey (2007 – 2012) by age

Panel A – 15 year olds

	2007	2008	2009	2010	2011	2012
VARIABLES	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)
Enrolment	0.944	0.966	0.962	0.965	0.972	0.970
	(0.230)	(0.182)	(0.190)	(0.183)	(0.166)	(0.171)
Child Support Grant	0.0220	0.0294	0.0461	0.382	0.509	0.565
	(0.147)	(0.169)	(0.210)	(0.486)	(0.500)	(0.496)
Male child	0.481	0.521	0.514	0.515	0.518	0.491
	(0.500)	(0.500)	(0.500)	(0.500)	(0.500)	(0.500)
No. of Obs.	2,407	2,006	1,994	2,025	1,984	1,896

Panel B – 16 year olds

	2007	2008	2009	2010	2011	2012
VARIABLES	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)
Enrolment	0.922	0.920	0.929	0.929	0.931	0.944
	(0.269)	(0.271)	(0.257)	(0.257)	(0.254)	(0.231)
Child Support Grant	0.00806	0.0129	0.0194	0.128	0.393	0.513
	(0.0894)	(0.113)	(0.138)	(0.334)	(0.489)	(0.500)
Male child	0.497	0.514	0.499	0.501	0.499	0.489
	(0.500)	(0.500)	(0.500)	(0.500)	(0.500)	(0.500)
No. of Obs.	2,730	2,251	1,959	2,184	2,048	1,914

Panel C – 17 year olds

	2007	2008	2009	2010	2011	2012
VARIABLES	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)
Enrolment	0.866	0.874	0.859	0.859	0.874	0.887
	(0.340)	(0.332)	(0.348)	(0.349)	(0.332)	(0.317)
Child Support Grant	0.00616	0.00998	0.00932	0.0291	0.162	0.353
	(0.0782)	(0.0994)	(0.0961)	(0.168)	(0.369)	(0.478)
Male child	0.503	0.512	0.525	0.506	0.488	0.484
	(0.500)	(0.500)	(0.499)	(0.500)	(0.500)	(0.500)
No. of Obs.	2,599	2,205	2,147	2,163	2,088	1,895

Notes: Standard Deviations are in parenthesis

Table 4.3: Descriptive Statistics, General Household Survey (2007 – 2012) by groups

Panel A – Treatment group based on 2008 means-test threshold (age 13 -18)

	2007	2008	2009	2010	2011	2012
	mean	mean	mean	mean	mean	mean
VARIABLES	(sd)	(sd)	(sd)	(sd)	(sd)	(sd)
Enrolment	0.888	0.901	0.896	0.908	0.902	0.918
	(0.316)	(0.298)	(0.305)	(0.288)	(0.297)	(0.275)
Observations	1,008	933	2,873	3,224	3,122	3,166

Panel B – Low income control group based on 2008 means-test threshold (age 13 -18)

	2007	2008	2009	2010	2011	2012
	mean	mean	mean	mean	mean	mean
VARIABLES	(sd)	(sd)	(sd)	(sd)	(sd)	(sd)
Enrolment	0.897	0.897	0.888	0.852	0.855	0.843
	(0.304)	(0.304)	(0.315)	(0.355)	(0.352)	(0.364)
Observations	12,045	9,599	4,346	3,983	2,804	1,922

Panel C – Treatment group based on 2012 means-test threshold (age 13 -18)

	2007	2008	2009	2010	2011	2012
	mean	mean	mean	mean	mean	mean
VARIABLES	(sd)	(sd)	(sd)	(sd)	(sd)	(sd)
Enrolment	0.904	0.930	0.895	0.908	0.912	0.918
	(0.295)	(0.256)	(0.306)	(0.290)	(0.284)	(0.274)
Observations	986	922	2,464	2,707	2,563	2,757

Panel D – Low income control group based on 2012 means-test threshold (age 13 -18)

	2007	2008	2009	2010	2011	2012
	mean	mean	mean	mean	mean	mean
VARIABLES	(sd)	(sd)	(sd)	(sd)	(sd)	(sd)
Enrolment	0.896	0.895	0.883	0.854	0.849	0.845
	(0.305)	(0.306)	(0.321)	(0.353)	(0.359)	(0.362)
Observations	12,328	9,892	5,240	4,783	3,434	2,442

Notes: Standard Deviations are in parenthesis

Table 4.4: Descriptive Statistics by Treatment and Control groups in the base year, General Household Survey 2007

(Children aged 13 – 18 years)

DESCRIPTIVE STATISTICS IN THE BASE YEAR – 2007					
	Control Group		Treatment Group		Difference in Means
VARIABLES	Mean	SD	Mean	SD	p-value
Enrolment	0.897	0.304	0.885	0.319	0.267
Child's Age	15.70	1.635	15.68	1.641	0.834
Boys	0.501	0.500	0.499	0.500	0.916
Girls	0.499	0.500	0.500	0.500	0.916
White	0.025	0.156	0.018	0.133	0.177
Children under 17 years	0.639	0.480	0.636	0.481	0.846
Children in: *Grade 7*	0.163	0.369	0.183	0.387	0.108
Grade 8	0.178	0.384	0.188	0.391	0.513
Grade 10	0.126	0.332	0.124	0.330	0.876
No. of Siblings: *Three*	0.207	0.405	0.217	0.412	0.49
Four	0.179	0.383	0.159	0.366	0.114
Household Size: *Four*	0.153	0.360	0.165	0.371	0.327
Five	0.164	0.370	0.176	0.381	0.355
Head's education:	0.058	0.234	0.071	0.256	0.124
Head's age: *30 to 40 yrs*	0.169	0.375	0.173	0.379	0.708
Province: *Free State*	0.068	0.251	0.069	0.254	0.834
North West	0.06	0.237	0.07	0.254	0.22
Mpumalanga	0.084	0.277	0.086	0.281	0.782

Notes: Number of Observations: Treatment Group = 951; Control Group = 12 052 for all variables except for enrolment which was = 12 045 children. Head's education is 10 years of schooling.

Table 4.5: Descriptive Statistics of Take-up rates, General Household Survey (2007 – 2012) by groups

Panel A: Treatment group based on 2008 means-test threshold

	2007	2008	2009	2010	2011	2012
VARIABLES	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)
Child Support Grant	0.0612	0.0795	0.204	0.343	0.457	0.537
	(0.240)	(0.271)	(0.403)	(0.475)	(0.498)	(0.499)
No. of Obs.	1,013	931	2,853	3,232	3,136	3,185

Panel B: High income control group based on 2008 means-test threshold

	2007	2008	2009	2010	2011	2012
VARIABLES	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)
Child Support Grant	0.0264	0.0473	0.0790	0.127	0.189	0.250
	(0.160)	(0.212)	(0.270)	(0.334)	(0.391)	(0.433)
No. of Obs.	1,555	1,542	4,002	3,938	3,748	3,851

Panel C: Treatment group based on 2012 means-test threshold

	2007	2008	2009	2010	2011	2012
VARIABLES	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)
Child Support Grant	0.0436	0.0718	0.178	0.306	0.408	0.514
	(0.204)	(0.258)	(0.382)	(0.461)	(0.492)	(0.500)
No. of Obs.	986	919	2,440	2,716	2,573	2,760

Panel D: High income control group based on 2012 means-test threshold

	2007	2008	2009	2010	2011	2012
VARIABLES	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)
Child Support Grant	0.0259	0.0457	0.0608	0.0959	0.150	0.200
	(0.159)	(0.209)	(0.239)	(0.294)	(0.357)	(0.400)
No. of Obs.	1,272	1,247	3,271	3,182	3,047	3,128

Notes: Standard Deviations are in parenthesis.

Table 4.6: Descriptive Statistics, General Household Survey (2007 – 2012) by gender

Panel A: Enrolment rates for Girls aged 13 – 18 years

	2007	2008	2009	2010	2011	2012
VARIABLES	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)
Enrolment	0.904	0.907	0.901	0.893	0.910	0.916
	(0.294)	(0.291)	(0.299)	(0.309)	(0.286)	(0.278)
No. of Obs.	7,930	6,602	6,112	6,386	5,934	5,587

Panel B: Enrolment rates for Boys aged 13 – 18 years

	2007	2008	2009	2010	2011	2012
VARIABLES	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)
Enrolment	0.912	0.915	0.912	0.912	0.921	0.928
	(0.283)	(0.279)	(0.283)	(0.283)	(0.270)	(0.259)
No. of Obs.	7,909	6,749	6,317	6,629	5,963	5,492

Panel C – Enrolment rates by Treatment group and gender based on 2008 means-test threshold

	2007	2008	2009	2010	2011	2012
VARIABLES	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)
Enrolment: Girls	0.882	0.907	0.881	0.889	0.898	0.906
	(0.323)	(0.290)	(0.324)	(0.314)	(0.303)	(0.291)
Obs.	507	486	1,440	1,612	1,610	1,625
Enrolment: Boys	0.895	0.895	0.909	0.928	0.908	0.930
	(0.307)	(0.307)	(0.288)	(0.259)	(0.290)	(0.255)
Obs.	506	457	1,450	1,617	1,517	1,555

Panel D – Low income control group and gender based on 2008 means-test threshold

	2007	2008	2009	2010	2011	2012
VARIABLES	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)	mean (sd)
Enrolment: Girls	0.891	0.890	0.879	0.840	0.843	0.823
	(0.312)	(0.313)	(0.327)	(0.367)	(0.364)	(0.381)
Obs.	5,972	4,683	2,092	1,961	1,359	946
Enrolment: Boys	0.903	0.902	0.897	0.863	0.867	0.862
	(0.296)	(0.297)	(0.304)	(0.344)	(0.340)	(0.345)
Obs.	6,002	4,841	2,198	2,019	1,438	972

Table 4.7: Descriptive Statistics, NIDS Wave 2 (2010) and Wave 3 (2012)

(Data – NIDS Wave 2 and Wave 3)

VARIABLES	2010 mean (sd)	2012 mean (sd)
Enrolment	0.931	0.887
	(0.254)	(0.316)
Child Support Grant	0.320	0.381
	(0.467)	(0.486)
Household Size	6.663	6.385
	(3.442)	(3.447)
Age	15.26	16.90
	(1.685)	(1.677)
Coloured	0.103	0.105
	(0.305)	(0.306)
Indian	0.00793	0.00675
	(0.0887)	(0.0819)
White	0.0125	0.0124
	(0.111)	(0.111)
Rural Areas	0.0744	0.0690
	(0.262)	(0.253)
Tribal Authority Areas	0.544	0.528
	(0.498)	(0.499)
Urban Informal Areas	0.0585	0.0626
	(0.235)	(0.242)
Real Income	4,723	4,970
	(7,668)	(7,224)
Male child	0.492	0.496
	(0.500)	(0.500)
Passed previous year	0.914	0.778
	(0.280)	(0.416)
Mother Alive	0.855	0.821
	(0.353)	(0.384)
Father Alive	0.738	0.673
	(0.440)	(0.469)
Observations	2,649	2,668

Notes: Standard Deviations are in Parenthesis. Sample is limited to children aged 13 – 18 years in 2010.

Table 4.8: DID Results of the Impact of the Child Support Grant on Enrolment

(Data – General Household Survey 2012 and 2007.Sample: Children aged 13 – 18)

	Based on 2008 means-test Threshold			Based on 2012 Means-test Threshold		
Control group:	High & Low (1)	Low Income (2)	High Income (3)	High & Low (4)	Low Income (5)	High (6)
Program impact	10.50***	10.78***	11.06***	12.26***	12.54***	12.94***
	(3.08)	(3.19)	(3.10)	(4.30)	(4.37)	(4.26)
Treatment	-4.91	-3.70	-1.27	-6.68	-5.89	-4.33
	(3.01)	(3.07)	(3.07)	(4.26)	(4.30)	(4.23)
Dummy 2012	-2.00**	-2.16*	-3.76***	-1.99**	-2.12*	-3.48***
	(0.81)	(1.19)	(0.94)	(0.82)	(1.12)	(0.94)
Head's Age	9.26***	8.60***	7.01***	9.22***	8.58***	5.43**
	(1.98)	(2.22)	(2.69)	(1.99)	(2.16)	(2.71)
Head's Age^2	-0.73***	-0.66***	-0.59**	-0.73***	-0.66***	-0.44*
	(0.18)	(0.20)	(0.24)	(0.18)	(0.19)	(0.25)
Parent Education	4.69***	5.04***	2.27***	4.63***	4.93***	2.49***
	(0.61)	(0.89)	(0.74)	(0.60)	(0.84)	(0.68)
Household Size	-1.57	0.23	-5.28	-1.95	-0.19	-4.77
	(2.59)	(3.14)	(3.24)	(2.63)	(3.07)	(3.29)
Siblings	-1.44	-2.63	-4.02	-0.78	-2.31	-2.20
	(3.58)	(4.23)	(4.74)	(3.62)	(4.16)	(4.77)
Child's Age	-4.53***	-4.97***	-3.61***	-4.55***	-5.04***	-3.40***
	(0.18)	(0.23)	(0.22)	(0.18)	(0.22)	(0.24)
Dual income	1.32	1.61	-6.47	1.64	1.27	-6.92
	(8.83)	(13.24)	(9.46)	(8.82)	(12.37)	(9.41)
Father alive	2.42***	2.52**	2.17*	2.38***	2.53**	2.41*
	(0.88)	(0.98)	(1.18)	(0.89)	(0.99)	(1.25)
Father resident	0.08	-4.25	9.78	0.57	-1.05	11.54
	(7.43)	(9.01)	(9.23)	(7.51)	(8.86)	(9.43)
Mother resident	3.44***	4.38***	3.77**	3.45***	4.08***	3.21*
	(1.03)	(1.18)	(1.81)	(1.03)	(1.15)	(1.83)
Male child	0.98*	1.58**	0.46	0.92	1.34*	-0.22
	(0.57)	(0.72)	(0.67)	(0.58)	(0.70)	(0.69)
White	-3.75***	-10.96**	-5.51***	-3.74***	-10.18**	-4.87***
	(1.35)	(5.58)	(1.49)	(1.35)	(4.74)	(1.47)
Coloured	-10.45***	-12.71***	-6.83***	-10.57***	-12.34***	-6.98***
	(1.01)	(1.32)	(1.16)	(1.02)	(1.25)	(1.19)
Indian	-8.05***	-8.11*	-7.59***	-8.03***	-9.38**	-7.51***
	(2.54)	(4.68)	(2.65)	(2.53)	(4.69)	(2.65)
Log income	1.04***	-0.44	4.44***	1.05***	-0.06	3.77***
	(0.30)	(0.48)	(0.73)	(0.30)	(0.44)	(0.77)
_cons	120.20***	136.49***	88.76***	120.53***	135.88***	95.16***
	(6.05)	(7.59)	(9.46)	(6.07)	(7.33)	(9.60)
R^2	0.10	0.11	0.11	0.10	0.11	0.10
No. of Obs.	10,241	7,493	5,411	10,071	7,781	4,755

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable is Enrolment = 1 if the child is enrolled in school (scaled up by 100; to be interpreted as percentage points). Program impact = Treatment interacted with 2012 year dummy. Column (1) shows results using both the 'High income' control group and the 'Low income' control group using means-test thresholds for 2008. Column (2) shows results using the 'Low income' control group only; at 2008 means-test thresholds. 'High income' control group for columns (1) and (2) = Children from households whose income was greater than R 4 400; means-test ineligible and did not receive the Child Support Grant. Low income control group = Children from households whose income was less than R 2 200. Treatment group for columns (1), (2) and (3) is comprised of children from households whose income were between R 2 200 and R 4 400 who received the Child Support Grant. Column (4) shows Difference-in-Differences results using the 'High income' and 'Low income' control groups at means-test threshold of 2012. Column (5) shows DID results using 'Low income' control group at means-test threshold for 2012 and Column (6) shows results using the High Income control group at 2012 means-test threshold. The means-test threshold was R 2 200 for single caregivers and R 4 400 for double income caregivers in 2008 and R 2 800 for single caregivers and R 5 600 for double caregivers in 2012. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 4.9: DID Results of the Impact of Child Support Grant on the Enrolment of Secondary-School-Aged Girls

(Data – General Household Survey 2012 and 2007. Sample: Female Children aged 13 – 18 years)

	Based on 2008 means-test Threshold			Based on 2012 Means-test Threshold		
Control group:	High & Low	Low Income	High Income	High & Low	Low Income	High
	(1)	(2)	(3)	(4)	(5)	(6)
Program impact	12.63***	13.39***	12.97***	15.12**	15.84**	15.30**
	(4.39)	(4.51)	(4.43)	(6.60)	(6.69)	(6.54)
Treatment	-6.94	-6.58	-2.88	-9.19	-9.10	-6.91
	(4.24)	(4.30)	(4.34)	(6.52)	(6.59)	(6.47)
Dummy 2012	-2.27**	-2.44	-3.89***	-2.25**	-2.49	-3.13**
	(1.13)	(1.67)	(1.29)	(1.13)	(1.56)	(1.27)
Head's Age	10.30***	9.85***	3.68	10.23***	10.13***	0.99
	(2.65)	(3.01)	(3.27)	(2.69)	(2.97)	(3.07)
Head's Age^2	-0.84***	-0.78***	-0.33	-0.84***	-0.81***	-0.08
	(0.24)	(0.27)	(0.30)	(0.25)	(0.27)	(0.28)
Head's Education	4.79***	5.30***	1.87*	4.73***	5.10***	2.67***
	(0.84)	(1.22)	(1.05)	(0.84)	(1.17)	(1.00)
Household Size	-1.32	0.62	-6.02	-1.42	-0.33	-3.42
	(3.63)	(4.37)	(4.63)	(3.68)	(4.28)	(4.60)
Siblings	-5.23	-6.76	-5.80	-4.93	-6.08	-6.27
	(4.99)	(5.91)	(6.44)	(5.05)	(5.79)	(6.39)
Child's Age	-5.02***	-5.77***	-3.96***	-5.03***	-5.74***	-3.57***
	(0.26)	(0.33)	(0.32)	(0.26)	(0.32)	(0.33)
Dual income	-4.80	-10.88	-1.46	-5.49	-11.56	-4.83
	(12.35)	(19.13)	(12.52)	(12.31)	(17.76)	(12.32)
Father alive	2.49**	3.06**	1.99	2.37*	2.89**	1.69
	(1.23)	(1.39)	(1.68)	(1.25)	(1.39)	(1.73)
Father resident	-0.33	-7.92	6.48	0.94	-3.01	13.40
	(10.48)	(12.89)	(12.86)	(10.62)	(12.66)	(13.01)
Mother resident	3.08**	4.11**	2.81	3.05**	3.68**	2.15
	(1.38)	(1.60)	(2.19)	(1.38)	(1.56)	(2.27)
White	-4.01**	-14.43*	-5.76***	-3.95**	-9.38*	-4.95**
	(1.83)	(7.53)	(2.01)	(1.83)	(5.45)	(1.96)
Coloured	-8.12***	-9.65***	-5.85***	-8.12***	-9.22***	-5.99***
	(1.35)	(1.75)	(1.59)	(1.36)	(1.66)	(1.61)
Indian	-8.18**	-14.20**	-4.95	-8.17**	-16.77**	-4.90
	(3.34)	(6.56)	(3.05)	(3.34)	(6.52)	(3.03)
Log income	1.33***	-0.11	5.06***	1.34***	0.36	3.52***
	(0.42)	(0.68)	(1.05)	(0.42)	(0.62)	(1.11)
_cons	124.43***	144.65***	101.22***	124.72***	141.45***	114.01***
	(8.25)	(10.62)	(12.35)	(8.32)	(10.18)	(12.09)
R^2	0.11	0.12	0.12	0.11	0.12	0.11
No. of Obs.	5,222	3,823	2,778	5,113	3,939	2,431

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable is Enrolment = 1 if the child is enrolled in school (scaled up by 100; to be interpreted as percentage points). Program impact = Treatment interacted with 2012 year dummy. Column (1) shows results using both the 'High income' control group and the 'Low income' control group using 2008 means-test threshold. Column (2) shows results using the 'Low income' control group only; at means-test thresholds of 2008. 'High income' control group for columns (1) and (3) = Children from households whose income was greater than R 4 400; who were means-test ineligible and did not receive the Child Support Grant. Low income control group = Children from households whose income was less than R 2 200. Treatment group for columns (1), (2) and (3) is comprised of children from households whose incomes were between R 2 200 and R 4 400 who received the Child Support Grant. Column (4) shows DID results using the 'High income' and 'Low income' control groups at means-test threshold of 2012. Column (5) shows DID results using the 'Low income' control group only at means-test threshold for 2012. The means-test threshold was R 2 200 for single caregivers and R 4 400 for double income caregivers in 2008 and R 2 800 for single caregivers and R 5 600 for double caregivers in 2012. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 4.10: DID Results of the Impact of the Child Support Grant on the Enrolment of Secondary-School-Aged Boys

(Data – General Household Survey 2012 and 2007.Sample: Male Children aged 13 – 18 years)

	Based on 2008 means-test Threshold			Based on 2012 Means-test Threshold		
Control group:	High & Low	Low Income	High Income	High & Low	Low Income	High
	(1)	(2)	(3)	(4)	(5)	(6)
Program impact	9.16**	9.33**	9.65**	10.28*	10.43*	11.24**
	(4.34)	(4.52)	(4.38)	(5.63)	(5.75)	(5.59)
Treatment	-3.55	-1.75	-0.08	-5.03	-3.77	-2.48
	(4.26)	(4.40)	(4.40)	(5.58)	(5.68)	(5.59)
Dummy 2012	-1.74	-1.95	-3.66***	-1.73	-1.84	-3.87***
	(1.12)	(1.62)	(1.29)	(1.12)	(1.53)	(1.34)
Head's Age	8.05***	7.35**	10.18***	8.08***	7.05**	9.52**
	(2.66)	(2.94)	(3.93)	(2.65)	(2.84)	(4.00)
Head's Age^2	-0.61**	-0.54**	-0.83**	-0.61**	-0.51**	-0.78**
	(0.24)	(0.26)	(0.35)	(0.24)	(0.25)	(0.35)
Head's Education	4.53***	4.64***	2.57***	4.48***	4.65***	2.18***
	(0.81)	(1.18)	(0.93)	(0.80)	(1.11)	(0.84)
Household Size	-1.87	0.00	-4.34	-2.56	-0.31	-6.11
	(3.52)	(4.31)	(4.11)	(3.57)	(4.19)	(4.38)
Siblings	2.61	1.23	-1.57	3.61	1.55	2.54
	(4.78)	(5.67)	(6.17)	(4.85)	(5.59)	(6.31)
Child's Age	-4.04***	-4.16***	-3.23***	-4.06***	-4.37***	-3.22***
	(0.26)	(0.31)	(0.32)	(0.26)	(0.31)	(0.35)
Dual income	8.30	13.71	-11.60	9.51	12.82	-8.91
	(12.09)	(17.93)	(13.48)	(12.10)	(16.88)	(13.67)
Father alive	2.35*	1.94	2.34	2.39*	2.15	3.21*
	(1.23)	(1.37)	(1.74)	(1.26)	(1.38)	(1.83)
Father resident	0.32	-0.25	12.48	-0.14	1.00	8.71
	(10.18)	(12.26)	(12.71)	(10.26)	(12.02)	(13.22)
Mother resident	3.85***	4.62***	4.76*	3.89***	4.43***	4.24*
	(1.42)	(1.61)	(2.43)	(1.43)	(1.56)	(2.53)
White	-3.55*	-8.25	-5.02**	-3.60*	-11.14	-4.79**
	(1.97)	(7.95)	(2.13)	(1.97)	(7.61)	(2.14)
Coloured	-12.76***	-15.83***	-7.68***	-13.00***	-15.42***	-7.91***
	(1.48)	(1.96)	(1.66)	(1.49)	(1.84)	(1.73)
Indian	-8.11**	-0.28	-10.21***	-8.08**	-1.93	-10.08***
	(3.35)	(5.21)	(3.70)	(3.32)	(4.78)	(3.72)
Log income	0.79**	-0.73	3.85***	0.79**	-0.42	4.05***
	(0.40)	(0.63)	(0.89)	(0.40)	(0.59)	(1.00)
_cons	116.85***	129.94***	76.59***	117.25***	131.99***	76.75***
	(8.18)	(9.95)	(13.53)	(8.19)	(9.69)	(14.35)
R^2	0.10	0.10	0.10	0.10	0.10	0.10
No. of Obs.	5,019	3,670	2,633	4,958	3,842	2,324

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable is Enrolment = 1 if the child is enrolled in school (scaled up by 100; to be interpreted as percentage points). Program impact = Treatment interacted with 2012 year dummy. Column (1) shows results using both the 'High income' control group and the 'Low income' control group using means-test thresholds for 2008. Column (2) shows results using the 'Low income' control group only; at 2008 means-test threshold. 'High income' control group for columns (1) and (3) = Children from households whose income was greater than R 4 400; who were means-test ineligible and did not receive the Child Support Grant. Low income control group = Children from households whose income was less than R 2 200. Treatment group for columns (1), (2) and (3) is comprised of children from households whose incomes were between R 2 200 and R 4 400 who received the Child Support Grant. Column (4) shows DID results using the 'High income' and 'Low income' control groups at means-test threshold of 2012. Column (5) shows DID results using the 'Low income' control group only at means-test threshold for 2012. The means-test threshold was R 2 200 for single caregivers and R 4 400 for double income caregivers in 2008 and R 2 800 for single caregivers and R 5 600 for double caregivers in 2012. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 4.11: DID Results of the Impact of the Child Support Grant on the Enrolment of Secondary-School-Aged Children by Highest Grade Completed

(Data – General Household Survey 2012 and 2007. Using the 'High income' Control group)

	Based on 2008 Means-test Threshold			
	GRADE 8	GRADE 9	GRADE 10	GRADE 12
	(1)	(2)	(3)	(4)
Program impact	6.83**	1.77	5.39	61.57***
	(3.44)	(4.18)	(3.43)	(7.42)
Treatment	2.00	4.06	-3.26	-86.30***
	(3.05)	(3.86)	(3.06)	(4.40)
Dummy 2012	-0.35	2.11	3.94	-61.75***
	(1.75)	(2.01)	(2.45)	(6.37)
Head's Age	10.33*	4.21	8.53	3.27
	(5.47)	(4.87)	(7.24)	(11.15)
Head's Age^2	-0.95*	-0.46	-0.72	-0.66
	(0.50)	(0.44)	(0.66)	(1.13)
Head's Education	0.34	1.00	2.53**	1.34
	(1.07)	(1.33)	(1.26)	(3.78)
Household Size	-3.54	-7.70	-1.04	9.70
	(5.84)	(6.25)	(6.56)	(13.52)
Siblings	-4.30	0.82	0.24	-18.63
	(8.32)	(9.05)	(10.20)	(17.40)
Child's Age	-5.45***	-4.96***	-5.16***	-1.69
	(0.78)	(0.75)	(0.96)	(1.25)
Dual income	-18.36	-5.72	-18.29	-25.46
	(16.40)	(19.15)	(23.08)	(26.57)
Father alive	4.80**	0.11	-2.72	-6.93
	(2.38)	(2.25)	(2.42)	(6.40)
Father resident	5.89	-9.29	42.08*	-3.05
	(15.32)	(19.06)	(22.12)	(51.20)
Mother resident	0.33	4.86	0.09	8.85*
	(2.90)	(3.21)	(2.65)	(5.23)
Male child	0.71	4.38***	1.00	0.18
	(1.26)	(1.47)	(1.52)	(3.12)
White	-4.23**	-1.07	-8.92**	-0.34
	(1.85)	(1.41)	(4.21)	(5.53)
Coloured	-8.39***	-9.98***	-8.41***	1.15
	(2.21)	(2.78)	(2.75)	(3.44)
Indian	-4.42	-5.50	-13.06**	7.91
	(4.50)	(4.47)	(5.22)	(9.25)
Log income	3.02***	2.66*	-0.48	4.56**
	(1.12)	(1.40)	(1.44)	(2.02)
_cons	122.18***	137.00***	157.87***	81.87**
	(17.73)	(19.73)	(24.92)	(35.52)
R^2	0.20	0.13	0.09	0.51

No of Obs.	1,001	976	869	315

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable is Enrolment = 1 if the child is enrolled in school (scaled up by 100; to be interpreted as percentage points). DID results in this table show estimations using the 'High income' control group based on 2008 means-test threshold. Program Impact = Treatment interacted with 2012 year dummy. 'High income' control group = Children from households whose income was greater than R 4 400. Low income control group = Children from households whose income was less than R 2 200. Treatment group is comprised of children from households whose income were between R 2 200 and R 4 400 who received the Child Support Grant. The means-test threshold was R 2 200 for single caregivers and R 4 400 for double income caregivers in 2008. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 4.12: DID Results of the Impact of the Child Support Grant on the Enrolment of Secondary-School-Aged Children (using six yearly GHS Data from 2007 to 2012)

(Data – General Household Survey 2007 to 2012: Full Sample aged 13 – 18 years)

	Based on 2008 means-test Threshold			Based on 2012 Means-test Threshold		
Control group:	High & Low	Low Income	High Income	High & Low	Low Income	High
	(1)	(2)	(3)	(4)	(5)	(6)
Program Impact	8.10***	7.39**	9.30***	9.60**	9.01**	11.24***
	(2.92)	(2.96)	(2.94)	(4.14)	(4.19)	(4.13)
Treatment	-5.76**	-4.68	-4.76	-7.56*	-6.85	-7.68*
	(2.91)	(2.95)	(2.94)	(4.13)	(4.18)	(4.13)
Dummy 2008	0.33	0.21	0.22	0.34	0.24	0.51
	(0.56)	(0.73)	(0.81)	(0.60)	(0.70)	(0.80)
Dummy 2009	-0.15	1.42**	-2.58***	-0.16	0.99	-3.40***
	(0.50)	(0.67)	(0.76)	(0.55)	(0.65)	(0.77)
Dummy 2010	-0.87*	0.33	-2.26***	-0.80	0.25	-2.90***
	(0.53)	(0.71)	(0.76)	(0.57)	(0.68)	(0.77)
Dummy 2011	-0.25	0.25	-1.87**	-0.31	0.21	-1.92**
	(0.54)	(0.75)	(0.77)	(0.60)	(0.73)	(0.77)
Dummy 2012	-0.29	-0.13	-1.71**	-0.26	-0.30	-1.62**
	(0.64)	(0.89)	(0.81)	(0.69)	(0.87)	(0.81)
Head's Age	5.34***	5.26***	4.69***	5.37***	5.61***	4.87***
	(0.72)	(0.91)	(1.14)	(0.85)	(0.91)	(1.23)
Head's Age^2	-0.37***	-0.35***	-0.32***	-0.37***	-0.38***	-0.34***
	(0.06)	(0.08)	(0.10)	(0.08)	(0.08)	(0.11)
Head's Education	3.69***	4.38***	2.77***	3.69***	4.43***	2.69***
	(0.28)	(0.46)	(0.36)	(0.32)	(0.45)	(0.36)
Household Size	-3.48***	-1.24	-6.51***	-3.55**	-1.43	-6.49***
	(1.16)	(1.60)	(1.67)	(1.39)	(1.58)	(1.80)
Siblings	-0.09	-2.96	3.10	0.08	-2.63	4.23
	(1.61)	(2.26)	(2.38)	(1.98)	(2.25)	(2.58)
Child's Age	-4.92***	-5.16***	-4.45***	-4.98***	-5.26***	-4.36***
	(0.09)	(0.12)	(0.13)	(0.10)	(0.12)	(0.13)
Dual income	4.66	1.24	1.99	4.64	2.90	1.39
	(4.82)	(8.32)	(5.59)	(5.24)	(7.79)	(5.59)
Father alive	1.42***	1.99***	-0.01	1.41***	1.84***	-0.47
	(0.39)	(0.48)	(0.55)	(0.44)	(0.48)	(0.60)
Father resident	-0.96	-7.37	8.47	-0.56	-5.65	12.64**
	(3.82)	(5.12)	(5.19)	(4.35)	(5.06)	(5.46)
Mother resident	1.42***	1.75***	0.72	1.46***	1.77***	0.66
	(0.37)	(0.49)	(0.54)	(0.43)	(0.48)	(0.59)
Male child	1.29***	1.82***	0.86**	1.31***	1.66***	0.46
	(0.29)	(0.39)	(0.38)	(0.33)	(0.38)	(0.40)
White	-4.54***	-9.29***	-5.02***	-4.58***	-9.67***	-4.70***
	(0.79)	(3.28)	(0.95)	(0.90)	(2.74)	(0.96)
Coloured	-11.55***	-13.25***	-9.24***	-11.76***	-13.45***	-9.06***

	(0.57)	(0.87)	(0.77)	(0.69)	(0.85)	(0.80)
Indian	-8.35***	-7.83***	-7.59***	-8.44***	-9.39***	-7.64***
	(1.20)	(2.26)	(1.41)	(1.32)	(2.16)	(1.43)
Log income	0.97***	0.15	2.76***	0.97***	0.38	2.34***
	(0.16)	(0.27)	(0.36)	(0.17)	(0.25)	(0.39)
_cons	140.60***	147.94***	123.41***	141.29***	147.17***	125.79***
	(2.54)	(3.55)	(4.49)	(2.87)	(3.42)	(4.88)
R^2	0.10	0.10	0.11	0.10	0.10	0.11
No. of Obs.	40,923	29,879	23,301	39,964	31,156	19,403

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable is Enrolment = 1 if the child is enrolled in school (scaled up by 100; to be interpreted as percentage points). Program Impact = Treatment interacted with 2012 year dummy. Column 1 shows results using both the 'High income' control group and the 'Low income' control group using means-test thresholds for 2008. Column 2 shows results using the 'Low income' control group only; and column 3 shows results for High Income Control group only. 'High income' control group for columns (1) and (3) = Children from households whose income was greater than R 4 400; who were means-test ineligible and did not receive the Child Support Grant. Low income control group for column (2) = Children from households whose income was less than R 2 200. Treatment group for columns (1), (2) and (3) is comprised of children from households whose incomes were between R 2 200 and R 4 400 who received the Child Support Grant. Column (4) shows Difference-in-Differences results using both the 'High income' and 'Low income' control groups at means-test threshold of 2012. Column (5) shows DID results using the 'Low income' control group only at means-test threshold for 2012; and column (6) shows results using the High income Control group only at the 2012 means-test threshold. The means-test threshold was R 2 200 for single caregivers and R 4 400 for double income caregivers in 2008 and R 2 800 for single caregivers and R 5 600 for double caregivers in 2012. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 4.13: DID Results of the Impact of the Child Support Grant on the Enrolment of Secondary-School-Aged Girls (using six yearly GHS Data from 2007 to 2012)

(Data – General Household Survey 2007 to 2012.Sample: Female Children aged 13 – 18)

	Based on 2008 means-test Threshold			Based on 2012 Means-test Threshold		
Control group:	High & Low	Low Income	High Income	High & Low	Low Income	High
	(1)	(2)	(3)	(4)	(5)	(6)
Program Impact	9.99**	9.53**	11.09***	11.99*	11.54*	13.38**
	(4.17)	(4.19)	(4.27)	(6.37)	(6.39)	(6.47)
Treatment	-7.84*	-6.99*	-6.40	-10.21	-9.78	-10.06
	(4.15)	(4.17)	(4.27)	(6.36)	(6.38)	(6.46)
Dummy 2008	0.27	0.47	-0.22	0.27	0.34	-0.04
	(0.82)	(1.00)	(1.07)	(0.82)	(0.96)	(1.06)
Dummy 2009	-0.48	1.25	-3.25***	-0.48	0.66	-4.01***
	(0.75)	(0.92)	(0.99)	(0.75)	(0.89)	(1.01)
Dummy 2010	-1.18	0.07	-3.01***	-1.12	-0.14	-3.68***
	(0.77)	(0.96)	(0.99)	(0.78)	(0.93)	(1.02)
Dummy 2011	-0.46	0.14	-2.28**	-0.49	0.23	-2.24**
	(0.80)	(1.03)	(0.99)	(0.81)	(0.99)	(1.01)
Dummy 2012	-0.32	-0.14	-1.98*	-0.21	-0.27	-1.57
	(0.93)	(1.24)	(1.08)	(0.95)	(1.21)	(1.08)
Head's Age	4.62***	4.91***	3.20**	4.70***	5.12***	3.58**
	(1.13)	(1.26)	(1.49)	(1.16)	(1.25)	(1.59)
Head's Age^2	-0.31***	-0.34***	-0.19	-0.32***	-0.35***	-0.23
	(0.10)	(0.11)	(0.13)	(0.10)	(0.11)	(0.14)
Parent Education	3.50***	4.19***	2.65***	3.50***	4.13***	2.58***
	(0.44)	(0.64)	(0.50)	(0.45)	(0.62)	(0.50)
Household Size	-2.46	-0.05	-6.28***	-2.42	-0.64	-6.27***
	(1.85)	(2.23)	(2.21)	(1.89)	(2.21)	(2.33)
Siblings	-3.51	-7.44**	1.87	-3.55	-7.05**	3.75
	(2.60)	(3.09)	(3.08)	(2.66)	(3.06)	(3.26)
Child's Age	-5.51***	-5.90***	-4.90***	-5.58***	-5.97***	-4.70***
	(0.14)	(0.18)	(0.18)	(0.15)	(0.17)	(0.19)
Dual income	3.77	-0.15	3.41	4.00	-0.53	2.61
	(7.27)	(11.68)	(7.70)	(7.30)	(10.92)	(7.73)
Father alive	0.99*	1.71**	-0.34	0.89	1.45**	-0.94
	(0.60)	(0.67)	(0.76)	(0.61)	(0.67)	(0.81)
Father resident	-3.59	-11.63	5.78	-3.28	-9.00	8.84
	(5.98)	(7.21)	(7.29)	(6.09)	(7.12)	(7.62)
Mother resident	1.14*	1.56**	-0.11	1.19**	1.47**	0.04
	(0.59)	(0.69)	(0.75)	(0.60)	(0.68)	(0.81)
White	-2.94***	-3.93	-3.88***	-2.96***	-5.05	-3.33***
	(1.09)	(3.90)	(1.16)	(1.09)	(3.14)	(1.16)
Coloured	-10.06***	-11.40***	-8.58***	-10.20***	-11.53***	-8.55***
	(0.89)	(1.14)	(1.03)	(0.90)	(1.11)	(1.07)
Indian	-7.21***	-9.53***	-5.12***	-7.31***	-10.67***	-5.24***

	(1.70)	(3.03)	(1.73)	(1.71)	(2.90)	(1.79)
Log income	1.20***	0.28	3.27***	1.19***	0.68**	2.51***
	(0.24)	(0.38)	(0.51)	(0.24)	(0.35)	(0.57)
_cons	151.45***	161.25***	131.85***	152.33***	159.77***	134.79***
	(3.95)	(4.98)	(6.13)	(4.00)	(4.80)	(6.68)
R^2	0.11	0.11	0.12	0.11	0.11	0.11
No. of Obs.	20,403	14,943	11,663	19,909	15,549	9,716

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable is Enrolment = 1 if the child is enrolled in school (scaled up by 100; to be interpreted as percentage points). Program Impact = Treatment interacted with 2012 year dummy. Column 1 shows results using both the 'High income' control group and the 'Low income' control group using means-test thresholds for 2008. Column 2 shows results using the 'Low income' control group only; and column 3 shows results for High Income Control group only. 'High income' control group for columns (1) and (3) = Children from households whose income was greater than R 4 400; who were means-test ineligible and did not receive the Child Support Grant. Low income control group for column (2) = Children from households whose income was less than R 2 200. Treatment group for columns (1), (2) and (3) is comprised of children from households whose incomes were between R 2 200 and R 4 400 who received the Child Support Grant. Column (4) shows Difference-in-Differences results using both the 'High income' and 'Low income' control groups at means-test threshold of 2012. Column (5) shows DID results using the 'Low income' control group only at means-test threshold for 2012; and column (6) shows results using the High income Control group only at the 2012 means-test threshold. The means-test threshold was R 2 200 for single caregivers and R 4 400 for double income caregivers in 2008 and R 2 800 for single caregivers and R 5 600 for double caregivers in 2012. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 4.14: DID Results of the Impact of the Child Support Grant on the Enrolment of Secondary-School-Aged Boys (using six yearly GHS Data from 2007 to 2012)

(Data – General Household Survey 2007 to 2012.Sample: Male Children aged 13 – 18 years)

	Based on 2008 means-test Threshold			Based on 2012 Means-test Threshold		
Control group:	High & Low	Low Income	High Income	High & Low	Low Income	High
	(1)	(2)	(3)	(4)	(5)	(6)
Program Impact	6.62	5.85	7.74*	7.78	7.25	9.47*
	(4.08)	(4.17)	(4.07)	(5.38)	(5.50)	(5.31)
Treatment	-4.19	-3.06	-3.43	-5.59	-4.80	-5.74
	(4.07)	(4.17)	(4.09)	(5.37)	(5.50)	(5.32)
Dummy 2008	0.39	-0.13	0.65	0.39	0.11	1.03
	(0.83)	(1.02)	(1.13)	(0.83)	(0.97)	(1.12)
Dummy 2009	0.13	1.57*	-2.02*	0.13	1.33	-2.87***
	(0.75)	(0.92)	(1.05)	(0.76)	(0.89)	(1.09)
Dummy 2010	-0.54	0.59	-1.55	-0.46	0.67	-2.17**
	(0.78)	(0.96)	(1.04)	(0.79)	(0.93)	(1.06)
Dummy 2011	-0.04	0.34	-1.48	-0.14	0.16	-1.64
	(0.82)	(1.03)	(1.06)	(0.83)	(1.00)	(1.07)
Dummy 2012	-0.20	-0.09	-1.43	-0.27	-0.34	-1.71
	(0.92)	(1.21)	(1.12)	(0.94)	(1.19)	(1.15)
Head's Age	5.97***	5.57***	6.08***	5.92***	6.02***	6.01***
	(1.16)	(1.24)	(1.66)	(1.17)	(1.26)	(1.81)
Head's Age^2	-0.42***	-0.36***	-0.44***	-0.41***	-0.40***	-0.43***
	(0.10)	(0.11)	(0.14)	(0.10)	(0.11)	(0.16)
Head's Education	3.83***	4.52***	2.84***	3.83***	4.66***	2.73***
	(0.43)	(0.62)	(0.48)	(0.43)	(0.59)	(0.48)
Household Size	-4.64**	-2.65	-6.78***	-4.82**	-2.48	-6.67***
	(1.89)	(2.14)	(2.37)	(1.91)	(2.09)	(2.58)
Siblings	3.73	1.91	4.68	4.17	2.28	4.87
	(2.61)	(2.99)	(3.27)	(2.67)	(2.98)	(3.58)
Child's Age	-4.34***	-4.43***	-3.98***	-4.38***	-4.54***	-4.01***
	(0.14)	(0.17)	(0.17)	(0.14)	(0.17)	(0.19)
Dual income	5.69	2.18	0.72	5.42	5.94	0.13
	(7.13)	(11.46)	(7.63)	(7.15)	(10.69)	(7.72)
Father alive	1.83***	2.21***	0.31	1.91***	2.18***	-0.03
	(0.60)	(0.66)	(0.77)	(0.61)	(0.66)	(0.86)
Father resident	1.85	-2.88	11.33	2.21	-2.32	16.38**
	(5.85)	(7.08)	(7.04)	(5.97)	(6.94)	(7.50)
Mother resident	1.71***	1.93***	1.57**	1.74***	2.08***	1.30
	(0.57)	(0.66)	(0.73)	(0.58)	(0.66)	(0.80)
White	-6.08***	-14.07***	-6.12***	-6.13***	-13.70***	-5.99***
	(1.31)	(5.13)	(1.37)	(1.31)	(4.13)	(1.40)
Coloured	-13.00***	-15.10***	-9.82***	-13.28***	-15.34***	-9.46***
	(0.97)	(1.24)	(1.08)	(0.99)	(1.19)	(1.13)
Indian	-9.57***	-6.07*	-10.11***	-9.61***	-8.33***	-10.03***

	(1.91)	(3.39)	(2.01)	(1.90)	(3.15)	(2.02)
Log income	0.76***	0.04	2.27***	0.76***	0.11	2.20***
	(0.23)	(0.37)	(0.48)	(0.24)	(0.34)	(0.53)
_cons	131.22***	136.58***	115.86***	131.81***	136.34***	117.57***
	(3.87)	(4.75)	(6.28)	(3.91)	(4.60)	(6.87)
R^2	0.09	0.09	0.10	0.09	0.09	0.10
No. of Obs.	20,520	14,936	11,638	20,055	15,607	9,687

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable is Enrolment = 1 if the child is enrolled in school (scaled up by 100; to be interpreted as percentage points). Program Impact = Treatment interacted with 2012 year dummy. Column 1 shows results using both the 'High income' control group and the 'Low income' control group using means-test thresholds for 2008. Column 2 shows results using the 'Low income' control group only; and column 3 shows results for High Income Control group only. 'High income' control group for columns (1) and (3) = Children from households whose income was greater than R 4 400; who were means-test ineligible and did not receive the Child Support Grant. Low income control group for column (2) = Children from households whose income was less than R 2 200. Treatment group for columns (1), (2) and (3) is comprised of children from households whose incomes were between R 2 200 and R 4 400 and received the Child Support Grant. Column (4) shows Difference-in-Differences results using both the 'High income' and 'Low income' control groups at means-test threshold of 2012. Column (5) shows DID results using the 'Low income' control group only at means-test threshold for 2012; and column (6) shows results using the High income Control group only at the 2012 means-test threshold. The means-test threshold was R 2 200 for single caregivers and R 4 400 for double income caregivers in 2008 and R 2 800 for single caregivers and R 5 600 for double income caregivers in 2012. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 4.15: DID Results of the Impact of the Child Support Grant on the Enrolment of Secondary-School-Aged Children by Highest Grade Completed (using six yearly GHS Data, 2007 to 2012)

(Data: General Household Survey 2007 to 2012 – Using the 'High income' control group)

	Based on 2008 Means-test Threshold			
	GRADE 8	GRADE 9	GRADE 10	GRADE 12
	(1)	(2)	(3)	(4)
Program Impact	2.80	3.07	5.28**	72.03***
	(3.89)	(3.05)	(2.18)	(7.55)
Treatment	0.12	1.86	-0.76	-87.81***
	(3.84)	(2.96)	(1.87)	(3.39)
Dummy 2008	0.21	0.89	1.43	-1.98
	(1.36)	(1.57)	(1.40)	(2.11)
Dummy 2009	2.32*	2.95*	0.82	-58.71***
	(1.32)	(1.52)	(1.66)	(4.52)
Dummy 2010	3.26**	4.03***	2.60	-60.58***
	(1.32)	(1.48)	(1.63)	(3.63)
Dummy 2011	2.43*	3.41**	2.27	-67.39***
	(1.35)	(1.60)	(1.67)	(4.32)
Dummy 2012	1.46	2.63	2.09	-59.04***
	(1.44)	(1.69)	(1.90)	(6.25)
Head's Age	3.22*	5.29**	6.82*	-2.74
	(1.84)	(2.55)	(3.65)	(7.72)
Head's Age^2	-0.25	-0.40*	-0.51	0.35
	(0.16)	(0.22)	(0.33)	(0.70)
Head's Education	1.18**	1.87***	2.82***	9.82***
	(0.58)	(0.71)	(0.71)	(2.53)
Household Size	-7.65***	-6.97**	1.02	-3.18
	(2.85)	(3.25)	(3.26)	(9.13)
Siblings	5.41	3.31	-4.66	-8.18
	(4.05)	(4.64)	(5.04)	(12.70)
Child's Age	-5.69***	-5.12***	-4.43***	-1.18
	(0.41)	(0.42)	(0.50)	(1.34)
Dual income	9.07	5.19	-16.95	-5.25
	(9.67)	(10.96)	(12.74)	(28.11)
Father alive	-0.60	-1.29	-0.41	1.55
	(1.02)	(1.10)	(1.27)	(3.55)
Father resident	1.75	-5.83	22.39*	18.60
	(9.15)	(10.47)	(11.45)	(30.61)
Mother resident	1.50	1.10	1.78	-0.28
	(0.97)	(1.09)	(1.23)	(3.22)
Male child	1.68**	2.71***	1.15	-0.26
	(0.72)	(0.80)	(0.85)	(2.37)
White	-4.49**	-4.86***	-8.60***	-4.63
	(1.92)	(1.37)	(2.42)	(4.47)
Coloured	-12.22***	-13.03***	-10.30***	-2.43

	(1.59)	(1.71)	(1.73)	(3.25)
Indian	-5.38***	-8.81***	-7.51***	-1.42
	(1.88)	(2.70)	(2.83)	(4.95)
Log income	0.97	2.49***	1.08	4.88***
	(0.66)	(0.66)	(0.78)	(1.79)
_cons	163.01***	137.46***	133.60***	68.56**
	(9.72)	(10.40)	(12.12)	(33.75)
R^2	0.15	0.11	0.07	0.46
No. of Obs.	4,224	4,007	3,242	1,065

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent variable = 1 if the child is enrolled in school (scaled up by 100; to be interpreted as percentage points). DID results in this table show estimations using the 'High income' control group based on 2008 means-test threshold. 'High income' control group = Children from households whose income was greater than R 4 400 and did not receive the Child Support Grant. Treatment group is comprised of children from households whose income were between R 2 200 and R 4 400 and received the Child Support Grant. ***Significant 1 percent **Significant at the 5 percent level * Significant at the 10 percent level.

Table 4.16: DID Results of the Impact of the Child Support Grant on the Enrolment of Secondary-School-Aged Children by Highest Grade Completed (using six yearly GHS Data, 2007 to 2012)

(Data: General Household Survey 2007 to 2012 – Using the 'Low income' control group)

	Based on 2008 Means-test Threshold			
	GRADE 8 (1)	GRADE 9 (2)	GRADE 10 (3)	GRADE 12 (4)
Program Impact	1.45	-1.05	7.82***	71.94***
	(4.49)	(3.84)	(2.22)	(7.81)
Treatment	1.24	2.91	-3.66*	-86.18***
	(4.41)	(3.74)	(1.96)	(3.34)
Dummy 2008	-0.66	2.33	-0.39	-0.79
	(1.50)	(1.45)	(1.37)	(2.50)
Dummy 2009	5.85***	7.65***	1.85	-61.23***
	(1.30)	(1.42)	(1.51)	(4.67)
Dummy 2010	4.38***	8.72***	2.88*	-64.80***
	(1.39)	(1.47)	(1.51)	(3.66)
Dummy 2011	2.65*	7.98***	2.10	-65.80***
	(1.53)	(1.61)	(1.62)	(4.50)
Dummy 2012	3.25*	7.09***	2.04	-68.96***
	(1.78)	(1.88)	(2.15)	(6.14)
Head's Age	5.94***	4.11**	-0.51	0.87
	(1.65)	(1.77)	(1.98)	(5.70)
Head's Age^2	-0.46***	-0.26*	0.12	-0.02
	(0.14)	(0.16)	(0.18)	(0.51)
Head's Education	2.39***	2.19**	1.12	6.78***
	(0.76)	(0.95)	(1.00)	(2.55)
Household Size	1.38	-2.94	2.66	-13.71
	(3.00)	(3.00)	(3.31)	(8.79)
Siblings	-4.05	2.65	-7.75	11.09
	(4.03)	(4.29)	(4.79)	(12.31)
Child's Age	-6.38***	-6.37***	-4.97***	-3.54***
	(0.35)	(0.37)	(0.46)	(1.37)
Dual income	-12.29	1.04	-18.51	31.88
	(16.53)	(18.17)	(19.19)	(45.55)
Father alive	1.33	0.69	2.29**	4.98*
	(0.90)	(0.92)	(1.09)	(2.90)
Father resident	-6.85	0.23	0.54	-8.10
	(9.65)	(9.79)	(11.33)	(28.00)
Mother resident	0.57	1.54*	2.51**	0.51
	(0.89)	(0.92)	(1.10)	(2.79)
Male child	3.62***	4.12***	4.40***	3.66*
	(0.75)	(0.76)	(0.86)	(2.22)
White	-18.24*	-5.85	-25.35***	-1.72
	(9.71)	(5.70)	(9.30)	(11.26)

Coloured	-15.91***	-16.85***	-15.03***	-2.88
	(1.74)	(1.80)	(2.05)	(3.10)
Indian	-6.68**	-5.91*	-4.56	2.79
	(2.92)	(3.43)	(3.24)	(7.39)
Log income	-0.09	0.15	0.55	-0.55
	(0.51)	(0.53)	(0.56)	(1.24)
_cons	168.49***	171.49***	165.45***	144.90***
	(7.35)	(8.27)	(9.70)	(28.69)
R^2	0.14	0.11	0.07	0.47
No. of Observations	5,422	5,617	4,133	1,118

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable = 1 if a child is enrolled in school (scaled up by 100; to be interpreted as percentage points). Program Impact = Treatment interacted with 2012 year dummy. DID results in this table show estimations using the 'Low income' control group on means-test thresholds of 2008. Low income control group = Children from households whose income was less than R 2 200 and did not receive the Child Support Grant. Treatment group is comprised of children from households whose incomes were between R 2 200 and R 4 400 and received the Child Support Grant. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 4.17: DID Results of the Impact of the Child Support Grant on the Enrolment of Secondary-School-Aged Children (using 2007 and 2011 GHS Data)

(Data – General Household Survey 2011 and 2007.Sample: Children aged 13 – 18 years)

	Based on 2008 means-test Threshold			Based on 2011 Means-test Threshold		
Control group:	High & Low	Low Income	High Income	High & Low	Low Income	High
	(1)	(2)	(3)	(4)	(5)	(6)
Program Impact	8.83***	8.11***	9.51***	10.00**	9.34**	10.76**
	(2.98)	(3.03)	(3.01)	(4.20)	(4.25)	(4.19)
Treatment	-5.72*	-4.08	-3.68	-7.50*	-6.16	-6.48
	(2.93)	(2.99)	(3.00)	(4.16)	(4.22)	(4.18)
Dummy 2012	-0.43	0.42	-2.01**	-0.41	0.29	-1.88**
	(0.66)	(0.88)	(0.83)	(0.66)	(0.84)	(0.85)
Head's Age	4.64***	3.89***	4.43**	4.66***	4.31***	4.01**
	(1.27)	(1.42)	(1.74)	(1.30)	(1.41)	(1.84)
Head's Age^2	-0.28**	-0.20	-0.25*	-0.27**	-0.23*	-0.21
	(0.11)	(0.12)	(0.15)	(0.11)	(0.12)	(0.16)
Head's Education	4.37***	5.22***	2.46***	4.39***	5.38***	2.05***
	(0.50)	(0.70)	(0.61)	(0.51)	(0.69)	(0.63)
Household Size	-2.09	-0.72	-5.98**	-2.07	-0.99	-6.54**
	(2.13)	(2.57)	(2.68)	(2.16)	(2.54)	(2.82)
Siblings	-3.18	-4.79	-1.52	-3.14	-4.91	0.33
	(3.10)	(3.62)	(4.10)	(3.17)	(3.62)	(4.36)
Child's Age	-4.80***	-5.17***	-4.17***	-4.84***	-5.21***	-4.09***
	(0.16)	(0.19)	(0.21)	(0.16)	(0.19)	(0.22)
Dual income	12.21	5.83	12.05	12.14	7.71	8.89
	(8.30)	(12.90)	(8.72)	(8.33)	(12.36)	(8.89)
Father alive	2.22***	2.91***	1.20	2.11***	2.58***	0.48
	(0.69)	(0.78)	(0.91)	(0.70)	(0.78)	(0.95)
Father resident	-1.81	-6.16	4.41	-0.49	-2.22	7.33
	(6.69)	(8.11)	(8.35)	(6.82)	(8.10)	(8.76)
Mother resident	1.31**	1.73**	0.79	1.36**	1.55**	1.30
	(0.64)	(0.75)	(0.85)	(0.65)	(0.75)	(0.91)
Male child	1.11**	1.71***	0.32	1.07**	1.33**	0.06
	(0.50)	(0.61)	(0.60)	(0.51)	(0.61)	(0.62)
White	-6.95***	-11.60**	-8.04***	-7.03***	-10.92***	-7.53***
	(1.46)	(4.71)	(1.56)	(1.46)	(4.09)	(1.56)
Coloured	-11.40***	-13.67***	-9.01***	-11.58***	-13.51***	-9.15***
	(0.96)	(1.24)	(1.18)	(0.97)	(1.21)	(1.23)
Indian	-8.02***	-4.32	-8.56***	-8.17***	-6.55*	-8.46***
	(2.22)	(3.33)	(2.48)	(2.24)	(3.44)	(2.50)
Log income	0.99***	-0.52	3.85***	0.99***	-0.15	3.62***
	(0.26)	(0.42)	(0.62)	(0.26)	(0.39)	(0.68)
_cons	138.61***	154.50***	109.88***	139.19***	152.10***	112.45***
	(4.41)	(5.61)	(7.11)	(4.46)	(5.45)	(7.66)
R^2	0.10	0.10	0.11	0.10	0.10	0.11

No. of Obs.	14,092	10,500	7,607	13,802	10,701	6,637

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable is Enrolment = 1 if the child is enrolled in school (scaled up by 100; to be interpreted as percentage points). Program Impact = Treatment interacted with 2011 year dummy. Column (1) shows results using both the 'High income' control group and the 'Low income' control group using means-test thresholds of 2008. Column (2) shows results using the 'Low income' control group only; at means-test thresholds of 2008. 'High income' control group for columns (1) and (2) = Children from households whose income was greater than R 4 400; who were means-test ineligible and did receive the Child Support Grant. Low income control group = Children from households whose income was less than R 2 200. Treatment group for columns (1), (2) and (3) is comprised of children from households whose income were between R 2 200 and R 4 400 who received the Child Support Grant. Column (4) shows Difference-in-Differences results using the 'High income' and 'Low income' control groups at means-test threshold of 2011. Column (5) shows DID results using 'Low income' control group at means-test threshold for 2011 and Column (6) shows results using the High Income control group at 2012 means-test threshold. The means-test threshold was R 2 200 for single caregivers and R 4 400 for double income caregivers in 2008 and R 2 600 for single caregivers and R 5 200 for double caregivers in 2011. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 4.18: DID Results of the Impact of the Child Support Grant on the Enrolment of Secondary-School-Aged Girls (using 2007 and 2011 GHS Data)

(Data – General Household Survey 2011 and 2007.Sample: Female Children aged 13 – 18 years)

	Based on 2008 means-test Threshold			Based on 2011 Means-test Threshold		
Control group:	High & Low (1)	Low Income (2)	High Income (3)	High & Low (4)	Low Income (5)	High (6)
Program Impact	10.92***	10.47**	11.38***	12.08**	11.49*	13.10**
	(4.22)	(4.31)	(4.32)	(5.87)	(5.98)	(5.92)
Treatment	-7.45*	-6.28	-5.53	-8.99	-8.21	-8.51
	(4.13)	(4.23)	(4.28)	(5.82)	(5.94)	(5.87)
Dummy 2012	-0.55	0.32	-2.13**	-0.53	0.34	-2.53**
	(0.88)	(1.19)	(1.08)	(0.89)	(1.13)	(1.10)
Head's Age	5.14***	4.71**	2.50	5.35***	5.48***	2.54
	(1.73)	(1.94)	(2.16)	(1.76)	(1.93)	(2.34)
Head's Age^2	-0.33**	-0.28	-0.10	-0.34**	-0.35**	-0.10
	(0.15)	(0.17)	(0.19)	(0.16)	(0.17)	(0.20)
Head's Education	4.30***	5.56***	1.93**	4.28***	5.62***	1.54*
	(0.67)	(0.92)	(0.81)	(0.68)	(0.90)	(0.85)
Household Size	-1.51	0.92	-8.07**	-1.46	0.51	-8.84**
	(2.93)	(3.58)	(3.73)	(2.98)	(3.52)	(3.86)
Siblings	-6.74	-10.56**	-1.09	-6.93	-10.68**	1.49
	(4.22)	(4.96)	(5.40)	(4.30)	(4.91)	(5.64)
Child's Age	-5.29***	-5.83***	-4.53***	-5.34***	-5.82***	-4.35***
	(0.23)	(0.28)	(0.29)	(0.23)	(0.27)	(0.30)
Dual income	4.33	-11.43	16.24	3.97	-9.20	11.38
	(11.67)	(18.84)	(11.68)	(11.75)	(17.91)	(11.84)
Father alive	1.61*	2.53**	1.18	1.42	2.07*	-0.39
	(0.97)	(1.11)	(1.27)	(0.99)	(1.11)	(1.31)
Father resident	-3.95	-5.52	-0.62	-2.57	-0.17	4.77
	(9.49)	(11.58)	(11.79)	(9.68)	(11.49)	(12.47)
Mother resident	1.90**	2.31**	0.89	1.98**	2.08**	1.35
	(0.89)	(1.05)	(1.16)	(0.91)	(1.05)	(1.24)
White	-4.66***	-7.68	-6.11***	-4.74***	-6.99	-5.23***
	(1.80)	(6.02)	(1.97)	(1.80)	(4.71)	(1.93)
Coloured	-8.00***	-10.41***	-6.22***	-8.15***	-10.21***	-6.43***
	(1.27)	(1.65)	(1.57)	(1.28)	(1.59)	(1.63)
Indian	-8.79***	-5.70	-7.73**	-9.04***	-7.98*	-8.15**
	(3.03)	(4.43)	(3.26)	(3.08)	(4.45)	(3.35)
Log income	1.21***	-0.22	3.69***	1.21***	0.32	3.20***
	(0.36)	(0.59)	(0.88)	(0.36)	(0.54)	(0.97)
_cons	144.20***	161.37***	124.10***	144.48***	156.01***	126.71***
	(6.17)	(7.89)	(9.66)	(6.24)	(7.62)	(10.36)
R^2	0.11	0.11	0.12	0.11	0.11	0.11
No. of Obs.	7,110	5,288	3,868	6,958	5,394	3,362

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable is Enrolment = 1 if the child is enrolled in school (scaled up by 100; to interpreted as percentage points). Program Impact = Treatment interacted with 2011 year dummy. Column (1) shows results using both the 'High income' control group and the 'Low income' control group using means-test thresholds for 2008. Column (2) shows results using the 'Low income' control group only; at means-test thresholds of 2008. 'High income' control group for columns (1) and (3) = Children from households whose income was greater than R 4 400; who were means-test ineligible and did not receive the Child Support Grant. Low income control group = Children from households whose income was less than R 2 200. Treatment group for columns (1), (2) and (3) is comprised of children from households whose incomes were between R 2 200 and R 4 400 and received the Child Support Grant. Column (4) shows DID results using the 'High income' and 'Low income' control groups at means-test threshold of 2011. Column (5) shows DID results using the 'Low income' control group only at means-test threshold for 2011. The means-test threshold was R 2 200 for single caregivers and R 4 400 for double income caregivers in 2008 and R 2 600 for single caregivers and R 5 200 for double caregivers in 2011. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 4.19: DID Results of the Impact of the Child Support Grant on the Enrolment of Secondary-School-Aged Boys (using 2007 and 2011 GHS Data)

(Data – General Household Survey 2011 and 2007.Sample: Male Children aged 13 – 18 years)

	Based on 2008 means-test Threshold			Based on 2011 Means-test Threshold		
Control group:	High & Low	Low Income	High Income	High & Low	Low Income	High
	(1)	(2)	(3)	(4)	(5)	(6)
Program Impact	7.43*	6.59	8.18*	8.54	7.98	8.90
	(4.18)	(4.25)	(4.26)	(5.97)	(6.03)	(5.95)
Treatment	-4.74	-2.82	-2.53	-6.79	-5.04	-5.24
	(4.12)	(4.20)	(4.26)	(5.92)	(5.99)	(5.95)
Dummy 2012	-0.36	0.44	-1.95*	-0.35	0.18	-1.28
	(0.91)	(1.20)	(1.15)	(0.91)	(1.16)	(1.18)
Head's Age	3.93**	2.91	6.20**	3.76**	2.88	5.13*
	(1.76)	(1.92)	(2.57)	(1.78)	(1.91)	(2.65)
Head's Age^2	-0.21	-0.11	-0.38*	-0.19	-0.10	-0.30
	(0.15)	(0.17)	(0.22)	(0.16)	(0.17)	(0.23)
Head's Education	4.37***	4.72***	2.89***	4.43***	4.98***	2.41***
	(0.70)	(0.99)	(0.82)	(0.70)	(0.97)	(0.82)
Household Size	-2.73	-2.47	-3.82	-2.73	-2.55	-4.01
	(2.89)	(3.55)	(3.46)	(2.93)	(3.50)	(3.66)
Siblings	0.78	1.08	-1.46	1.06	1.04	-0.47
	(4.13)	(4.84)	(5.39)	(4.23)	(4.87)	(5.76)
Child's Age	-4.29***	-4.50***	-3.81***	-4.34***	-4.61***	-3.85***
	(0.22)	(0.26)	(0.29)	(0.22)	(0.26)	(0.31)
Dual income	20.26*	22.77	8.99	20.53*	24.22	7.23
	(11.34)	(17.25)	(12.33)	(11.35)	(16.65)	(12.64)
Father alive	2.80***	3.13***	1.26	2.77***	2.96***	1.45
	(0.96)	(1.08)	(1.31)	(0.98)	(1.08)	(1.39)
Father resident	-0.77	-6.27	7.51	0.41	-3.97	8.19
	(9.15)	(11.00)	(11.48)	(9.30)	(11.02)	(12.04)
Mother resident	0.79	1.12	0.77	0.81	0.99	1.30
	(0.86)	(1.01)	(1.14)	(0.88)	(1.02)	(1.21)
White	-9.19***	-14.09**	-9.81***	-9.29***	-13.93**	-9.59***
	(2.17)	(6.89)	(2.26)	(2.17)	(6.27)	(2.28)
Coloured	-14.64***	-16.84***	-11.75***	-14.87***	-16.83***	-11.70***
	(1.39)	(1.79)	(1.67)	(1.41)	(1.75)	(1.72)
Indian	-7.34***	-2.91	-9.47***	-7.41***	-5.20	-8.83***
	(2.84)	(4.78)	(3.19)	(2.84)	(4.50)	(3.12)
Log income	0.83**	-0.72	4.07***	0.84**	-0.54	4.02***
	(0.37)	(0.56)	(0.80)	(0.37)	(0.53)	(0.87)
_cons	134.06***	149.37***	96.03***	135.00***	149.98***	99.67***
	(5.93)	(7.42)	(9.86)	(5.97)	(7.28)	(10.50)
R^2	0.10	0.10	0.11	0.10	0.10	0.11
No. of Obs.	6,982	5,212	3,739	6,844	5,307	3,275

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable is Enrolment = 1 if the child is enrolled in school (scaled up by 100; to be interpreted as percentage points). Program Impact = Treatment interacted with 2011 year dummy. Column (1) shows results using both the 'High income' control group and the 'Low income' control group using means-test thresholds for 2008. Column (2) shows results using the 'Low income' control group only; at means-test thresholds of 2008. 'High income' control group for columns (1) and (3) = Children from households whose income was greater than R 4 400; who were means-test ineligible and did not receive the Child Support Grant. Low income control group = Children from households whose income was less than R 2 200. Treatment group for columns (1), (2) and (3) is comprised of children from households whose incomes were between R 2 200 and R 4 400. Column (4) shows DID results using the 'High income' and 'Low income' control groups at means-test threshold of 2011. Column (5) shows DID results using the 'Low income' control group only at means-test threshold for 2012. The means-test threshold was R 2 200 for single caregivers and R 4 400 for double income caregivers in 2008 and R 2 600 for single caregivers and R 5 200 for double caregivers in 2011. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 4.20: DID Results of the Impact of the Child Support Grant on the Enrolment of Secondary-School-Aged Children by Highest Grade Completed (using 2007 and 2011 GHS Data)

(Data: General Household Survey 2011 and 2007 – Using the 'High income' Control group)

	Based on 2008 Means-test Threshold			
	GRADE 8	GRADE 9	GRADE 10	GRADE 12
	(1)	(2)	(3)	(4)
Program Impact	1.77	4.54	9.09***	65.99***
	(3.98)	(2.76)	(2.94)	(7.85)
Treatment	1.36	3.18	-4.86*	-92.34***
	(3.79)	(2.46)	(2.64)	(4.60)
Dummy 2012	2.07	1.33	2.81	-65.45***
	(1.56)	(1.94)	(1.95)	(4.51)
Head's Age	4.64	2.84	5.13	-11.61
	(2.85)	(4.21)	(4.45)	(12.99)
Head's Age^2	-0.34	-0.12	-0.32	0.93
	(0.24)	(0.36)	(0.38)	(1.19)
Head's Education	1.01	0.83	2.19*	13.40***
	(1.07)	(1.31)	(1.17)	(3.79)
Household Size	-13.01***	-8.96	5.04	14.58
	(4.93)	(5.59)	(5.56)	(13.00)
Siblings	9.90	6.29	-18.97*	-21.01
	(7.06)	(8.37)	(9.72)	(17.74)
Child's Age	-5.10***	-4.36***	-5.15***	-2.33*
	(0.64)	(0.71)	(0.82)	(1.32)
Dual income	11.40	-2.46	-25.31	9.88
	(15.42)	(17.52)	(20.68)	(32.81)
Father alive	0.92	-2.25	-1.54	-1.73
	(1.77)	(1.86)	(2.07)	(5.11)
Father resident	11.40	-2.45	37.96**	111.56***
	(16.03)	(17.27)	(18.59)	(41.42)
Mother resident	0.12	1.81	1.35	-0.93
	(1.60)	(1.72)	(1.67)	(5.05)
Male child	0.08	2.03	1.91	-3.79
	(1.16)	(1.35)	(1.41)	(2.91)
White	-3.31*	-4.91**	-18.31***	-6.36
	(1.83)	(2.16)	(4.85)	(5.24)
Coloured	-11.95***	-12.18***	-11.48***	-2.20
	(2.44)	(2.87)	(2.61)	(3.40)
Indian	-1.84	-6.31	-9.15**	-15.07***
	(1.61)	(4.03)	(3.74)	(5.44)
Log income	1.15	4.64***	3.02**	-0.03
	(1.09)	(1.27)	(1.22)	(1.74)
_cons	149.95***	114.31***	135.48***	149.51***
	(14.18)	(17.83)	(20.07)	(42.61)
R^2	0.15	0.12	0.12	0.61

Number of Obs.	1,390	1,342	1,151	381

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable is Enrolment = 1 if the child is enrolled in school (scaled up by 100; to be interpreted as percentage points). Program Impact = Treatment interacted with 2011 year dummy. DID results in this table show estimations using the 'High income' control group on means-test thresholds of 2008. 'High income' control group = Children from households whose income was greater than R 4 400; who were means-test ineligible and did not receive the Child Support Grant. Low income control group = Children from households whose income was less than R 2 200. Treatment group is comprised of children from households whose income were between R 2 200 and R 4 400 and received the Child Support Grant. The means-test threshold was R 2 200 for single caregivers and R 4 400 for double income caregivers in 2008. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 4.21: DID Results of the Impact of the Child Support Grant on the Enrolment of Secondary-School-Aged Children by Highest Grade Completed (using 2007 and 2011 GHS Data)

(Data: General Household Survey 2011 and 2007 – Using the 'Low income' Control group)

	Based on 2008 Means-test Threshold			
	GRADE 8	GRADE 9	GRADE 10	GRADE 12
	(1)	(2)	(3)	(4)
Program Impact	2.26	-0.40	8.50***	62.32***
	(4.63)	(4.50)	(3.07)	(6.97)
Treatment	0.61	3.36	-4.19	-83.23***
	(4.37)	(4.28)	(2.85)	(4.61)
Dummy 2012	3.79**	8.57***	2.62	-62.72***
	(1.86)	(1.98)	(1.88)	(4.73)
Head's Age	8.81***	5.41*	-1.46	-5.50
	(2.78)	(3.08)	(2.98)	(8.66)
Head's Age^2	-0.65***	-0.33	0.16	0.36
	(0.24)	(0.27)	(0.26)	(0.74)
Head's Education	2.36*	2.97*	1.80	7.98**
	(1.29)	(1.79)	(1.28)	(4.05)
Household Size	-5.43	-4.93	4.46	5.29
	(5.02)	(5.23)	(5.45)	(12.93)
Siblings	6.01	5.15	-16.38**	-0.35
	(6.71)	(7.62)	(8.24)	(17.16)
Child's Age	-7.10***	-6.80***	-4.97***	-4.94***
	(0.56)	(0.61)	(0.69)	(1.71)
Dual income	-11.05	6.84	-26.68	1.58
	(26.53)	(28.48)	(28.24)	(59.42)
Father alive	2.75*	1.48	1.17	7.75*
	(1.58)	(1.60)	(1.76)	(4.52)
Father resident	-17.42	-5.91	27.34	-0.17
	(17.07)	(16.61)	(17.68)	(38.55)
Mother resident	0.92	1.90	2.85*	2.93
	(1.56)	(1.53)	(1.62)	(4.02)
Male child	3.72***	3.71***	4.14***	4.02
	(1.27)	(1.31)	(1.36)	(3.15)
White	-17.42	-10.62	-30.47**	-3.81
	(12.50)	(10.20)	(14.28)	(10.40)
Coloured	-13.26***	-18.80***	-15.86***	-6.94
	(2.51)	(2.76)	(2.94)	(4.26)
Indian	1.65	-10.38	-7.13*	16.31
	(2.70)	(7.07)	(4.21)	(10.28)
Log income	-1.01	-0.85	0.26	-2.98**
	(0.82)	(0.81)	(0.80)	(1.48)
_cons	175.64***	180.15***	172.05***	195.26***
	(12.15)	(13.58)	(14.67)	(36.49)
R^2	0.16	0.13	0.08	0.48

No. of Observations	1,894	1,958	1,616	461

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable is Enrolment = 1 if the child is enrolled in school (scaled up by 100; to be interpreted as percentage points). DID results in this table show estimations using the 'Low income' control group on means-test thresholds of 2008. 'High income' control group = Children from households whose income was greater than R 4 400; who were mean-test ineligible and did not receive the Child Support Grant. Low income control group = Children from households whose income was less than R 2 200. Treatment group is comprised of children from households whose incomes were between R 2 200 and R 4 400 and received the Child Support Grant. The means-test threshold was R 2 200 for single caregivers and R 4 400 for double income caregivers in 2008. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 4.22: Instrumental Variables (IV) First Stage Results

(Data: General Household Survey. Sample: Children aged 13 – 18 years)

	Based on 2007 and 2011 Data			Based on 2007 and 2012 Data		
	Full Sample	Girls	Boys	Full Sample	Girls	Boys
	(1)	(2)	(3)	(4)	(5)	(6)
Eligible x year	0.26***	0.25***	0.28***	0.44***	0.43***	0.45***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Year dummy	0.16***	0.17***	0.15***	0.08***	0.08***	0.07***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Head's Age	-0.02	-0.03*	0.00	-0.06***	-0.05**	-0.06**
	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Head's Age^2	0.00	0.00*	-0.00	0.00***	0.00**	0.00*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Head's Education	-0.07***	-0.07***	-0.08***	-0.08***	-0.07***	-0.08***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Household Size	-0.02	-0.02	-0.01	-0.00	-0.01	0.00
	(0.02)	(0.03)	(0.03)	(0.02)	(0.03)	(0.03)
Siblings	0.10***	0.08*	0.12***	0.12***	0.08*	0.15***
	(0.03)	(0.04)	(0.04)	(0.03)	(0.05)	(0.05)
Child's Age	-0.06***	-0.07***	-0.06***	-0.05***	-0.06***	-0.05***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Dual income	-0.15*	-0.13	-0.17	-0.07	-0.03	-0.10
	(0.08)	(0.12)	(0.12)	(0.09)	(0.13)	(0.13)
Father alive	0.02***	0.01	0.04***	-0.01	-0.02*	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Father resident	-0.39***	-0.32***	-0.47***	-0.42***	-0.32***	-0.52***
	(0.07)	(0.10)	(0.10)	(0.08)	(0.11)	(0.11)
Mother resident	0.09***	0.10***	0.09***	0.05***	0.05***	0.04***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Male child	-0.00			-0.00		
	(0.01)			(0.01)		
White	-0.13***	-0.14***	-0.13***	-0.14***	-0.16***	-0.13***
	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Coloured	-0.06***	-0.06***	-0.07***	-0.07***	-0.08***	-0.07***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Indian	-0.11***	-0.11***	-0.11***	-0.09***	-0.11***	-0.08**
	(0.02)	(0.03)	(0.03)	(0.02)	(0.03)	(0.03)
Log income	-0.03***	-0.04***	-0.03***	-0.04***	-0.04***	-0.03***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
_cons	1.31***	1.45***	1.17***	1.41***	1.50***	1.32***
	(0.05)	(0.07)	(0.07)	(0.06)	(0.08)	(0.08)
R^2	0.33	0.33	0.34	0.43	0.43	0.43
No. of Obs.	17,358	8,743	8,615	12,742	6,488	6,254

Notes: a. Robust standard errors are in parenthesis. Dependent Variable is Child Support Grant = 1 if the child received the grant and zero otherwise. Eligible x year = 'having an age-eligible child' interacted with year (i.e. 2011 and 2012 respectively). ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

b. Test of Endogeneity

Tests of endogeneity

Ho: variables are exogenous

Robust score chi2(1)	=	5.1574	(p	= 0.0231)
Robust regression F(1,12711)	=	5.16091	(p	= 0.0231)

Notes: The null hypothesis is that the Child Support Grant is exogenous. In this case I reject the null and conclude that the Child Support Grant is endogenous.

c. Test of Overidentifying Restrictions

Since the number of my instruments is equal to the number of endogenous variables, my model is just-identified.

d. First-stage regression summary statistics

First-stage regression summary statistics

Variable	R-sq.	Adjusted R-sq.	Partial R-sq.	Robust F(1,12712)	Prob > F
Child Support Grant	0.4314	0.4306	0.0792	2060.1	0.0000

Notes: The instruments are jointly significantly different from zero. The instrument is strong with an F statistic of 2060.1. Generally, an F statistic over 10 is required to suggest instruments are sufficiently strong.

Table 4.23: IV Results of the Impact of the Child Support Grant on the Enrolment of Secondary-School-Aged Children

(Data: General Household Survey. Sample: Children aged 13 – 18 years)

	Based on 2007 and 2011 Data			Based on 2007 and 2012 Data		
	Full Sample	Girls	Boys	Full Sample	Girls	Boys
	(1)	(2)	(3)	(4)	(5)	(6)
Program Impact	9.23***	11.82***	7.08*	12.13***	11.55***	12.93***
	(2.81)	(4.32)	(3.68)	(2.40)	(3.47)	(3.32)
Year dummy	-1.97*	-2.89*	-1.22	-4.43***	-4.38**	-4.59***
	(1.06)	(1.60)	(1.40)	(1.22)	(1.75)	(1.70)
Head's Age	4.09***	4.24***	3.93***	8.65***	9.31***	7.93***
	(0.94)	(1.34)	(1.32)	(1.33)	(1.88)	(1.89)
Head's Age^2	-0.24***	-0.26**	-0.22*	-0.68***	-0.76***	-0.59***
	(0.09)	(0.12)	(0.12)	(0.12)	(0.17)	(0.17)
Head's Education	4.47***	4.54***	4.36***	4.83***	4.72***	4.90***
	(0.46)	(0.66)	(0.65)	(0.52)	(0.74)	(0.73)
Household Size	-2.16	-1.03	-3.40	-1.79	-1.58	-2.22
	(1.61)	(2.35)	(2.21)	(1.93)	(2.79)	(2.67)
Siblings	-3.36	-7.19**	0.85	-1.89	-5.06	1.15
	(2.25)	(3.26)	(3.11)	(2.65)	(3.82)	(3.68)
Child's Age	-3.83***	-4.02***	-3.57***	-3.47***	-3.91***	-3.00***
	(0.30)	(0.46)	(0.39)	(0.25)	(0.37)	(0.33)
Dual income	11.15	3.64	18.90*	1.26	-4.74	8.12
	(7.40)	(10.71)	(10.22)	(7.62)	(10.98)	(10.57)
Father alive	1.63***	1.35*	1.92***	2.10***	1.82**	2.34**
	(0.53)	(0.75)	(0.74)	(0.65)	(0.92)	(0.92)
Father resident	2.30	3.10	0.53	2.88	2.48	3.52
	(5.61)	(8.03)	(7.82)	(6.16)	(8.75)	(8.69)
Mother resident	0.61	0.57	0.65	3.03***	2.77**	3.33***
	(0.56)	(0.83)	(0.76)	(0.79)	(1.14)	(1.11)
Male child	0.97**			0.93*		
	(0.42)			(0.48)		
White	-5.31***	-2.71	-7.79***	-2.06	-2.21	-1.94
	(1.43)	(2.11)	(1.95)	(1.49)	(2.21)	(2.01)
Coloured	-9.87***	-6.86***	-12.78***	-8.75***	-6.65***	-10.85***
	(0.68)	(0.99)	(0.94)	(0.73)	(1.06)	(1.01)
Indian	-6.87***	-7.02***	-6.74***	-6.40***	-6.12**	-6.88**
	(1.83)	(2.64)	(2.53)	(1.99)	(2.80)	(2.84)
Log income	1.07***	1.47***	0.77**	1.28***	1.64***	0.97***
	(0.24)	(0.36)	(0.32)	(0.26)	(0.37)	(0.36)
_cons	124.72***	124.73***	124.00***	103.04***	107.41***	99.17***
	(6.24)	(9.82)	(7.97)	(6.22)	(9.15)	(8.44)
R^2	0.10	0.10	0.10	0.10	0.11	0.09
No. of Obs.	17,335	8,728	8,607	12,730	6,483	6,247

Notes: Robust standard errors are in parenthesis. Dependent Variable is Enrolment = 1 if the child is enrolled in school (scaled up by 100; to be interpreted as percentage points). IV used in these regressions is 'having an age-eligible child' interacted with year (i.e. 2011 and 2012 respectively). ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

a. F Test of Excluded Instruments

Angrist-Pischke multivariate F test of excluded instruments
F(1, 12712) = 2060.10
Prob > F = 0.0000

b. Summary Results for First-Stage Regressions

			(Underid)		(Weak id)
Variable	F(1, 12712)	P-value	AP Chi-sq(1)	P-value	AP F(1, 12712)
Child Support Grant	2060.10	0.0000	2063.01	0.0000	2060.10

NB: first-stage test statistics heteroskedasticity-robust

c. Under-Identification Test

Ho: matrix of reduced form coefficients has rank=K1-1 (underidentified)		
Ha: matrix has rank=K1 (identified)		
Kleibergen-Paap rk LM statistic	Chi-sq(1)=1025.47	P-value=0.0000

d. Weak Instrument Robust Inference

Tests of joint significance of endogenous regressors B1 in main equation			
Ho: B1=0 and orthogonality conditions are valid			
Anderson-Rubin Wald test	F(1,12712)=	13.52	P-value=0.0002
Anderson-Rubin Wald test	Chi-sq(1)=	13.54	P-value=0.0002
Stock-Wright LM S statistic	Chi-sq(1)=	13.45	P-value=0.0002

e. Weak Identification Test

Weak identification test (Cragg-Donald Wald F statistic):	1093.411
(Kleibergen-Paap rk Wald F statistic):	2060.098
Stock-Yogo weak ID test critical values: 10% maximal IV size	16.38
15% maximal IV size	8.96
20% maximal IV size	6.66
25% maximal IV size	5.53

NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.

f. Overidentification Test of all Instruments

Hansen J statistic (overidentification test of all instruments):	0.000
	(equation exactly identified)

Table 4.24: IV Results of the Impact of the Child Support Grant on the Enrolment of Secondary-School-Aged Children (using six yearly GHS Data from 2007 to 2012)

(Data: General Household Survey 2007 to 2012.Sample Children aged 13 - 18)

	Full Sample (1)	Girls (2)	Boys (3)
Program Impact	11.93***	9.94**	13.94***
	(3.41)	(4.87)	(4.76)
Dummy 2008	0.03	0.00	0.08
	(0.52)	(0.74)	(0.71)
Dummy 2009	-1.40**	-1.47*	-1.35
	(0.59)	(0.85)	(0.83)
Dummy 2010	-2.63***	-2.54**	-2.72**
	(0.89)	(1.25)	(1.25)
Dummy 2011	-2.93**	-2.42	-3.44**
	(1.23)	(1.74)	(1.73)
Dummy 2012	-3.50**	-2.65	-4.34**
	(1.57)	(2.24)	(2.20)
Head's Age	4.74***	4.03***	5.34***
	(0.56)	(0.82)	(0.77)
Head's Age^2	-0.32***	-0.27***	-0.37***
	(0.05)	(0.07)	(0.07)
Parent Education	4.10***	3.77***	4.41***
	(0.34)	(0.47)	(0.49)
Household Size	-3.29***	-2.37*	-4.31***
	(0.97)	(1.42)	(1.32)
Siblings	-0.72	-3.72*	2.47
	(1.32)	(1.90)	(1.84)
Child's Age	-3.50***	-4.22***	-2.78***
	(0.38)	(0.55)	(0.52)
Dual income	6.85	6.01	7.85
	(4.60)	(6.67)	(6.34)
Father alive	1.01***	0.74	1.23***
	(0.32)	(0.45)	(0.44)
Father resident	4.00	1.23	7.15
	(3.53)	(4.98)	(5.00)
Mother resident	0.42	0.22	0.64
	(0.41)	(0.60)	(0.57)
Male child	1.18***	0.00	0.00
	(0.24)	(0.00)	(0.00)
White	-2.64***	-1.29	-3.93***
	(0.95)	(1.37)	(1.31)
Coloured	-9.71***	-8.50***	-10.89***
	(0.47)	(0.67)	(0.64)
Indian	-6.57***	-5.39***	-7.86***
	(1.08)	(1.58)	(1.49)

Log income	1.22***	1.37***	1.07***
	(0.18)	(0.27)	(0.25)
_cons	117.80***	131.10***	105.95***
	(7.40)	(10.94)	(9.97)
R^2	0.09	0.10	0.08
No. of Observations	50,296	25,078	25,218

Notes: Robust standard errors are in parenthesis. Dependent Variable is Enrolment = 1 if the child is enrolled in school (scaled up by 100; to be interpreted as percentage points). IV used in these regressions is 'having an age-eligible child' interacted with year (i.e. 2011 and 2012 respectively). ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 4.25: Panel Fixed Effects Results of the Impact of the Child Support Grant on the Enrolment of Secondary-School-Aged Children

(Data – NIDS Wave 2 and Wave 3. Sample: Children Aged 13 – 18)

	Full Sample (1)	Girls (2)	Boys (3)
Child Support Grant	4.14***	0.93	8.09***
	(1.49)	(2.04)	(2.18)
Dummy 2012	-5.62***	-6.38***	-4.73***
	(0.81)	(1.18)	(1.08)
Log real income	1.32	2.61**	0.04
	(0.90)	(1.28)	(1.23)
Passed previous year	8.80***	9.49***	8.20***
	(1.92)	(2.93)	(2.50)
Mother alive	-3.33	-2.11	-3.66
	(3.84)	(4.83)	(5.81)
Father alive	2.46	3.89	0.66
	(3.02)	(3.80)	(4.73)
_cons	75.31***	62.85***	87.04***
	(8.10)	(11.17)	(11.63)
R^2	0.05	0.07	0.05
No. of Observations	5,329	2,701	2,628

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable = 1 if a child is enrolled in school (scaled up by 100; to be interpreted as percentage points). Child Support Grant status is binary, which is equal to 1 if the child receives the grant. Sample is comprised of children aged 13 – 18 years in 2010. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 4.26: Panel Fixed Effects Results of the Impact of the Child Support Grant on the Enrolment of Secondary-School-Aged Children by Geo-area

(Data – NIDS Wave 2 and Wave 3. Sample: Children Aged 13 – 18)

	Urban Areas		Rural Areas	
	Formal (1)	Informal (2)	Tribal (3)	Rural Formal (4)
Child Support Grant	7.54***	4.70	2.28	-6.57
	(2.67)	(5.60)	(1.96)	(6.88)
Dummy 2012	-6.04***	-9.07**	-3.99***	-10.03***
	(1.31)	(4.02)	(1.10)	(2.73)
Log real income	-0.77	5.07	1.89*	-1.09
	(1.68)	(3.66)	(1.13)	(3.50)
Passed previous year	16.53***	18.57**	2.57	13.03**
	(3.46)	(7.92)	(2.63)	(5.65)
Mother alive	-4.53	10.58	-7.03	-3.04
	(3.04)	(20.33)	(5.42)	(4.15)
Father alive	12.79*	27.77	-2.61	-5.71
	(6.68)	(17.67)	(3.35)	(8.49)
_cons	77.10***	7.43	84.22***	99.21***
	(15.06)	(32.54)	(9.64)	(24.20)
R^2	0.12	0.22	0.02	0.17
No. of observations	1,776	322	2,850	381

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable = 1 if a child is enrolled in school (scaled up by 100; to be interpreted as percentage points). Child Support Grant status is binary, which is equal to 1 if the child receives the grant. Sample is comprised of children aged 13 – 18 years in 2010. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 4.27: Cost-Effectiveness Analysis for the Child Support Grant

PANEL I: AGGREGATING COSTS[1]	2008	2009	2010	2011	2012	Total
A. Aggregating costs (in Rands)						
Cost of the Grant per Child per year[2]	2640	2658	2571	2526	2604	12999
Administration costs[3]	14	12	10	9	8	53
Opportunity cost of caregivers[4]	500	461	429	405	388	2182
Cost of application[5]	25	23	21	20	19	109
Inflation adjusted cost streams[6]						15344
B. Present value of cost streams (in Rands)[7]	3179	2920	2599	2350	2219	13268
C. Inflated (to 2012) costs (in Rands)[8]						13878
D. Costs converted into US Dollars[9]						1692
PANEL II: AGGREGATING IMPACTS						
E. Total impact (years of schooling)[10]						0.4995
PANEL III: COST EFFECTIVENESS						
F. Additional school years gained per US$100 [11]						0.03

Notes:

1. Costs are aggregated per child per year. I first converted all costs in terms of base year followed by a calculation of present value of these cost streams in the base year and then I inflated these costs forward to year 2012 (which is my year of analysis).

2. This figure was obtained by multiplying the grant amount per month by 12 then inflation-adjust it.

3. For this figure, I used the cost to government of applying the means-test as a proxy for administration costs. The cost estimates for applying the means-test range in the region of R 113.2 million for standard cut-offs (see Children's Institute and Centre for Actuarial Research; 2005). I divided this by the number of eligible children in that year and then I inflation-adjust it. Administration costs related to this involve official proof of employment and income status of the applicant and spouse and marital status; among others.

4. Since most beneficiaries of the Child Support Grant are poor, I used farm workers' earnings to calculate the opportunity cost of caregivers' time. In Western Cape Province, workers earn between R 100/200 to R 400/500. I divided R 300 by 7 to get the daily wage which I multiplied by 12 and rounded it off to the nearest 100. Anecdotal reports suggest that they spent almost 8 hours on business related to the Child Support Grant.

5. Researches on costs (for example Budlender *et al*. (2005); Children's Institute; Department of Social Development) put the cost of application at an average of R 25. This includes transport costs to social service offices, police stations and Home Affairs Offices and other ancillary costs such as photocopying of required documentation. I also inflation adjusted this cost.

6. To account for the fact that inflated costs may make later costs appear larger even if they are identical in real terms (see Dhaliwal *et al*., 2012), I deflated them back to their real value in the base year. I used GDP deflators obtained from the World Bank Development Indicators. GDP deflators have an advantage of covering a wide range of goods and services of the kind used in most anti-poverty programs over Consumer Price Indices.

7. To capture time preference and calculate present values of cost streams in the base year, I used a discount rate of 8 percent as my social opportunity cost of capital. I settled for 8 percent after taking the average of social cost of capital for different social projects in different sectors in South Africa, including education.

8. I used the 2012 GDP deflator (annual inflation) figure of 4.5 percent obtained from World Development Indicators to inflate forward the cost streams to 2012.

9. I used the average official exchange rate for 2012 of US$1: R8.2 obtained from World Development Indicators.

10. To calculate total impact, I calculated the total years of schooling achieved in the treatment and netted (subtracted from it) total years of schooling achieved in the control group. I used a program impact of 11.06 percentage points (per year) as obtained in my results. In obtaining total years of schooling I multiplied enrolment rate by conditional attendance rate. Since I did not estimate the effect of the Child Support Grant on daily attendance due to limitation of data on daily attendance, I assumed an absenteeism rate of 10 percent. I multiplied the program impact per child by attendance rate (0.9) and then multiplied the product by the period (5 years).

11. To calculate Additional school years gained per US$100 spent, I divided the total impact over the period by the total cost and multiplied it by 100.

Table 5.1: Summary Statistics – Full Sample and Children aged 10 – 14 years; NIDS Wave 1, Wave 2, and Wave 3

PANEL A

	Full sample – below 15 years			Aged 10 – 14 years		
Year:	2008	2010	2012	2008	2010	2012
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Height for Age Z-score	-0.913	-1.007	-1.003	-0.850	-1.142	-1.201
	(1.439)	(1.422)	(1.364)	(1.107)	(1.307)	(1.265)
Child Support Grant	0.724	0.766	0.777	0.670	0.736	0.748
	(0.447)	(0.423)	(0.417)	(0.471)	(0.441)	(0.434)
Household Size	6.783	7.060	6.776	6.395	6.825	6.675
	(3.230)	(3.520)	(3.589)	(3.007)	(3.363)	(3.411)
Household real income	2,394	2,880	3,174	2,480	3,106	3,257
	(4,369)	(6,142)	(7,155)	(4,259)	(6,788)	(6,878)
Real expenditure on food	863.6	884.7	840.2	835.9	905.3	865.5
	(569.9)	(574.1)	(740.4)	(530.6)	(616.8)	(895.5)
Rural formal areas	0.0883	0.0843	0.0846	0.0722	0.0862	0.0791
	(0.284)	(0.278)	(0.278)	(0.259)	(0.281)	(0.270)
Tribal Authority areas	0.551	0.536	0.509	0.505	0.521	0.514
	(0.497)	(0.499)	(0.500)	(0.501)	(0.500)	(0.500)
Urban informal areas	0.0617	0.0698	0.0673	0.0653	0.0592	0.0669
	(0.241)	(0.255)	(0.251)	(0.247)	(0.236)	(0.250)
Age	5.329	7.504	9.180	10.03	11.10	12.03
	(2.921)	(3.035)	(3.087)	(0.182)	(0.917)	(1.407)
Male child	0.511	0.510	0.513	0.460	0.518	0.512
	(0.500)	(0.500)	(0.500)	(0.499)	(0.500)	(0.500)
Observations	3,794	3,121	4,383	291	963	2,047

PANEL B

	Full sample – below 15 years			Aged 10 – 14 years		
Year:	2008	2010	2012	2008	2010	2012
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Weight for Age Z-score	-0.347	-0.252	-0.330	-0.342	-0.473	-0.328
	(1.406)	(1.455)	(1.376)	(1.236)	(1.029)	(1.340)
Observations	3,616	2,235	2,428	67	58	65

Notes: Standard Deviations are in parenthesis

Table 5.2: Summary Statistics – Children aged 5 – 9 and 1 – 4 Years; NIDS Wave 1, Wave 2 and Wave 3

PANEL A

	Aged 5 – 9 years			Aged 1 – 4 years		
Year:	2008	2010	2012	2008	2010	2012
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Height for Age Z-score	-0.794	-0.845	-0.795	-1.216	-1.190	-1.091
	(1.279)	(1.443)	(1.393)	(1.503)	(1.495)	(1.617)
Child Support Grant	0.738	0.778	0.799	0.739	0.782	0.820
	(0.440)	(0.415)	(0.401)	(0.439)	(0.413)	(0.385)
Household Size	6.675	7.210	6.872	6.954	7.058	6.808
	(3.144)	(3.609)	(3.696)	(3.355)	(3.522)	(4.057)
Household real income	2,444	2,749	3,145	2,340	2,850	2,767
	(4,587)	(5,187)	(7,696)	(4,113)	(7,137)	(4,407)
Real expenditure on food	864.7	884.4	821.6	862.0	854.0	782.2
	(574.1)	(571.2)	(581.8)	(573.3)	(510.1)	(468.0)
Rural formal areas	0.0848	0.0855	0.0910	0.0933	0.0785	0.0752
	(0.279)	(0.280)	(0.288)	(0.291)	(0.269)	(0.264)
Tribal Authority areas	0.550	0.551	0.502	0.560	0.523	0.526
	(0.498)	(0.498)	(0.500)	(0.497)	(0.500)	(0.500)
Urban informal areas	0.0668	0.0697	0.0653	0.0524	0.0863	0.0827
	(0.250)	(0.255)	(0.247)	(0.223)	(0.281)	(0.276)
Age	7.013	7.017	7.013	2.625	3.231	3.992
	(1.406)	(1.436)	(1.408)	(1.106)	(0.743)	(0.0865)
Male child	0.513	0.495	0.515	0.522	0.532	0.496
	(0.500)	(0.500)	(0.500)	(0.500)	(0.499)	(0.501)
Observations	1,945	1,521	2,066	1,394	637	266

PANEL B

	Aged 5 – 9 years			Aged 1 – 4 years		
Year:	2008	2010	2012	2008	2010	2012
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Weight for Age Z-score	-0.474	-0.290	-0.314	-0.263	-0.141	-0.453
	(1.345)	(1.459)	(1.360)	(1.401)	(1.474)	(1.498)
Observations	1,953	1,536	2,088	1,434	641	275

Notes: Standard Deviations are in parenthesis

Table 5.3: Summary Statistics on Height and Weight; NIDS Wave1, Wave 2 and Wave 3

Panel A: Children Aged 1 – 4 years

	2008		2010		2012	
	Mean (sd)	Obs.	Mean (sd)	Obs.	Mean (sd)	Obs.
Height	89.73 (17.01)	1,500	94.60 (16.75)	681	101.1 (9.548)	274
Weight	14.67 (7.220)	1,471	17.16 (11.09)	669	16.81 (3.394)	275

Panel B: Children Aged 5 – 9 years

	2008		2010		2012	
	Mean (sd)	Obs.	Mean (sd)	Obs.	Mean (sd)	Obs.
Height	118.7 (14.10)	2,033	117.5 (18.00)	1,598	119.1 (11.54)	2,093
Weight	23.54 (7.747)	1,978	24.46 (9.166)	1,559	23.75 (6.428)	2,094

Panel C: Children Aged 10 – 14 years

	2008		2010		2012	
	Mean (sd)	Obs.	Mean (sd)	Obs.	Mean (sd)	Obs.
Height	133.5 (13.48)	302	136.8 (18.69)	1,017	144.1 (11.29)	2,060
Weight	31.11 (7.120)	295	36.02 (11.22)	994	39.93 (11.25)	2,059

Notes: Standard deviations in parenthesis.

Table 5.4: Descriptive Statistics of Take-up rates by Treatment and Control groups, NIDS Wave 1, Wave 2 and Wave 3

Panel A: Treatment group based on 2008 means-test threshold

	2008	2010	2012
VARIABLES	mean (sd)	mean (sd)	mean (sd)
Child Support Grant	0.63	0.76	0.81
	(0.48)	(0.43)	(0.40)
No. of Obs.	582	941	1,319

Panel B: High income Control group based on 2008 means-test threshold

	2008	2010	2012
VARIABLES	mean (sd)	mean (sd)	mean (sd)
Child Support Grant	0.58	0.57	0.59
	(0.49)	(0.50)	(0.49)
No. of Obs.	1,723	1,309	1,431

Panel C: Treatment group based on 2012 means-test threshold

	2008	2010	2012
VARIABLES	mean (sd)	mean (sd)	mean (sd)
Child Support Grant	0.52	0.69	0.79
	(0.50)	(0.46)	(0.41)
No. of Obs.	440	728	1,109

Panel D: High income control group based on 2012 means-test threshold

	2008	2010	2012
VARIABLES	mean (sd)	mean (sd)	mean (sd)
Child Support Grant	0.60	0.57	0.55
	(0.49)	(0.50)	(0.50)
No. of Obs.	1,611	1,148	1,133

Notes: Standard Deviations are in parenthesis

Table 5.5: Descriptive Statistics, NIDS (2008) – by Treatment and Control groups

(Children aged below 15 years)

DESCRIPTIVE STATISTICS IN THE BASE YEAR – 2008					
	Control Group		Treatment Group		Difference in Means
VARIABLES	Mean(SD)	Obs.	Mean(SD)	Obs.	p-value
Height-for-age	-0.916	2325	-0.985	467	0.353
	(1.483)		(1.405)		
Weight-for-age	-0.366	2190	-0.329	467	0.614
	(1.421)		(1.388)		
Boys	0.513	3074	0.554	603	0.064
	(0.500)		(0.497)		
Girls	0.487	3074	0.446	603	0.064
	(0.500)		(0.497)		
Age	4.955	3074	4.789	603	0.230
	(3.102)		(3.131)		
Mother alive	0.944	3014	0.905	590	0.251
	(0.229)		(0.205)		
Father alive	0.892	2970	0.905	579	0.361
	(0.310)		(0.293)		
Good health	0.327	3011	0.313	591	0.493
	(0.469)		(0.464)		
Fair health	0.267	3011	0.235	591	0.104
	(0.443)		(0.424)		
Birthplace: Clinic	0.112	2995	0.092	584	0.162
	(0.316)		(0.290)		
Birthplace: Home	0.084	2995	0.062	584	0.068
	(0.278)		(0.241)		
Checkup: once	0.229	2941	0.232	577	0.873
	(0.420)		(0.423)		
Checkup: more 1	0.338	2941	0.364	577	0.229
	(0.473)		(0.482)		

Notes: Standard deviations are in parenthesis. The Control group is comprised of both the 'Low income' and 'High income' control groups. The Low income control group is comprised of children from households with household income less than or equal to R 2 200. The High income control group is comprised of children from households with household income greater than R 4 400. Treatment group is comprised of children from households with household income greater than R 2 200 and less than or equal to R 4 400.

Table 5.6: Descriptive Statistics, NIDS (2008) – Based on the 'Low income' Control Group

(Children aged below 15 years)

DESCRIPTIVE STATISTICS IN THE BASE YEAR – 2008					
	Control Group		Treatment Group		Difference in Means
VARIABLES	Mean(SD)	Obs.	Mean(SD)	Obs.	p-value
Height-for-age	-0.963	452	-1.027	155	0.634
	(1.502)		(1.100)		
Weight-for-age	-0.279	419	-0.324	148	0.753
	(1.562)		(1.318)		
Boys	0.513	704	0.504	236	0.820
	(0.500)		(0.501)		
Girls	0.487	704	0.496	236	0.820
	(0.189)		(0.501)		
Age	4.214	704	4.500	236	0.263
	(3.397)		(3.364)		
Mother alive	0.885	671	0.924	223	0.105
	(0.319)		(0.266)		
Father alive	0.878	664	0.914	220	0.149
	(0.328)		(0.282)		
Good health	0.298	671	0.304	236	0.876
	(0.458)		(0.461)		
Checkup: more 1	0.359	644	0.330	218	0.448
	(0.480)		(0.471)		
Birth place: Clinic	0.112	660	0.095	221	0.479
	(0.316)		(0.294)		

Notes: Standard deviations are in parenthesis. The control group in this table is limited to the 'Low income' control group and who DID NOT receive the Child Support Grant. The Low income control group is comprised of children from households with household income less than or equal to R 2 200. Treatment group is comprised of children from households with household income greater than R 2 200 and less than or equal to R 4 400.

Table 5.7: Descriptive Statistics, NIDS (2008) – Based on the 'Low income' Control Group

(Children aged below 15 years)

DESCRIPTIVE STATISTICS IN THE BASE YEAR – 2008					
	Control Group		Treatment Group		Difference in Means
VARIABLES	Mean(SD)	Obs.	Mean(SD)	Obs.	p-value
Height-for-age	-0.953	2105	-0.985	467	0.669
	(1.490)		(1.405)		
Weight-for-age	-0.414	2105	-0.329	436	0.250
	(1.403)		(1.388)		
Boys	0.510	2737	0.554	603	0.053
	(0.500)		(0.497)		
Girls	0.490	2737	0.446	603	0.053
	(0.500)		(0.497)		
Age	4.935	2737	4.789	603	0.296
	(3.099)		(3.131)		
Mother alive	0.943	2702	0.956	590	0.223
	(0.231)		(0.205)		
Father alive	0.886	2659	0.905	579	0.179
	(0.318)		(0.293)		
Good health	0.333	2700	0.313	591	0.342
	(0.471)		(0.464)		
Checkup: once	0.223	2632	0.232	577	0.613
	(0.416)		(0.423)		
Checkup: more 1	0.330	2632	0.364	577	0.120
	(0.470)		(0.482)		

Notes: Standard deviations are in parenthesis. The control group in this table is limited to the 'Low income' control group both who RECEIVED and those who DID NOT RECEIVE the Child Support Grant. The Low income control group is comprised of children from households with household income less than or equal to R 2 200. Treatment group is comprised of children from households with household income greater than R 2 200 and less than or equal to R 4 400.

Table 5.8: Descriptive Statistics, NIDS (2008) – Based on the 'High income' Control Group

(Children aged below 15 years)

DESCRIPTIVE STATISTICS IN THE BASE YEAR – 2008					
	Control Group		Treatment Group		Difference in Means
VARIABLES	Mean(SD)	Obs.	Mean(SD)	Obs.	p-value
Height-for-age	-0.826	1270	-0.985	467	0.03
	(1.349)		(1.405)		
Weight-for-age	-0.242	1192	-0.329	436	0.273
	(1.412)		(1.388)		
Household Size	70.89	1871	7.174	603	0.611
	(3.721)		(3.118)		
Indian	0.006	1817	0.008	603	0.557
	(0.078)		(0.091)		
Boys	0.507	1817	0.554	603	0.048
	(0.500)		(0.497)		
Girls	0.493	1817	0.446	603	0.048
	(0.500)		(0.497)		
Age	4.844	1817	4.789	603	0.712
	(3.125)		(3.131)		
Mother alive	0.946	1738	0.956	590	0.369
	(0.225)		(0.205)		
Father alive	0.911	1738	0.905	579	0.653
	(0.285)		(0.293)		
Good health	0.276	1741	0.313	591	0.088
	(0.447)		(0.464)		
Fair health	0.223	1741	0.235	591	0.536
	(0.416)		(0.424)		
Checkup: once	0.250	1669	0.232	577	0.381
	(0.433)		(0.423)		
Checkup: more 1	0.349	1669	0.364	577	0.526
	(0.477)		(0.481)		
Birth place: Clinic	0.084	1722	0.092	584	0.510
	(0.277)		(0.290)		

Notes: Standard deviations are in parenthesis. The control group in this table is limited to the 'High income' control group. The High income control group is comprised of children from households with household income greater than R 4 400. Treatment group is comprised of children from households with household income greater than R 2 200 and less than or equal to R 4 400.

Table 5.9: Descriptive Statistics, NIDS (2008) – by Control groups Based on 2008 Means-Test Threshold

(Children aged below 15 years)

DESCRIPTIVE STATISTICS IN THE BASE YEAR – 2008					
	Control: Group 1		Control: Group 2		Difference in Means
VARIABLES	Mean(SD)	Obs.	Mean(SD)	Obs.	p-value
Height-for-age	-0.844	901	-0.924	2433	0.155
	(1.47)		(1.43)		
Boys	0.520	1359	0.504	3036	0.309
	(0.50)		(0.50)		
Girls	0.480	1359	0.496	3036	0.309
	(0.50)		(0.50)		
Father alive	0.905	1341	0.891	2980	0.154
	(0.293)		(0.312)		
Fair health	0.252	1355	0.25	3032	0.907
	(0.43)		(0.43)		
Illness history	0.053	1346	0.052	2991	0.935
	(0.224)		(0.222)		
Checkup: once	0.234	1304	0.234	2946	0.999
	(0.423)		(0.423)		
Urban informal	0.079	1359	0.066	3036	0.133
	(0.269)		(0.249)		

Notes: Standard deviations are in parenthesis. Control group 1 is comprised of both the 'Low income' and 'High income' control groups who did not receive the grant. Group 2 is comprised of both the 'Low income' and 'High Income' control groups who received the grant. The Low income control group is comprised of children from households with household income less than or equal to R 2 200. The High income control group is comprised of children from households with household income greater than R 4 400. Here I am interested in seeing whether the two groups were homogenous in 2008.

Table 5.10: Descriptive Statistics, NIDS (2008) – by Control groups Based on 2012 Means-Test Threshold

(Children aged below 15 years)

DESCRIPTIVE STATISTICS IN THE BASE YEAR – 2008					
	Control: Group 1		Control: Group 2		Difference in Means
VARIABLES	Mean(SD)	Obs.	Mean(SD)	Obs.	p-value
Height-for-age	-0.987	481	-0.916	2991	0.316
	(1.492)		(1.423)		
Weight-for-age	-0.290	444	-0.370	2814	0.265
	(1.553)		(1.378)		
Boys	0.509	717	0.510	3820	0.955
	(0.50)		(0.50)		
Girls	0.491	717	0.490	3820	0.955
	(0.50)		(0.50)		
Father alive	0.882	709	0.897	3749	0.223
	(0.323)		(0.304)		
Head's Education	5.822	701	5.892	3763	0.729
	(4.429)		(5.00)		
Good health	0.299	715	0.317	3814	0.357
	(0.458)		(0.465)		
Fair health	0.273	715	0.243	3814	0.1
	(0.446)		(0.429)		
Birthplace: Clinic	0.110	706	0.103	3786	0.551
	(0.314)		(0.304)		
Illness history	0.046	710	0.053	3769	0.452
	(0.211)		(0.225)		
Checkup: once	0.220	690	0.237	3702	0.329
	(0.415)		(0.426)		
Checkup: more 1	0.359	690	0.334	3702	0.203
	(0.472)		(0.480)		

Notes: Standard deviations are in parenthesis. Control group 1 is comprised of both the 'Low income' and 'High income' control groups who did not receive the grant. Group 2 is comprised of both the 'Low income' and 'High Income' control groups who received the grant. The Low income control group is comprised of children from households with household income less than or equal to R 2 800. The High income control group is comprised of children from households with household income greater than R 5 600. Here I am interested in seeing whether the two groups were homogenous in 2008.

Table 5.11: Summary Statistics on Type and Expenditure of Food Consumed

	Consuming Type of Food		Real Expenditure Amount	
	2008	2010	2008	2010
VARIABLES	(1)	(2)	(3)	(4)
Red meat	0.556	0.643	69.19	85.76
	(0.497)	(0.479)	(142.3)	(124.4)
Chicken	0.914	0.932	82.67	93.43
	(0.281)	(0.253)	(79.04)	(163.9)
Fish	0.189	0.238	10.09	10.13
	(0.391)	(0.426)	(36.75)	(28.02)
Tinned fish	0.471	0.599	15.36	20.12
	(0.499)	(0.490)	(34.05)	(26.04)
Dairy	0.608	0.678	24.37	28.33
	(0.488)	(0.467)	(46.93)	(45.26)
Eggs	0.683	0.770	23.82	28.50
	(0.465)	(0.421)	(22.98)	(29.54)
Soya food	0.350	0.371	6.555	9.162
	(0.477)	(0.483)	(14.44)	(45.88)
Observations	5,999	5,696	5,339	5,490

Notes: Standard Deviations are in parenthesis. Figures not in parenthesis are means. Results are on a selected type of food. Columns (1) and (2) show proportion of households consuming type of food mentioned. Columns (3) and (4) show real expenditure amounts spend on each type of food.

Table 5.12: DID Results of the Impact of the Child Support Grant on Height-for-age

(Data: NIDS – Wave 1, Wave 2, Wave 3. Dependent Variable = Height-for-age Z-score)

	Based on 2008 Means-Test Threshold			
Age Cohort:	Below 15	10 – 14 years	5 – 9 years	1 – 4 years
	(1)	(2)	(3)	(4)
Program Impact	0.299*	0.107	0.253	0.337
	(0.166)	(0.239)	(0.271)	(0.474)
Treatment	-0.331**	-0.148	-0.312	-0.536
	(0.156)	(0.228)	(0.253)	(0.346)
Dummy 2010	0.135	-0.424*	0.155	0.431
	(0.134)	(0.220)	(0.207)	(0.312)
Dummy 2012	0.106	-0.320*	0.100	0.280
	(0.080)	(0.169)	(0.108)	(0.291)
Log real income	0.049**	0.001	0.090**	0.056
	(0.023)	(0.033)	(0.036)	(0.062)
Log real expenditure on food	0.180***	0.174**	0.165**	0.162
	(0.049)	(0.074)	(0.074)	(0.150)
Household size	-0.013*	0.001	-0.012	-0.044*
	(0.007)	(0.010)	(0.011)	(0.023)
Rural formal	-0.154	-0.175	-0.047	-0.384
	(0.110)	(0.171)	(0.163)	(0.267)
Tribal areas	-0.082	-0.301***	-0.084	0.238
	(0.071)	(0.106)	(0.104)	(0.204)
Urban informal	-0.111	-0.151	-0.175	0.000
	(0.110)	(0.138)	(0.181)	(0.334)
Father alive	-0.032	0.011	-0.131	0.107
	(0.078)	(0.096)	(0.132)	(0.291)
Household Head's education	-0.001	0.014	-0.010	-0.005
	(0.006)	(0.009)	(0.009)	(0.015)
Coloured	-0.194**	-0.201*	-0.208*	-0.011
	(0.075)	(0.115)	(0.111)	(0.201)
Indian	0.155	-0.157	0.272	0.428*
	(0.275)	(0.569)	(0.348)	(0.250)
White	0.381*	0.594**	0.108	0.670
	(0.207)	(0.269)	(0.332)	(0.611)
Age	-0.043***	-0.137***	-0.033	0.053
	(0.009)	(0.030)	(0.029)	(0.088)
Male child	-0.046	-0.107	0.033	-0.142
	(0.053)	(0.077)	(0.081)	(0.154)
Health status: Good	-0.070	-0.182**	-0.032	-0.045
	(0.061)	(0.088)	(0.093)	(0.177)
Health status: Fair	-0.156**	-0.205*	-0.058	-0.157
	(0.070)	(0.106)	(0.103)	(0.187)
Place of Birth: Clinic	-0.020	-0.086	0.108	0.006
	(0.102)	(0.143)	(0.161)	(0.263)

Place of Birth: Home	-0.415***	-0.463***	-0.376*	-0.391
	(0.120)	(0.163)	(0.192)	(0.335)
Health checkup: once	-0.119*	-0.169*	-0.045	0.048
	(0.067)	(0.095)	(0.102)	(0.212)
Checkup: more than twice	-0.198***	-0.160*	-0.078	-0.180
	(0.064)	(0.095)	(0.093)	(0.197)
_cons	-1.810***	0.002	-1.943***	-2.536***
	(0.342)	(0.612)	(0.553)	(0.979)
R^2	0.04	0.10	0.03	0.06
Number of Observations	2,741	1,001	1,279	408

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Treatment group is comprised of children from households with incomes greater than R 2 200 and less than or equal to R 4 400 who received the grant. The control group is comprised of children who did not receive the grant (both means-test eligible and ineligible). Real income = Household income less government grants; in 2008 terms. Health status is binary with base = 'excellent'. The classification was re-categorized into: Very good = good, below very good = fair. Health checkup is binary with base = 'never'

Table 5.13: DID Results of the Impact of the Child Support Grant on Height-for-age for Children in Urban Formal Areas

(Data: NIDS Wave 1, Wave 2, Wave 3. Sample: Urban Formal Areas)

	Based on 2008 Means-Test Threshold			
Age Cohort:	Below 15	10 – 14 years	5 – 9 years	1 – 4 years
	(1)	(2)	(3)	(4)
Program Impact	0.601**	-0.138	0.853**	0.165
	(0.239)	(0.370)	(0.377)	(0.726)
Treatment	-0.544**	0.213	-0.879**	-0.770
	(0.216)	(0.349)	(0.344)	(0.472)
Dummy 2010	0.420**	-0.086	0.534*	0.468
	(0.178)	(0.299)	(0.292)	(0.392)
Dummy 2012	0.104	-0.373	0.249*	0.328
	(0.112)	(0.231)	(0.147)	(0.452)
Log real income	0.101***	0.100*	0.104*	0.196*
	(0.038)	(0.059)	(0.057)	(0.100)
Log real expenditure on food	0.043	-0.021	0.111	0.023
	(0.075)	(0.128)	(0.104)	(0.242)
Household size	-0.048***	-0.036	-0.038*	-0.093*
	(0.016)	(0.025)	(0.021)	(0.054)
Father alive	0.087	0.258	-0.151	-0.241
	(0.126)	(0.174)	(0.195)	(0.299)
Household Head's education	-0.002	-0.015	0.001	-0.028
	(0.010)	(0.016)	(0.015)	(0.026)
Coloured	-0.130	-0.178	-0.145	0.161
	(0.083)	(0.136)	(0.123)	(0.228)
Indian	0.130	1.705***	-0.283	0.423
	(0.391)	(0.236)	(0.409)	(0.542)
White	0.466**	0.712**	0.214	0.626
	(0.215)	(0.277)	(0.347)	(0.732)
Age	-0.016	-0.140***	0.037	0.117
	(0.013)	(0.051)	(0.041)	(0.134)
Male child	-0.102	-0.210	-0.005	0.121
	(0.080)	(0.128)	(0.115)	(0.232)
Health status: Good	-0.056	-0.069	-0.194	0.243
	(0.092)	(0.146)	(0.129)	(0.294)
Health status: Fair	-0.185*	-0.239	-0.270	0.035
	(0.108)	(0.169)	(0.164)	(0.274)
Place of Birth: Clinic	-0.128	-0.068	-0.212	0.236
	(0.213)	(0.300)	(0.313)	(0.748)
Place of Birth: Home	-0.866***	-0.794**	-0.939***	-0.905**
	(0.189)	(0.368)	(0.306)	(0.389)
Health checkup: once	-0.142	-0.138	-0.035	-0.522
	(0.096)	(0.148)	(0.139)	(0.344)
Checkup: more than twice	-0.255**	-0.182	-0.118	-0.633*

	(0.101)	(0.152)	(0.148)	(0.358)
_cons	-1.407***	0.816	-2.087***	-1.904
	(0.502)	(1.034)	(0.770)	(1.414)
R^2	0.08	0.13	0.09	0.16
Number of Observations	1,068	399	496	159

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable = Height-for-age Z-score. Treatment group is comprised of children from households with incomes greater than R 2 200 and less than or equal to R 4 400 who received the grant. The control group is comprised of children who did not receive the grant (both means-test eligible and ineligible). Real income = Household income - government grants; in 2008 dollar -terms. Health status is binary with base = 'excellent'. The classification was re-categorized into: Very good = good, below very good = fair. Health checkup is binary with base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.14: DID Results of the Impact of the Child Support Grant on Height-for-age for Children in Tribal Authority Areas

(Data: NIDS – Wave 1, Wave 2, Wave 3. Sample: Children in Tribal Authority Areas)

	Based on 2008 Means-Test Threshold			
Age Cohort:	Below 15	10 – 14 years	5 – 9 years	1 – 4 years
	(1)	(2)	(3)	(4)
Program Impact	0.249	0.200	0.044	1.090
	(0.251)	(0.337)	(0.393)	(0.683)
Treatment	-0.234	-0.226	-0.020	-0.755
	(0.235)	(0.315)	(0.362)	(0.545)
Dummy 2010	-0.125	-0.701**	-0.065	0.777
	(0.215)	(0.330)	(0.307)	(0.538)
Dummy 2012	-0.065	-0.364	-0.103	0.312
	(0.131)	(0.252)	(0.181)	(0.418)
Log real income	0.027	-0.064	0.103**	-0.005
	(0.033)	(0.047)	(0.051)	(0.091)
Log real expenditure on food	0.311***	0.252**	0.325***	0.252
	(0.081)	(0.115)	(0.124)	(0.287)
Household size	-0.009	0.006	-0.017	-0.026
	(0.009)	(0.012)	(0.014)	(0.028)
Father alive	-0.088	-0.106	-0.134	0.366
	(0.109)	(0.130)	(0.179)	(0.511)
Household Head's education	-0.007	0.037***	-0.026**	-0.023
	(0.009)	(0.013)	(0.013)	(0.022)
Age	-0.071***	-0.127***	-0.037	-0.206
	(0.014)	(0.044)	(0.044)	(0.153)
Male child	-0.007	-0.154	0.112	-0.278
	(0.082)	(0.113)	(0.125)	(0.225)
Health status: Good	-0.103	-0.402***	0.086	-0.185
	(0.096)	(0.130)	(0.150)	(0.260)
Health status: Fair	-0.089	-0.213	0.108	0.052
	(0.101)	(0.162)	(0.139)	(0.322)
Place of Birth: Clinic	0.117	-0.030	0.385*	-0.101
	(0.139)	(0.188)	(0.209)	(0.329)
Place of Birth: Home	-0.339**	-0.418**	-0.219	-0.250
	(0.160)	(0.187)	(0.281)	(0.523)
Health checkup: once	-0.080	-0.145	-0.011	0.197
	(0.102)	(0.142)	(0.158)	(0.285)
Checkup: more than twice	-0.215**	-0.061	-0.150	-0.319
	(0.097)	(0.140)	(0.143)	(0.283)
_cons	-2.279***	-0.441	-3.055***	-1.986
	(0.552)	(0.889)	(0.918)	(1.668)
R^2	0.05	0.11	0.04	0.08
Number of Observations	1,245	450	590	175

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable = Height-for-age Z-score. Treatment group is comprised of children from households with incomes greater than R 2 200 and less than or equal to R 4 400 who received the grant. The control group is comprised of children who did not receive the grant (both means-test eligible and ineligible). Program impact = Treatment interacted with 2012 year dummy. Real income = Household income less government grants; in 2008 dollar -terms. Health status is binary with base = 'excellent'; the classification was re-categorized into: Very good = good, below very good = fair. Health checkup is binary with base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.15: DID Results of the Impact of the Child Support Grant on Weight-for-age

(Data: NIDS – Wave 1, Wave 2, Wave 3. Dependent Variable = Weight-for-age Z-score)

	Based on 2008 Means-Test Threshold			
Age Cohort:	Below 15 years (1)	10 – 14 (2)	5 – 9 years (3)	1 – 4 years (4)
Program Impact	0.114		0.272	-0.491
	(0.193)		(0.235)	(0.416)
Treatment	-0.292*		-0.342	-0.095
	(0.170)		(0.215)	(0.265)
Dummy 2010	0.139		0.302	0.059
	(0.147)		(0.186)	(0.233)
Dummy 2012	0.077		0.118	0.181
	(0.099)		(0.112)	(0.294)
Log real income	0.054*		0.081**	-0.086
	(0.032)		(0.037)	(0.068)
Log real expenditure on food	0.167***		0.161**	0.176
	(0.061)		(0.071)	(0.147)
Household size	-0.034***		-0.031***	-0.068***
	(0.010)		(0.011)	(0.026)
Rural formal	0.035		0.188	-0.178
	(0.128)		(0.143)	(0.270)
Tribal areas	0.163*		0.024	0.616***
	(0.088)		(0.102)	(0.192)
Urban informal	0.052		-0.105	0.481
	(0.183)		(0.213)	(0.389)
Father alive	0.007		0.027	0.101
	(0.101)		(0.115)	(0.304)
Household Head's education	0.003		0.008	-0.000
	(0.007)		(0.009)	(0.016)
Coloured	-0.503***		-0.680***	0.095
	(0.101)		(0.117)	(0.203)
Indian	-0.807***		-0.919***	-0.269
	(0.221)		(0.253)	(0.542)
White	0.105		-0.119	0.406
	(0.265)		(0.305)	(0.558)
Age	-0.039**		-0.019	-0.217**
	(0.016)		(0.029)	(0.086)
Male child	-0.144**		-0.073	-0.266*
	(0.067)		(0.076)	(0.149)
Health status: Good	-0.007		-0.090	0.030
	(0.078)		(0.089)	(0.175)
Health status: Fair	-0.084		-0.023	-0.090
	(0.084)		(0.095)	(0.189)
Place of Birth: Clinic	-0.284**		-0.214	-0.244
	(0.115)		(0.130)	(0.262)

Place of Birth: Home	-0.175	-0.160	-0.382
	(0.138)	(0.143)	(0.369)
Health checkup: once	-0.111	-0.051	-0.273
	(0.082)	(0.091)	(0.197)
Checkup: more than twice	-0.156*	-0.171*	-0.162
	(0.082)	(0.093)	(0.188)
_cons	-1.094**	-1.476***	0.305
	(0.441)	(0.557)	(1.022)
R^2	0.05	0.06	0.12
Number of Observations	1,801	1,277	417

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Treatment group is comprised of children from households with incomes greater than R 2 200 and less than or equal to R 4 400 who received the grant. The control group is comprised of children who did not receive the grant (both means-test eligible and ineligible). Real income = Household income less government grants; in 2008 terms. Health status is binary with base = 'excellent'. The classification was re-categorized into: Very good = good, below very good = fair. Health checkup is binary with base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.16: DID Results of the Impact of the Child Support Grant on Weight-for-age for Children in Urban Formal Areas

(Data: NIDS Wave 1, Wave 2, Wave 3. Sample: Urban Formal Areas)

	Based on 2008 Means-Test Threshold			
Age Cohort:	Below 15	10 – 14 years	5 – 9 years	1 – 4 years
	(1)	(2)	(3)	(4)
Program Impact	0.849***		1.281***	-0.392
	(0.309)		(0.384)	(0.605)
Treatment	-0.967***		-1.234***	-0.171
	(0.269)		(0.339)	(0.416)
Dummy 2010	0.433**		0.685**	0.306
	(0.218)		(0.289)	(0.322)
Dummy 2012	0.148		0.058	0.836*
	(0.150)		(0.169)	(0.436)
Log real income	0.153**		0.190***	0.078
	(0.061)		(0.073)	(0.103)
Log real expenditure on food	0.098		0.110	0.092
	(0.097)		(0.112)	(0.196)
Household size	-0.054***		-0.046**	-0.134***
	(0.019)		(0.021)	(0.043)
Father alive	0.060		0.217	-0.411*
	(0.165)		(0.185)	(0.228)
Household Head's education	0.003		0.016	-0.033
	(0.013)		(0.016)	(0.025)
Coloured	-0.482***		-0.674***	0.112
	(0.118)		(0.135)	(0.235)
Indian	-1.489***		-1.471***	-1.465***
	(0.228)		(0.289)	(0.511)
White	0.159		-0.090	0.458
	(0.276)		(0.315)	(0.634)
Age	-0.012		0.032	-0.242*
	(0.027)		(0.045)	(0.139)
Male child	-0.232**		-0.179	-0.254
	(0.107)		(0.120)	(0.248)
Health status: Good	-0.061		-0.203	-0.015
	(0.130)		(0.142)	(0.273)
Health status: Fair	-0.238*		-0.200	-0.326
	(0.130)		(0.152)	(0.281)
Place of Birth: Clinic	-0.601**		-0.607**	-0.541
	(0.253)		(0.237)	(0.728)
Place of Birth: Home	-0.969***		-0.719***	-1.286***
	(0.206)		(0.250)	(0.378)
Health checkup: once	-0.052		0.038	-0.194
	(0.127)		(0.139)	(0.297)
Checkup: more than twice	-0.112		-0.052	-0.230

	(0.135)		(0.158)	(0.280)
_cons	-1.457**		-2.419***	0.786
	(0.704)		(0.883)	(1.322)
R^2	0.13		0.17	0.18
Number of Observations	688		498	161

Notes: Clustered Standard errors (clustered at the household level) are in parenthesis. Dependent Variable = Weight-for-age Z-score. Treatment group is comprised of children from households with incomes greater than R 2 200 and less than or equal to R 4 400 who received the grant. The control group is comprised of children who did not receive the grant (both means-test eligible and ineligible). Real income = Household income - government grants; in 2008 dollar -terms. Health status is binary with base = 'excellent'. The classification was re-categorized into: Very good = good, below very good = fair. Health checkup is binary with base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.17: DID Results of the Impact of the Child Support Grant on Weight-for-age for Children in Tribal Authority Areas

(Data: NIDS – Wave 1, Wave 2, Wave 3. Sample: Children in Tribal Authority Areas)

	Based on 2008 Means-Test Threshold			
Age Cohort:	Below 15	10 – 14 years	5 – 9 years	1 – 4 years
	(1)	(2)	(3)	(4)
Program Impact	-0.124		-0.267	0.615
	(0.262)		(0.313)	(0.623)
Treatment	0.011		0.123	-0.243
	(0.233)		(0.291)	(0.376)
Dummy 2010	-0.142		-0.178	0.228
	(0.213)		(0.258)	(0.377)
Dummy 2012	-0.099		-0.048	-0.253
	(0.145)		(0.159)	(0.433)
Log real income	-0.028		-0.006	-0.133
	(0.039)		(0.046)	(0.096)
Log real expenditure on food	0.308***		0.318***	0.216
	(0.089)		(0.097)	(0.234)
Household size	-0.026**		-0.025*	-0.037
	(0.012)		(0.014)	(0.031)
Father alive	0.037		0.034	0.196
	(0.137)		(0.149)	(0.498)
Household Head's education	0.001		0.001	0.005
	(0.010)		(0.012)	(0.022)
Age	-0.068***		-0.025	-0.355**
	(0.023)		(0.040)	(0.144)
Male child	-0.109		-0.038	-0.352*
	(0.092)		(0.106)	(0.212)
Health status: Good	0.051		-0.003	-0.022
	(0.108)		(0.129)	(0.263)
Health status: Fair	0.114		0.205*	0.053
	(0.116)		(0.123)	(0.313)
Place of Birth: Clinic	-0.154		0.033	-0.159
	(0.149)		(0.168)	(0.303)
Place of Birth: Home	0.041		0.095	0.067
	(0.188)		(0.189)	(0.552)
Health checkup: once	-0.145		-0.099	-0.217
	(0.110)		(0.127)	(0.274)
Checkup: more than twice	-0.256**		-0.319**	-0.231
	(0.116)		(0.131)	(0.287)
_cons	-1.191*		-1.791**	0.977
	(0.625)		(0.767)	(1.547)
R^2	0.05		0.04	0.11
Number of Observations	827		587	182

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variable = Weight-for-age Z-score. Treatment group is comprised of children from households with incomes greater than R 2 200 and less than or equal to R 4 400 who received the grant. The control group is comprised of children who did not receive the grant (both means-test eligible and ineligible). Program impact = Treatment interacted with 2012 year dummy. Real income = Household income less government grants; in 2008 dollar -terms. Health status is binary with base = 'excellent'; the classification was re-categorized into: Very good = good, below very good = fair. Health checkup is binary with base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.18: DID Results of the Impact of the Child Support Grant on Height-for-age and Weight-for-age for Children below 15 Years Living in Formal Rural Areas and Informal Urban Areas

(Data: NIDS – Waves 1, 2, 3. Children aged below 15 years Rural Formal and Urban Informal Areas)

	Based on 2008 Means-Test Threshold			
Dependent Variables= Z-scores:	Height for Age		Weight for Age	
	Rural Formal	Urban Informal	Rural Formal	Urban Informal
Program Impact	-0.853	-0.458	-0.135	-0.300
	(0.670)	(0.701)	(0.712)	(1.460)
Treatment	0.913	-0.007	-0.101	0.129
	(0.622)	(0.650)	(0.641)	(1.322)
Dummy 2010	-0.810	0.225	0.217	0.594
	(0.654)	(0.473)	(0.701)	(0.571)
Dummy 2012	-0.143	1.185***	-0.013	0.932
	(0.300)	(0.325)	(0.315)	(0.601)
Log real income	0.027	0.039	0.243**	0.110
	(0.098)	(0.073)	(0.118)	(0.149)
Log real expenditure on food	0.059	0.219	-0.201	0.125
	(0.235)	(0.140)	(0.264)	(0.274)
Household size	0.035	-0.007	-0.051	-0.060
	(0.041)	(0.031)	(0.048)	(0.084)
Father alive	-0.272	0.233	-0.469	0.255
	(0.452)	(0.191)	(0.513)	(0.453)
Household Head's education	0.012	0.043	-0.017	0.006
	(0.025)	(0.026)	(0.030)	(0.052)
Coloured	0.080	-0.655*	-0.358	-0.511
	(0.230)	(0.335)	(0.287)	(0.580)
Indian	0.215		-0.139	
	(0.437)		(0.394)	
White	0.129		-1.664*	
	(1.054)		(0.844)	
Age	0.016	-0.093***	0.055	-0.194*
	(0.039)	(0.035)	(0.055)	(0.103)
Male child	-0.131	0.111	-0.192	0.247
	(0.219)	(0.190)	(0.246)	(0.394)
Health status: Good	0.309	-0.564***	0.560**	-0.974**
	(0.237)	(0.213)	(0.267)	(0.461)
Health status: Fair	0.161	-0.747***	0.252	-0.938**
	(0.329)	(0.258)	(0.324)	(0.456)
Place of Birth: Clinic	-0.643	0.059	0.380	-0.576
	(0.427)	(0.258)	(0.579)	(0.494)
Place of Birth: Home	-0.116	1.867***	0.312	1.319*
	(0.339)	(0.288)	(0.312)	(0.682)
Health checkup: once	0.026	-0.280	0.581*	-0.742
	(0.303)	(0.230)	(0.334)	(0.507)
Checkup: more than twice	0.124	0.058	-0.033	0.087
	(0.275)	(0.246)	(0.328)	(0.415)

_cons	-1.861	-2.711**	-0.407	-0.463
	(1.611)	(1.061)	(1.850)	(1.512)
R^2	0.04	0.23	0.15	0.20
Number of Observations	254	174	179	107

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Treatment group is comprised of children from households with incomes greater than R 2 200 and less than or R 4 400 who received the grant. The control group is comprised of children who did not receive the grant (both means-test eligible and ineligible). Program impact = Treatment interacted with 2012 year dummy. Real income = Household income less government grants; in 2008 dollar -terms. Health status is binary with base = 'excellent'; the classification was re-categorized into: Very good = good, below very good = fair. Health checkup is binary with base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.19: DID Results of the Impact of the Child Support Grant on Height-for-age and Weight-for-age by Gender

(Data: NIDS – Wave 1, Wave 2, Wave 3. Dependent Variable = Z-scores)

	Based on 2008 Means-Test Threshold			
Dependent Variable: Z-score=	Height-for-age		Weight-for-age	
	Girls	Boys	Girls	Boys
Program Impact	0.372*	0.201	0.125	0.101
	(0.219)	(0.256)	(0.285)	(0.262)
Treatment	-0.317	-0.338	-0.172	-0.442**
	(0.195)	(0.246)	(0.258)	(0.223)
Dummy 2010	-0.037	0.302	-0.095	0.404**
	(0.169)	(0.209)	(0.211)	(0.204)
Dummy 2012	-0.052	0.278**	-0.019	0.211
	(0.115)	(0.111)	(0.136)	(0.147)
Log real income	0.094***	-0.002	0.121***	-0.012
	(0.032)	(0.034)	(0.046)	(0.043)
Log real expenditure on food	0.162**	0.203***	0.069	0.253***
	(0.072)	(0.069)	(0.085)	(0.088)
Household size	-0.018*	-0.007	-0.051***	-0.015
	(0.010)	(0.011)	(0.015)	(0.014)
Rural formal	-0.016	-0.281*	0.105	-0.105
	(0.163)	(0.150)	(0.186)	(0.180)
Tribal areas	-0.037	-0.148	0.144	0.138
	(0.101)	(0.101)	(0.124)	(0.126)
Urban informal	-0.129	-0.083	-0.203	0.215
	(0.160)	(0.153)	(0.301)	(0.224)
Father alive	0.002	-0.055	-0.051	0.021
	(0.110)	(0.110)	(0.153)	(0.137)
Household Head's education	-0.004	0.002	0.006	-0.001
	(0.009)	(0.008)	(0.011)	(0.010)
Coloured	-0.170	-0.229**	-0.661***	-0.358**
	(0.114)	(0.102)	(0.144)	(0.143)
Indian	-0.168	0.472	-0.840**	-0.689***
	(0.379)	(0.318)	(0.375)	(0.257)
White	0.674*	0.220	-0.102	0.240
	(0.352)	(0.259)	(0.397)	(0.347)
Age	-0.030**	-0.055***	-0.066***	-0.008
	(0.013)	(0.013)	(0.023)	(0.023)
Health status: Good	-0.087	-0.047	0.100	-0.119
	(0.088)	(0.084)	(0.114)	(0.106)
Health status: Fair	-0.226**	-0.061	-0.217*	0.071
	(0.098)	(0.099)	(0.114)	(0.126)
Place of Birth: Clinic	-0.095	0.057	-0.437***	-0.117
	(0.136)	(0.154)	(0.162)	(0.164)
Place of Birth: Home	-0.582***	-0.190	-0.182	-0.182

	(0.162)	(0.172)	(0.179)	(0.212)
Health checkup: once	-0.064	-0.168*	-0.074	-0.137
	(0.096)	(0.093)	(0.120)	(0.113)
Checkup: more than twice	-0.158*	-0.227**	-0.326***	0.033
	(0.091)	(0.091)	(0.115)	(0.119)
_cons	-2.035***	-1.651***	-0.489	-1.731***
	(0.502)	(0.466)	(0.627)	(0.619)
R^2	0.06	0.04	0.09	0.05
Number of Observations	1,361	1,380	895	906

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Treatment group is comprised of children from households with incomes greater than R 2 200 and less than or equal to R 4 400 who received the grant. The control group is comprised of children who did not receive the grant (both means-test eligible and ineligible). Real income = Household income less government grants; in 2008 terms. Health status is binary with base = 'excellent'. The classification was re-categorized into: Very good = good, below very good = fair. Health checkup is binary with base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.20: Summary of DID Results of the Impact of the Child Support Grant on Height-for-Age Weight-for-Age: Regressions Controlling for Household Income including Government Grants

(Data: NIDS – Wave 1, Wave 2, Wave 3)

	Based on 2008 Means-Test Threshold			
Dependent Variables:	Height for Age	Observations	Weight for Age	Observations
	(1)	(2)	(3)	(4)
Full Sample:				
Below 15 years	0.288*	2,765	0.150	1,815
	(0.165)		(0.192)	
Female children	0.383*	1,374	0.171	902
	(0.216)		(0.282)	
Male children	0.173	1,391	0.133	913
	(0.254)		(0.262)	
Aged 10 – 14 years	0.048	1,010		
	(0.240)			
Aged 5 – 9 years	0.274	1,291	0.327	1,288
	(0.267)		(0.233)	
Aged 1 – 4 years	0.352	410	-0.455	419
	(0.473)		(0.415)	
Formal Urban Areas:				
Below 15 years	0.587**	1,074	0.849***	692
	(0.239)		(0.310)	
Aged 10 – 14 years	-0.179	401		
	(0.370)			
Aged 5 – 9 years	0.835**	500	1.239***	502
	(0.377)		(0.385)	
Aged 1 – 4 years	0.237	159	-0.366	161
	(0.727)		(0.609)	
Informal Urban Areas:				
Below 15 years	-0.731	176	-0.236	107
	(0.693)		(1.443)	
Formal Rural Areas:				
Below 15 years	-0.806	257	-0.286	181
	(0.664)		(0.655)	
Tribal Authority Areas:				

Below 15 years	0.264	1,258	-0.076	835
	(0.246)		(0.260)	
Aged 10 – 14 years	0.204	455		
	(0.336)			
Aged 5 – 9 years	0.074	595	-0.192	592
	(0.384)		(0.311)	
Aged 1 – 4 years	1.106	177	0.734	184
	(0.670)		(0.616)	

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-scores. Treatment group = children from households whose income is greater than R 2 200 and less than or equal to R 4 400 who received the grant. Control group = children from households whose income was less than or equal to R 2 200 and greater than R 4 400 who did not receive the grant (both means-test eligible and ineligible). Covariates used are: 2010 and 2012 year dummies, log of real income (real income is total household income INCLUDING government grants), log of real expenditure on food, household size, father alive, household head's education, race dummies, gender dummy, child's age, health status, place of birth, health check-up. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.21: Summary of DID Results of the Impact of the CSG on Height-for-Age and Weight-for-Age: Regressions Controlling for another Measure of Self-Reported Household Income

(Data: NIDS Wave 1, Wave 2, Wave 3)

	Based on 2008 Means-Test Threshold			
Dependent Variables:	Height for Age	Observations	Weight for Age	Observations
	(1)	(2)	(3)	(4)
Full Sample:				
Below 15 years	0.320*	2,757	0.157	1,813
	(0.165)		(0.194)	
Female children	0.425*	1,369	0.207	900
	(0.218)		(0.286)	
Male children	0.208	1,388	0.129	913
	(0.253)		(0.261)	
Aged 10 – 14 years	0.094	1,004		
	(0.237)			
Aged 5 – 9 years	0.291	1,290	0.338	1,287
	(0.267)		(0.235)	
Aged 1 – 4 years	0.400	409	-0.460	418
	(0.482)		(0.418)	
Formal Urban Areas:				
Below 15 years	0.588**	1,072	0.845***	692
	(0.239)		(0.311)	
Aged 10 – 14 years	-0.169	399		
	(0.363)			
Aged 5 – 9 years	0.833**	500	1.230***	502
	(0.377)		(0.390)	
Aged 1 – 4 years	0.334	159	-0.318	161
	(0.749)		(0.618)	
Informal Urban Areas:				
Below 15 years	-0.691	173	-0.505	106
	(0.701)		(1.492)	
Formal Rural Areas:				
Below 15 years	-0.703	257	-0.562	181
	(0.673)		(0.698)	
Tribal Authority Areas:				

Below 15 years	0.323	1,255	-0.057	834
	(0.247)		(0.262)	
Aged 10 – 14 years	0.283	453		
	(0.337)			
Aged 5 – 9 years	0.113	594	-0.178	591
	(0.383)		(0.313)	
Aged 1 – 4 years	1.174*	177	0.791	184
	(0.670)		(0.609)	

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-scores. Treatment group = children from households whose income is greater than R 2 200 and less than or equal to R 4 400 both who received the grant. Control group = children from households whose income was less than or equal to R 2 200 and greater than R 4 400 did not receive the grant(both means-test eligible and ineligible). Covariates used are: 2010 and 2012 year dummies, log of real income (real income is self-reported as household questionnaire), log of real expenditure on food, household size, father alive, household head's education, race dummies, gender dummy, child's age, health status, place of birth, health check-up. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.22: Summary of DID Results of the Impact of the Child Support Grant on Height-for-Age and Weight-for-Age Based on 2012 Means-Test Threshold

(Data: NIDS – Wave 1, Wave 2, Wave 3)

Dependent Variables:	Based on 2012 Means-Test Threshold			
	Height for Age	Observations	Weight for Age	Observations
	(1)	(2)	(3)	(4)
Full Sample:				
Below 15 years	0.384**	2,511	0.222	1,656
	(0.184)		(0.213)	
Female children	0.440*	1,251	0.159	831
	(0.244)		(0.299)	
Male children	0.260	1,260	0.271	825
	(0.281)		(0.310)	
Aged 10 – 14 years	0.237	912		
	(0.270)			
Aged 5 – 9 years	0.366	1,168	0.353	1,169
	(0.304)		(0.262)	
Aged 1 – 4 years	0.366	1,168	-0.417	388
	(0.304)		(0.262)	
Formal Urban Areas:				
Below 15 years	0.658**	1,014	0.674**	650
	(0.265)		(0.332)	
Aged 10 – 14 years	0.039	383		
	(0.426)			
Aged 5 – 9 years	1.033**	462	1.278***	466
	(0.428)		(0.387)	
Aged 1 – 4 years	-0.417	155	-0.750	157
	(0.713)		(0.657)	
Informal Urban Areas:				
Below 15 years	-0.533	171	-0.782	107
	(0.790)		(1.098)	
Formal Rural Areas:				
Below 15 years	-0.778	252	-0.441	183
	(0.694)		(0.631)	
Tribal Authority Areas:				

Below 15 years	0.369	1,074	0.085	716
	(0.277)		(0.296)	
Aged 10 – 14 years	0.381	386		
	(0.381)			
Aged 5 – 9 years	0.122	505	-0.194	503
	(0.449)		(0.363)	
Aged 1 – 4 years	1.339*	153	1.119	160
	(0.731)		(0.684)	

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-scores. Treatment group = children from households whose income is greater than R 2 800 and less than or equal to R 5 600 who received the grant. Control group = children from households whose income was less than or equal to R 2 800 and greater than R 5 600 who did not receive the grant (both means-test eligible and ineligible). Covariates used are: 2010 and 2012 year dummies, log of real income (real income is LESS of government grants), log of real expenditure on food, household size, father alive, household head's education, race dummies, gender dummy, child's age, health status, place of birth, health check-up. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.23: Summary of DID Results of the Impact of the CSG on Height-for-Age and Weight-for-Age: Regressions Controlling for Household Income including Government Grants

(Data: NIDS – Wave 1, Wave 2, Wave 3)

	Based on 2012 Means-Test Threshold			
Dependent Variables:	Height for Age	Observations	Weight for Age	Observations
	(1)	(2)	(3)	(4)
Full Sample:				
Below 15 years	0.365**	2,531	0.238	1,668
	(0.183)		(0.211)	
Female children	0.453*	1,263	0.203	838
	(0.241)		(0.295)	
Male children	0.214	1,268	0.263	830
	(0.281)		(0.309)	
Aged 10 – 14 years	0.185	919		
	(0.274)			
Aged 5 – 9 years	0.361	1,178	0.378	1,178
	(0.302)		(0.259)	
Aged 1 – 4 years	0.284	380	-0.386	390
	(0.507)		(0.459)	
Formal Urban Areas:				
Below 15 years	0.635**	1,020	0.652**	654
	(0.264)		(0.331)	
Aged 10 – 14 years	0.006	385		
	(0.425)			
Aged 5 – 9 years	0.997**	466	1.208***	470
	(0.424)		(0.382)	
Aged 1 – 4 years	-0.425	155	-0.748	157
	(0.714)		(0.664)	
Informal Urban Areas:				
Below 15 years	-0.776	173	-0.694	107
	(0.770)		(1.101)	
Formal Rural Areas:				
Below 15 years	-0.721	255	-0.414	185
	(0.682)		(0.616)	
Tribal Authority Areas:				

Below 15 years	0.367	1,083	0.113	722
	(0.275)		(0.294)	
Aged 10 – 14 years	0.409	389		
	(0.384)			
Aged 5 – 9 years	0.085	508	-0.155	506
	(0.444)		(0.361)	
Aged 1 – 4 years	1.313*	155	1.193*	162
	(0.720)		(0.673)	

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-scores. Treatment group = children from households whose income is greater than R 2 800 and less than or equal to R 5 600 who received the grant. Control group = children from households whose income was less than or equal to R 2 800 and greater than R 5 600 who did not receive the grant (both means-test eligible and ineligible). Covariates used are: 2010 and 2012 year dummies, log of real income (real income includes government grants), log of real expenditure on food, household size, father alive, household head's education, race dummies, gender dummy, child's age, health status, place of birth, health check-up. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.24: Summary of DID Results of the Impact of the CSG on Height-for-Age and Weight-for-Age: Regressions Controlling for another Measure of Self-Reported Household Income

(Data: NIDS – Wave 1, Wave 2, Wave 3)

Dependent Variables:	Based on 2012 Means-Test Threshold			
	Height for Age	Observations	Weight for Age	Observations
	(1)	(2)	(3)	(4)
Full Sample:				
Below 15 years	0.404**	2,523	0.254	1,666
	(0.183)		(0.212)	
Female children	0.508**	1,258	0.262	836
	(0.242)		(0.300)	
Male children	0.262	1,265	0.275	830
	(0.280)		(0.306)	
Aged 10 – 14 years	0.233	913		
	(0.272)			
Aged 5 – 9 years	0.386	1,177	0.395	1,177
	(0.301)		(0.260)	
Aged 1 – 4 years	0.333	379	-0.381	389
	(0.511)		(0.460)	
Formal Urban Areas:				
Below 15 years	0.635**	1,018	0.642*	654
	(0.264)		(0.331)	
Aged 10 – 14 years	0.017	383		
	(0.422)			
Aged 5 – 9 years	0.984**	466	1.188***	470
	(0.424)		(0.386)	
Aged 1 – 4 years	-0.339	155	-0.691	157
	(0.749)		(0.672)	
Informal Urban Areas:				
Below 15 years	-0.689	170	-0.804	106
	(0.770)		(1.188)	
Formal Rural Areas:				
Below 15 years	-0.581	255	-0.597	185
	(0.700)		(0.670)	
Tribal Authority Areas:				

Below 15 years	0.441	1,080	0.149	721
	(0.276)		(0.296)	
Aged 10 – 14 years	0.520	387		
	(0.382)			
Aged 5 – 9 years	0.139	507	-0.122	505
	(0.443)		(0.363)	
Aged 1 – 4 years	1.386*	155	1.255*	162
	(0.712)		(0.661)	

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-scores Treatment group = children from households whose income is greater than R 2 800 and less than or equal to R 5 600 who received the grant. Control group = children from households whose income was less than or equal to R 2 800 and greater than R 5 600 who did not receive the grant (both means-test eligible and ineligible). Covariates used are: 2010 and 2012 year dummies, log of real income (real income includes government grants), log of real expenditure on food, household size, father alive, household head's education, race dummies, gender dummy, child's age, health status, place of birth, health check-up. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.25: Summary of DID Results of the Impact of the Child Support Grant on Height-for-Age and Weight-for-Age – Robustness Check

(Data: NIDS – Wave 1, Wave 2, Wave 3)

	Based on 2008 Means-Test Threshold			
Dependent Variables:	Height for Age	Observations	Weight for Age	Observations
	(1)	(2)	(3)	(4)
Full Sample:				
Below 15 years	0.215*	6,916	0.086	6,734
	(0.122)		(0.139)	
Female children	0.231	3,370	0.171	2,370
	(0.163)		(0.207)	
Male children	0.168	3,546	0.015	2,493
	(0.181)		(0.183)	
Aged 10 – 14 years	0.047	2,176		
	(0.190)			
Aged 5 – 9 years	0.225	3,367	0.152	3,371
	(0.195)		(0.168)	
Aged 1 – 4 years	0.257	1,274	-0.431	1,289
	(0.323)		(0.313)	
Formal Urban Areas:				
Below 15 years	0.373*	2,158	0.573**	1,463
	(0.196)		(0.240)	
Aged 10 – 14 years	-0.525	728		
	(0.330)			
Aged 5 – 9 years	0.689**	1,034	0.770***	1,039
	(0.292)		(0.293)	
Aged 1 – 4 years	0.269	372	-0.287	373
	(0.568)		(0.476)	
Informal Urban Areas:				
Below 15 years	0.105	436	-0.076	293
	(0.618)		(1.343)	
Formal Rural Areas:				
Below 15 years	0.045	570	-0.178	409
	(0.321)		(0.436)	
Tribal Authority Areas:				

Below 15 years	0.154	3,752	-0.112	2,698
	(0.165)		(0.176)	
Aged 10 – 14 years	0.218	1,128		
	(0.246)			
Aged 5 – 9 years	-0.038	1,838	-0.210	1,841
	(0.269)		(0.221)	
Aged 1 – 4 years	0.714*	725	0.149	733
	(0.419)		(0.394)	

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-scores. Treatment group = children from households whose income is greater than R 2 200 and less than or equal to R 4 400 who received the grant. Control group = children from households whose income was less than R 2 200 and greater than R 4 400 (both who received the grant and those who did not receive the grant). Covariates used are: 2010 and 2012 year dummies, log of real income (real income is LESS of government grants), log of real expenditure on food, household size, father alive, household head's education, race dummies, gender dummy, child's age, health status, place of birth, health check-up. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.26: Summary of DID Results of the Impact of the CSG on Height-for-Age and Weight-for-Age – Regressions Controlling for Household Income including Government Grants – Robustness Check

(Data: NIDS – Wave 1, Wave 2, Wave 3)

Dependent Variables:	Based on 2008 Means-Test Threshold			
	Height for Age	Observations	Weight for Age	Observations
	(1)	(2)	(3)	(4)
Full Sample:				
Below 15 years	0.239**	7,006	0.113	4,928
	(0.120)		(0.138)	
Female children	0.251	3,428	0.178	2,409
	(0.162)		(0.205)	
Male children	0.196	3,578	0.058	2,519
	(0.178)		(0.184)	
Aged 10 – 14 years	0.036	2,201	0.209	105
	(0.186)		(0.971)	
Aged 5 – 9 years	0.275	3,415	0.205	3,417
	(0.193)		(0.168)	
Aged 1 – 4 years	0.302	1,289	-0.438	1,305
	(0.322)		(0.312)	
Formal Urban Areas:				
Below 15 years	0.387**	2,192	0.551**	1,489
	(0.196)		(0.238)	
Aged 10 – 14 years	-0.539	738		
	(0.332)			
Aged 5 – 9 years	0.690**	1,052	0.725**	1,057
	(0.289)		(0.291)	
Aged 1 – 4 years	0.408	377	-0.235	379
	(0.561)		(0.473)	
Informal Urban Areas:				
Below 15 years	0.030	444	-0.134	298
	(0.616)		(1.332)	
Formal Rural Areas:				
Below 15 years	0.127	576	-0.154	414
	(0.323)		(0.429)	
Tribal Authority Areas:				

Below 15 years	0.181	3,794	-0.071	2,727
	(0.162)		(0.176)	
Aged 10 – 14 years	0.223	1,140		
	(0.241)			
Aged 5 – 9 years	0.015	1,860	-0.143	1,862
	(0.264)		(0.221)	
Aged 1 – 4 years	0.739*	732	0.188	740
	(0.418)		(0.393)	

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-scores. Treatment group = children from households whose income is greater than R 2 200 and less than or equal to R 4 400 who received the grant. Control group = children from households whose income was less than or equal to R 2 200 and greater than R 4 400 (both who received the grant and those who did not receive the grant). Covariates used are: 2010 and 2012 year dummies, log of real income (real income INCLUDES government grants), log of real expenditure on food, household size, father alive, household head's education, race dummies, gender dummy, child's age, health status, place of birth, health check-up. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.27: Summary of DID Results of the Impact of the Child Support Grant on Height-for-Age and Weight-for-Age – Regressions Controlling for another Measure of Self-Reported Household Income – Robustness Check

(Data: NIDS – Wave 1, Wave 2, Wave 3)

Dependent Variables:	Based on 2008 Means-Test Threshold			
	Height for Age	Observations	Weight for Age	Observations
	(1)	(2)	(3)	(4)
Full Sample:				
Below 15 years	0.244**	6,974	0.111	4,914
	(0.120)		(0.139)	
Female children	0.252	3,408	0.173	2,399
	(0.163)		(0.206)	
Male children	0.207	3,566	0.063	2,515
	(0.178)		(0.184)	
Aged 10 – 14 years	0.055	2,182	0.545	104
	(0.185)		(0.822)	
Aged 5 – 9 years	0.282	3,405	0.207	3,407
	(0.193)		(0.168)	
Aged 1 – 4 years	0.292	1,286	-0.427	1,302
	(0.323)		(0.311)	
Formal Urban Areas:				
Below 15 years	0.389**	2,176	0.526**	1,480
	(0.196)		(0.239)	
Aged 10 – 14 years	-0.547*	730	0.607	720
	(0.327)		(0.371)	
Aged 5 – 9 years	0.682**	1,045	0.687**	1,050
	(0.290)		(0.293)	
Aged 1 – 4 years	0.460	376	-0.183	378
	(0.560)		(0.470)	
Informal Urban Areas:				
Below 15 years	0.029	439	-0.189	296
	(0.617)		(1.370)	
Formal Rural Areas:				
Below 15 years	0.116	575	-0.159	414
	(0.324)		(0.429)	
Tribal Authority Areas:				

Below 15 years	0.184	3,784	-0.063	2,724
	(0.162)		(0.177)	
Aged 10 – 14 years	0.246	1,133		
	(0.241)			
Aged 5 – 9 years	0.028	1,857	-0.128	1,859
	(0.264)		(0.221)	
Aged 1 – 4 years	0.708*	732	0.185	740
	(0.417)		(0.392)	

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-scores. Treatment group = children from households whose income is greater than R 2 200 and less than or equal to R 4 400 who received the grant. Control group = children from households whose income was less than or equal to R 2 200 and greater than R 4 400 (both who received the grant and those who did not receive the grant). Covariates used are: 2010 and 2012 year dummies, log of real income (real income is SELF-REPORTED as per household questionnaire), log of real expenditure on food, household size, father alive, household head's education, race dummies, gender dummy, child's age, health status, place of birth, health check-up. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.28: Summary of DID Results of the Impact of the Child Support Grant on Height-for-Age and Weight-for-Age – Results Based on 2012 Means-Test Threshold: Robustness Check

(Data: NIDS – Wave 1, Wave 2, Wave 3)

Dependent Variables:	Based on 2012 Means-Test Threshold			
	Height for Age	Observations	Weight for Age	Observations
	(1)	(2)	(3)	(4)
Full Sample:				
Below 15 years	0.308**	7,037	0.215	4,967
	(0.142)		(0.162)	
Female children	0.341*	3,419	0.216	2,410
	(0.189)		(0.223)	
Male children	0.237	3,618	0.206	2,557
	(0.215)		(0.238)	
Aged 10 – 14 years	0.213	2,191		
	(0.225)			
Aged 5 – 9 years	0.351	3,420	0.235	3,421
	(0.233)		(0.200)	
Aged 1 – 4 years	0.157	1,319	-0.274	1,333
	(0.364)		(0.362)	
Formal Urban Areas:				
Below 15 years	0.431*	2,200	0.403	1,498
	(0.222)		(0.259)	
Aged 10 – 14 years	-0.265	735		
	(0.382)			
Aged 5 – 9 years	0.844**	1,049	0.719**	1,051
	(0.348)		(0.298)	
Aged 1 – 4 years	-0.429	390	-0.682	393
	(0.554)		(0.518)	
Informal Urban Areas:				
Below 15 years	0.217	446	0.198	301
	(0.740)		(1.276)	
Formal Rural Areas:				
Below 15 years	0.258	579	-0.229	417
	(0.347)		(0.437)	
Tribal Authority Areas:				

Below 15 years	0.299	3,812	0.160	2,751
	(0.204)		(0.221)	
Aged 10 – 14 years	0.521*	1,133		
	(0.291)			
Aged 5 – 9 years	0.091	1,868	-0.077	1,870
	(0.345)		(0.285)	
Aged 1 – 4 years	0.765	745	0.701	751
	(0.470)		(0.441)	

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-scores. Treatment group = children from households whose income is greater than R 2 800 and less than or equal to R 5 600 who received the grant. Control group = children from households whose income was less than or equal to R 2 800 and greater than R 5 600 who received and those who did not receive the grant. Covariates used are: 2010 and 2012 year dummies, log of real income (real income is less government grants), log of real expenditure on food, household size, father alive, household head's education, race dummies, gender dummy, child's age, health status, place of birth, health check-up. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.29: Summary of DID Results of the Impact of the CSG on Height-for-Age and Weight-for-Age – Regressions Controlling for Household Income including Government Grants – Robustness Check

(Data: NIDS – Wave 1, Wave 2, Wave 3)

Dependent Variables:	Based on 2012 Means-Test Threshold			
	Height for Age	Observations	Weight for Age	Observations
	(1)	(2)	(3)	(4)
Full Sample:				
Below 15 years	0.322**	7,127	0.219	5,032
	(0.142)		(0.162)	
Female children	0.358*	3,477	0.222	2,449
	(0.188)		(0.221)	
Male children	0.245	3,650	0.207	2,583
	(0.215)		(0.238)	
Aged 10 – 14 years	0.215	2,216		
	(0.225)			
Aged 5 – 9 years	0.375	3,468	0.253	3,467
	(0.232)		(0.198)	
Aged 1 – 4 years	0.195	1,334	-0.277	1,349
	(0.363)		(0.361)	
Formal Urban Areas:				
Below 15 years	0.433*	2,234	0.367	1,524
	(0.221)		(0.258)	
Aged 10 – 14 years	-0.281	745		
	(0.383)			
Aged 5 – 9 years	0.836**	1,067	0.662**	1,069
	(0.346)		(0.295)	
Aged 1 – 4 years	-0.323	395	-0.643	399
	(0.554)		(0.518)	
Informal Urban Areas:				
Below 15 years	0.146	454	0.074	306
	(0.736)		(1.272)	
Formal Rural Areas:				
Below 15 years	0.386	585	-0.027	422
	(0.352)		(0.471)	
Tribal Authority Areas:				

Below 15 years	0.309	3,854	0.165	2,780
	(0.204)		(0.221)	
Aged 10 – 14 years	0.553*	1,145		
	(0.295)			
Aged 5 – 9 years	0.093	1,890	-0.070	1,891
	(0.345)		(0.284)	
Aged 1 – 4 years	0.786*	752	0.741*	758
	(0.470)		(0.441)	

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-scores. Treatment group = children from households whose income is greater than R 2 800 and less than or equal to R 5 600 who received the grant. Control group = children from households whose income was less than or equal to R 2 800 and greater than R 5 600 (both who received the grant and those who did not receive the grant). Covariates used are: 2010 and 2012 year dummies, log of real income (real income includes government grants), log of real expenditure on food, household size, father alive, household head's education, race dummies, gender dummy, child's age, health status, place of birth, health check-up. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.30: Summary of DID Results of the Impact of the CSG on Height-for-Age and Weight-for-Age – Regressions Controlling for another Measure of Self-Reported Household Income – Robustness Check

(Data: NIDS – Wave 1, Wave 2, Wave 3)

Dependent Variables:	Based on 2012 Means-Test Threshold			
	Height for Age	Observations	Weight for Age	Observations
	(1)	(2)	(3)	(4)
Full Sample:				
Below 15 years	0.322**	7,095	0.214	5,018
	(0.142)		(0.162)	
Female children	0.360*	3,457	0.223	2,439
	(0.188)		(0.223)	
Male children	0.245	3,638	0.206	2,579
	(0.214)		(0.237)	
Aged 10 – 14 years	0.223	2,197		
	(0.224)			
Aged 5 – 9 years	0.380	3,458	0.253	3,457
	(0.232)		(0.198)	
Aged 1 – 4 years	0.177	1,331	-0.271	1,346
	(0.364)		(0.360)	
Formal Urban Areas:				
Below 15 years	0.432*	2,218	0.336	1,515
	(0.221)		(0.258)	
Aged 10 – 14 years	-0.279	737		
	(0.380)			
Aged 5 – 9 years	0.825**	1,060	0.624**	1,062
	(0.346)		(0.296)	
Aged 1 – 4 years	-0.324	394	-0.611	398
	(0.549)		(0.511)	
Informal Urban Areas:				
Below 15 years	0.130	449	0.056	304
	(0.736)		(1.312)	
Formal Rural Areas:				
Below 15 years	0.360	584	0.008	422
	(0.349)		(0.476)	
Tribal Authority Areas:				

Below 15 years	0.303	3,844	0.165	2,777
	(0.204)		(0.221)	
Aged 10 – 14 years	0.561*	1,138		
	(0.294)			
Aged 5 – 9 years	0.099	1,887	-0.061	1,888
	(0.346)		(0.285)	
Aged 1 – 4 years	0.762	752	0.738*	758
	(0.468)		(0.439)	

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-scores. Treatment group = children from households whose income is greater than R 2 800 and less than or equal to R 5 600 who received the grant. Control group = children from households whose income was less than or equal to R 2 800 and greater than R 5 600 (both who did not receive the grant and those who received the grant). Covariates used are: 2010 and 2012 year dummies, log of real income (real income is self-reported income as per household questionnaire), log of real expenditure on food, household size, father alive, household head's education, race dummies, gender dummy, child's age, health status, place of birth, health check-up . ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.31: Fixed Effects Results of the Impact of the Child Support Grant on Height-for-Age

(Data: NIDS – Wave 1, Wave 2, Wave 3. Dependent Variable = Height-for-Age Z-score)

Age Cohort:	Below 15 years (1)	10 – 14 years (2)	5 – 9 years (3)	1 – 4 years (4)
Child Support Grant	0.118**	0.294**	0.129	0.159
	(0.058)	(0.131)	(0.124)	(0.295)
Dummy 2010	-0.105***	-0.473***	-0.055	0.028
	(0.033)	(0.086)	(0.059)	(0.134)
Dummy 2012	-0.091***	-0.628***	0.069	0.226
	(0.031)	(0.086)	(0.074)	(0.231)
Log real income	-0.009	-0.020	0.030	-0.048
	(0.016)	(0.033)	(0.031)	(0.063)
Log real expenditure on food	0.000	0.041	-0.015	-0.086
	(0.032)	(0.062)	(0.067)	(0.177)
Household size	-0.006	0.018	-0.003	-0.026
	(0.009)	(0.022)	(0.020)	(0.043)
Father alive	0.092	-0.343*	0.143	-0.403
	(0.088)	(0.198)	(0.155)	(0.734)
Health status: Good	-0.051	0.009	-0.056	0.130
	(0.036)	(0.077)	(0.074)	(0.150)
Health status: Fair	0.014	0.033	0.005	0.202
	(0.044)	(0.102)	(0.088)	(0.248)
Health checkup: once	-0.051	-0.012	0.051	0.042
	(0.038)	(0.082)	(0.074)	(0.199)
Checkup: more than twice	-0.135***	-0.158*	-0.050	-0.125
	(0.040)	(0.091)	(0.074)	(0.176)
_cons	-0.912***	-0.795*	-1.128**	0.067
	(0.241)	(0.478)	(0.492)	(1.344)
R^2	0.01	0.06	0.01	0.02
Number of Observations	10,160	3,008	4,964	2,045

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-Scores. Health status is self-reported and binary with base = 'excellent'. Health checkup is the number of times health professional was consulted in the last 12 months and the base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.32: Fixed Effects Results of the Impact of the Child Support Grant on Height-for-Age for Children in Urban Formal Areas

(Data: NIDS – Wave 1, Wave 2, Wave 3. Sample: Children in Urban Formal Areas)

Age Cohort:	Below 15 years (1)	10 – 14 years (2)	5 – 9 years (3)	1 – 4 years (4)
Child Support Grant	0.084	0.298**	0.135	0.128
	(0.077)	(0.142)	(0.120)	(0.403)
Dummy 2010	0.048	-0.402***	0.058	0.098
	(0.053)	(0.108)	(0.097)	(0.275)
Dummy 2012	0.123**	-0.410***	0.269**	0.208
	(0.050)	(0.113)	(0.106)	(0.489)
Log real income	-0.079***	-0.100*	-0.032	-0.046
	(0.028)	(0.052)	(0.065)	(0.143)
Log real expenditure on food	-0.008	-0.064	-0.131	0.343
	(0.052)	(0.082)	(0.104)	(0.332)
Household size	-0.014	0.041	0.002	-0.121
	(0.017)	(0.026)	(0.028)	(0.083)
Father alive	0.404***	0.488**	0.611***	1.949
	(0.135)	(0.209)	(0.229)	(1.369)
Health status: Good	-0.065	-0.058	-0.082	-0.216
	(0.058)	(0.113)	(0.117)	(0.227)
Health status: Fair	0.014	0.093	-0.018	-0.165
	(0.070)	(0.106)	(0.141)	(0.363)
Health checkup: once	-0.020	0.042	0.175	-0.060
	(0.060)	(0.110)	(0.118)	(0.302)
Checkup: more than twice	-0.172***	0.035	-0.125	-0.268
	(0.064)	(0.118)	(0.119)	(0.307)
_cons	-0.576	-0.262	-0.373	-4.209
	(0.389)	(0.644)	(0.727)	(3.014)
R^2	0.02	0.08	0.04	0.09
Number of Observations	3,240	1,040	1,552	614

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-Scores. Health status is self-reported and binary with base = 'excellent'. Health checkup is the number of times health professional was consulted in the last 12 months and the base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.33: Fixed Effects Results of the Impact of the Child Support Grant on Height-for-Age for Children in Urban Informal Areas

(Data: NIDS – Wave 1, Wave 2, Wave 3. Sample: Children in Urban Informal Areas)

Age Cohort:	Below 15 years (1)	10 – 14 years (2)	5 – 9 years (3)	1 – 4 years (4)
Child Support Grant	0.089	0.174	-0.272	-1.587
	(0.233)	(0.466)	(0.429)	(1.271)
Dummy 2010	-0.034	-0.187	-0.211	0.540
	(0.123)	(0.428)	(0.244)	(0.377)
Dummy 2012	-0.024	-0.436	-0.257	0.836
	(0.140)	(0.419)	(0.330)	(0.706)
Log real income	0.043	0.016	0.220	-0.444
	(0.060)	(0.114)	(0.142)	(0.292)
Log real expenditure on food	-0.035	0.264	0.260	-1.712***
	(0.130)	(0.238)	(0.263)	(0.345)
Household size	0.022	-0.113	0.016	0.725***
	(0.051)	(0.129)	(0.134)	(0.231)
Father alive	-0.058	-0.780	0.076	-2.397***
	(0.325)	(0.569)	(0.746)	(0.587)
Health status: Good	0.082	0.121	-0.031	0.645
	(0.161)	(0.391)	(0.338)	(0.705)
Health status: Fair	0.189	0.038	0.290	1.728***
	(0.180)	(0.395)	(0.371)	(0.384)
Health checkup: once	0.215	-0.006	0.498**	1.381**
	(0.149)	(0.254)	(0.245)	(0.652)
Checkup: more than twice	0.012	-0.378	-0.004	0.860
	(0.144)	(0.334)	(0.256)	(0.576)
_cons	-1.293	-1.492	-4.056*	10.211***
	(1.043)	(2.044)	(2.225)	(3.797)
R^2	0.02	0.11	0.09	0.86
Number of Observations	676	200	335	130

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-Scores. Health status is self-reported and binary with base = 'excellent'. Health checkup is the number of times health professional was consulted in the last 12 months and the base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.34: Fixed Effects Results of the Impact of the Child Support Grant on Height-for-Age for Children in Rural Formal Areas

(Data: NIDS – Wave 1, Wave 2, Wave 3. Sample: Children in Rural Formal Areas)

Age Cohort:	Below 15 years (1)	10 – 14 years (2)	5 – 9 years (3)	1 – 4 years (4)
Child Support Grant	-0.176	0.528	-0.587	0.428
	(0.211)	(0.415)	(0.528)	(0.608)
Dummy 2010	0.299***	-0.548	0.446**	1.101***
	(0.112)	(0.396)	(0.215)	(0.380)
Dummy 2012	-0.031	-1.142***	0.438*	0.219
	(0.117)	(0.344)	(0.251)	(0.769)
Log real income	0.042	0.122	0.127	0.173*
	(0.069)	(0.134)	(0.128)	(0.094)
Log real expenditure on food	-0.058	-0.213	0.002	-0.379
	(0.125)	(0.221)	(0.280)	(0.410)
Household size	0.021	0.095	0.035	0.104
	(0.025)	(0.092)	(0.046)	(0.112)
Father alive	0.187	0.181	0.300	-4.295***
	(0.447)	(0.857)	(0.319)	(0.296)
Health status: Good	0.040	0.188	-0.094	-0.952***
	(0.133)	(0.286)	(0.262)	(0.279)
Health status: Fair	0.012	0.754*	-0.190	0.114
	(0.162)	(0.405)	(0.275)	(0.713)
Health checkup: once	-0.160	-0.441	-0.081	0.775
	(0.175)	(0.419)	(0.362)	(0.507)
Checkup: more than twice	-0.034	-0.440	0.072	1.926***
	(0.151)	(0.402)	(0.259)	(0.700)
_cons	-1.158	-0.920	-2.104	1.971
	(1.012)	(1.854)	(1.842)	(3.591)
R^2	0.03	0.28	0.08	0.75
Number of Observations	846	240	415	175

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-Scores. Health status is self-reported and binary with base = 'excellent'. Health checkup is the number of times health professional was consulted in the last 12 months and the base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.35: Fixed Effects Results of the Impact of the Child Support Grant on Height-for-Age for Children in Tribal Authority Areas

(Data: NIDS – Wave 1, Wave 2, Wave 3. Sample: Children in Tribal Authority Areas)

Age Cohort:	Below 15 years (1)	10 – 14 years (2)	5 – 9 years (3)	1 – 4 years (4)
Child Support Grant	0.155*	0.375	0.341*	0.282
	(0.090)	(0.254)	(0.192)	(0.524)
Dummy 2010	-0.251***	-0.649***	-0.168**	-0.073
	(0.048)	(0.131)	(0.083)	(0.193)
Dummy 2012	-0.228***	-0.833***	-0.041	0.184
	(0.045)	(0.132)	(0.106)	(0.325)
Log real income	0.009	0.017	0.039	0.015
	(0.021)	(0.046)	(0.040)	(0.087)
Log real expenditure on food	0.017	0.135	-0.022	-0.067
	(0.047)	(0.103)	(0.097)	(0.245)
Household size	-0.005	0.023	-0.031	0.034
	(0.014)	(0.034)	(0.033)	(0.051)
Father alive	-0.078	-0.989***	0.047	-0.255
	(0.119)	(0.293)	(0.204)	(0.773)
Health status: Good	-0.089*	-0.038	-0.123	0.346
	(0.051)	(0.113)	(0.099)	(0.227)
Health status: Fair	-0.011	-0.171	-0.042	0.426
	(0.064)	(0.169)	(0.129)	(0.368)
Health checkup: once	-0.085	0.019	-0.044	-0.052
	(0.055)	(0.129)	(0.105)	(0.297)
Checkup: more than twice	-0.120**	-0.294**	0.036	-0.117
	(0.058)	(0.144)	(0.111)	(0.239)
_cons	-0.955***	-1.133	-0.946	-1.249
	(0.353)	(0.784)	(0.760)	(1.652)
R^2	0.02	0.10	0.02	0.03
Number of Observations	5,398	1,528	2,662	1,126

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-Scores. Health status is self-reported and binary with base = 'excellent'. Health checkup is the number of times health professional was consulted in the last 12 months and the base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.36: Fixed Effects Results of the Impact of the Child Support Grant on Weight-for-Age

(Data: NIDS – Wave 1, Wave 2, Wave 3.Dependent Variable = Weight-for-Age Z-score)

Age Cohort:	Below 15 years (1)	10 – 14 years (2)	5 – 9 years (3)	1 – 4 years (4)
Child Support Grant	0.051		0.102	0.256
	(0.068)		(0.115)	(0.238)
Dummy 2010	0.016		0.046	-0.387***
	(0.042)		(0.063)	(0.125)
Dummy 2012	-0.073*		0.032	-0.641***
	(0.041)		(0.071)	(0.211)
Log real income	0.016		-0.004	-0.078
	(0.021)		(0.030)	(0.061)
Log real expenditure on food	0.074		0.108	-0.210
	(0.046)		(0.074)	(0.153)
Household size	-0.023**		-0.013	0.003
	(0.011)		(0.022)	(0.035)
Father alive	0.088		-0.039	0.296
	(0.112)		(0.170)	(0.446)
Health status: Good	0.065		0.077	-0.013
	(0.046)		(0.069)	(0.139)
Health status: Fair	0.004		0.008	-0.309
	(0.054)		(0.082)	(0.192)
Health checkup: once	0.006		0.062	-0.075
	(0.051)		(0.072)	(0.184)
Checkup: more than twice	0.027		0.071	-0.222
	(0.048)		(0.069)	(0.167)
_cons	-0.881***		-1.078**	1.551
	(0.339)		(0.512)	(1.151)
R^2	0.01		0.01	0.06
Number of Observations	7,347		4,971	2,073

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-Scores. Health status is self-reported and binary with base = 'excellent'. Health checkup is the number of times health professional was consulted in the last 12 months and the base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.37: Fixed Effects Results of the Impact of the Child Support Grant on Weight-for-Age for Children in Urban Formal Areas

(Data: NIDS – Wave 1, Wave 2, Wave 3. Sample: Children in Urban Formal Areas)

Age Cohort:	Below 15 years (1)	10 – 14 years (2)	5 – 9 years (3)	1 – 4 years (4)
Child Support Grant	-0.021		-0.145	0.416*
	(0.107)		(0.200)	(0.243)
Dummy 2010	0.054		0.075	-0.399*
	(0.073)		(0.105)	(0.242)
Dummy 2012	-0.004		0.173	-0.423
	(0.078)		(0.106)	(0.353)
Log real income	-0.028		-0.062	0.138
	(0.048)		(0.067)	(0.101)
Log real expenditure on food	0.083		0.126	-0.088
	(0.072)		(0.092)	(0.244)
Household size	-0.015		0.018	-0.029
	(0.025)		(0.046)	(0.060)
Father alive	-0.041		-0.239	0.476
	(0.232)		(0.492)	(0.323)
Health status: Good	0.047		0.016	0.150
	(0.074)		(0.114)	(0.146)
Health status: Fair	-0.092		-0.255*	-0.507*
	(0.100)		(0.146)	(0.264)
Health checkup: once	0.123		0.131	0.114
	(0.083)		(0.119)	(0.234)
Checkup: more than twice	0.183**		0.097	0.290
	(0.086)		(0.107)	(0.266)
_cons	-0.658		-0.631	-1.283
	(0.629)		(0.746)	(1.827)
R^2	0.01		0.04	0.13
Number of Observations	2,253		1,552	619

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-Scores. Health status is self-reported and binary with base = 'excellent'. Health checkup is the number of times health professional was consulted in the last 12 months and the base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.38: Fixed Effects Results of the Impact of the Child Support Grant on Weight-for-Age for Children in Urban Informal Areas

(Data: NIDS – Wave 1, Wave 2, Wave 3. Sample: Children in Urban Informal Areas)

Age Cohort:	Below 15 years (1)	10 – 14 years (2)	5 – 9 years (3)	1 – 4 years (4)
Child Support Grant	0.208		0.228	-1.621
	(0.189)		(0.259)	(0.988)
Dummy 2010	-0.046		0.176	-0.652
	(0.186)		(0.296)	(0.477)
Dummy 2012	-0.051		0.080	0.982
	(0.189)		(0.324)	(0.790)
Log real income	0.043		0.059	-0.159
	(0.088)		(0.133)	(0.243)
Log real expenditure on food	0.179		0.016	-0.192
	(0.169)		(0.263)	(0.452)
Household size	-0.020		-0.058	0.372**
	(0.067)		(0.117)	(0.185)
Father alive	-0.072		0.622	-0.864*
	(0.371)		(0.731)	(0.497)
Health status: Good	-0.184		-0.476	-0.077
	(0.223)		(0.410)	(0.535)
Health status: Fair	-0.149		-0.149	-1.381**
	(0.256)		(0.371)	(0.625)
Health checkup: once	0.109		0.186	0.079
	(0.229)		(0.286)	(0.823)
Checkup: more than twice	0.421**		0.563**	-0.628
	(0.196)		(0.252)	(0.557)
_cons	-1.626		-1.244	2.543
	(1.230)		(1.997)	(3.369)
R^2	0.04		0.09	0.55
Number of Observations	487		336	135

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-Scores. Health status is self-reported and binary with base = 'excellent'. Health checkup is the number of times health professional was consulted in the last 12 months and the base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.39: Fixed Effects Results of the Impact of the Child Support Grant on Weight-for-Age for Children in Rural Formal Areas

(Data: NIDS – Wave 1, Wave 2, Wave 3. Sample: Children in Rural Formal Areas)

Age Cohort:	Below 15 years (1)	10 – 14 years (2)	5 – 9 years (3)	1 – 4 years (4)
Child Support Grant	-0.480**		-0.291	-0.113
	(0.215)		(0.484)	(0.578)
Dummy 2010	0.133		0.252	0.245
	(0.146)		(0.214)	(0.351)
Dummy 2012	0.333***		0.468**	-1.282**
	(0.124)		(0.229)	(0.642)
Log real income	-0.015		-0.102	0.264*
	(0.072)		(0.115)	(0.141)
Log real expenditure on food	0.043		0.174	0.456
	(0.139)		(0.210)	(0.378)
Household size	0.002		0.030	0.099
	(0.021)		(0.038)	(0.140)
Father alive	0.546		-0.146	-1.717***
	(0.342)		(0.287)	(0.372)
Health status: Good	0.073		0.210	-0.655**
	(0.145)		(0.226)	(0.292)
Health status: Fair	0.106		-0.290	2.082***
	(0.181)		(0.266)	(0.506)
Health checkup: once	0.150		0.323	1.818***
	(0.173)		(0.216)	(0.581)
Checkup: more than twice	-0.073		0.126	3.021***
	(0.175)		(0.265)	(0.837)
_cons	-1.055		-1.184	-6.210*
	(1.039)		(1.157)	(3.454)
R^2	0.06		0.13	0.68
Number of Observations	620		412	178

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-Scores. Health status is self-reported and binary with base = 'excellent'. Health checkup is the number of times health professional was consulted in the last 12 months and the base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.40: Fixed Effects Results of the Impact of the Child Support Grant on Weight-for-Age for Children in Tribal Authority Areas

(Data: NIDS – Wave 1, Wave 2, Wave 3. Sample: Children in Tribal Authority Areas)

Age Cohort:	Below 15 years (1)	10 – 14 years (2)	5 – 9 years (3)	1 – 4 years (4)
Child Support Grant	0.093		0.151	0.032
	(0.106)		(0.180)	(0.363)
Dummy 2010	0.012		0.006	-0.300*
	(0.058)		(0.088)	(0.178)
Dummy 2012	-0.154***		-0.025	-0.735**
	(0.057)		(0.102)	(0.315)
Log real income	0.038		0.037	-0.094
	(0.026)		(0.037)	(0.082)
Log real expenditure on food	0.035		0.062	-0.232
	(0.069)		(0.120)	(0.210)
Household size	-0.029*		-0.056*	-0.017
	(0.017)		(0.033)	(0.052)
Father alive	0.135		0.074	0.674
	(0.145)		(0.195)	(0.656)
Health status: Good	0.108*		0.117	0.081
	(0.065)		(0.096)	(0.205)
Health status: Fair	0.109		0.168	-0.318
	(0.075)		(0.115)	(0.289)
Health checkup: once	-0.068		-0.056	-0.148
	(0.071)		(0.104)	(0.246)
Checkup: more than twice	-0.072		-0.021	-0.417*
	(0.065)		(0.103)	(0.222)
_cons	-0.712		-0.816	1.868
	(0.496)		(0.818)	(1.523)
R^2	0.01		0.01	0.10
Number of Observations	3,987		2,671	1,141

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-Scores. Health status is self-reported and binary with base = 'excellent'. Health checkup is the number of times health professional was consulted in the last 12 months and the base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.41: Fixed Effects Results of the Impact of the Child Support Grant on Height-for-Age and Weight-for-Age by Gender

(Data: NIDS – Wave 1, Wave 2, Wave 3. Dependent Variables are Z-scores)

Dependent Variables:	Height for Age		Weight for Age	
	Girls	Boys	Girls	Boys
Child Support Grant	0.122	0.112	0.023	0.067
	(0.085)	(0.079)	(0.101)	(0.092)
Dummy 2010	-0.175***	-0.035	-0.003	0.032
	(0.047)	(0.046)	(0.057)	(0.061)
Dummy 2012	-0.160***	-0.020	-0.088	-0.061
	(0.044)	(0.044)	(0.058)	(0.059)
Log real income	-0.001	-0.016	0.029	0.004
	(0.021)	(0.023)	(0.029)	(0.029)
Log real expenditure on food	-0.010	0.013	0.075	0.073
	(0.047)	(0.043)	(0.056)	(0.072)
Household size	-0.020	0.008	-0.037**	-0.009
	(0.013)	(0.013)	(0.016)	(0.015)
Father alive	0.103	0.082	0.237	-0.060
	(0.128)	(0.121)	(0.173)	(0.142)
Health status: Good	-0.061	-0.042	0.064	0.070
	(0.050)	(0.052)	(0.064)	(0.066)
Health status: Fair	-0.015	0.041	0.033	-0.020
	(0.065)	(0.060)	(0.080)	(0.075)
Health checkup: once	0.009	-0.108**	0.065	-0.047
	(0.057)	(0.051)	(0.072)	(0.071)
Checkup: more than twice	-0.105*	-0.158***	0.037	0.017
	(0.058)	(0.055)	(0.067)	(0.068)
_cons	-0.759**	-1.080***	-1.004**	-0.759
	(0.338)	(0.340)	(0.431)	(0.522)
R^2	0.01	0.01	0.01	0.00
Number of Observations	4,939	5,221	3,560	3,787

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Dependent Variables are Z-Scores. Health status is self-reported and binary with base = 'excellent'. Health checkup is the number of times health professional was consulted in the last 12 months and the base = 'never'. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.42: Summary of Estimation Results of the Impact of the Child Support Grant on Obesity

(Data: NIDS – Wave 1, Wave 2, Wave 3. Dependent Variable = 1 if BMI z-score > 2)

	Children Aged 5 – 14 years			
	Fixed Effects	Observations	Diff-in-Differences	Observations
	(1)	(2)	(3)	(4)
Full Sample	-0.020	7,769	-0.013	2,243
	(0.016)		(0.044)	
Urban Formal Areas	-0.048*	2,523	0.060	881
	(0.027)		(0.072)	
Urban Informal Areas	0.032	516	0.259	139
	(0.069)		(0.159)	
Formal Rural Areas	-0.040	640	0.165*	203
	(0.041)		(0.098)	
Tribal Authority Areas	-0.012	4,090	-0.082	1,020
	(0.020)		(0.060)	

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Covariates used in Panel Fixed Effects are: 2010 and 2012 year dummies, log of real income, log of real expenditure on food, household size, father alive (which is binary), Health status; self-reported and binary with base = 'excellent', Health checkup – number of times health professional was consulted in the last 12 months and the base = 'never'. Covariates used in Difference-in-Differences are: 2010 and 2012 year dummies, log of real income, log of real expenditure on food, household size, father alive, household head's education, race dummies, gender dummy, child's age, health status, place of birth, health check-up. Treatment group is comprised of children from households with incomes greater than R 2 200 and less than or equal to R 4 400 who received the grant. The control group is comprised of children who did not receive the grant (both means-test eligible and ineligible). Real income = Household income less government grants; in 2008 terms. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.43: Summary of Estimation Results of the Impact of the Child Support Grant on Underweight

(Data: NIDS – Wave 1, Wave 2, Wave 3. Dependent Variable = 1 if BMI z-score <-2)

	Children Aged 5 – 14 years			
	Fixed Effects	Observations	Diff-in-Differences	Observations
	(1)	(2)	(3)	(4)
Full Sample	-0.016	7,922	-0.028	5,584
	(0.013)		(0.018)	
Urban Formal Areas	-0.025	2,575	-0.071**	1,791
	(0.025)		(0.036)	
Urban Informal Areas	-0.060**	529	-0.032	362
	(0.030)		(0.093)	
Formal Rural Areas	-0.016	655	-0.051	465
	(0.056)		(0.070)	
Tribal Authority Areas	0.011	4,153	0.000	2,963
	(0.019)		(0.019)	

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Covariates used in Panel Fixed Effects are: 2010 and 2012 year dummies, log of real income, log of real expenditure on food, household size, father alive (which is binary), Health status; self-reported and binary with base = 'excellent', Health checkup – number of times health professional was consulted in the last 12 months and the base = 'never'. Covariates used in Difference-in-Differences are: 2010 and 2012 year dummies, log of real income, log of real expenditure on food, household size, father alive, household head's education, race dummies, gender dummy, child's age, health status, place of birth, health check-up. Treatment group is comprised of children from households with incomes greater than R 2 200 and less than or equal to R 4 400 who received the grant. The control group is comprised of children who did not receive the grant (both means-test eligible and ineligible). Real income = Household income less government grants; in 2008 terms. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.

Table 5.44: Detailed Summary of Estimation Results of the Impact of the Child Support Grant on Obesity, Overweight, Normal weight and Underweight.

(Data: NIDS – Wave 1, Wave 2, Wave 3. Dependent Variable = 1 if BMI z-score > 2)

	Obesity			
	Fixed Effects	Observations	Diff-in-Differences	Observations
	(1)	(2)	(3)	(4)
Full Sample	0.036	7,922	0.069**	5,584
	(0.025)		(0.032)	
Aged 5 – 14 years	-0.020	7,769	-0.013	2,243
	(0.016)		(0.044)	

(NIDS – Wave 1, Wave 2, Wave 3. Dependent Variable = 1 if BMI z-score is between +1 and <+2)

	Overweight			
	Fixed Effects	Observations	Diff-in-Differences	Observations
	(1)	(2)	(3)	(4)
Full Sample	-0.011	10,232	-0.041*	7,006
	(0.017)		(0.023)	
Aged 5 – 14 years	0.002	7,922	-0.026	5,584
	(0.021)		(0.025)	

(Data: NIDS – Wave 1, Wave 2, Wave 3. Dependent Variable = 1 if BMI z-score is between -2 and 1)

	Normal Weight			
	Fixed Effects	Observations	Diff-in-Differences	Observations
	(1)	(2)	(3)	(4)
Full Sample	0.042**	10,232	0.077***	7,006
	(0.020)		(0.029)	
Aged 5 – 14 years	0.036	7,922	0.069**	5,584
	(0.025)		(0.032)	

(Data: NIDS – Wave 1, Wave 2, Wave 3. Dependent Variable = 1 if BMI z-score <- 2)

	Underweight			
	Fixed Effects	Observations	Diff-in-Differences	Observations
	(2)	(2)	(3)	(4)
Full Sample	-0.020*	10,232	-0.01	7,006
	(0.010)		(0.014)	
Aged 5 – 14 years	-0.016	7,922	-0.028	5,584
	(0.013)		(0.018)	

Notes: Clustered standard errors (clustered at the household level) are in parenthesis. Covariates used in Panel Fixed Effects are: 2010 and 2012 year dummies, log of real income, log of real expenditure on food, household size, father alive (which is binary), Health status; self-reported and binary with base = 'excellent', Health checkup – number of times health professional was consulted in the last 12 months and the base = 'never'. Covariates used in Difference-in-Differences are: 2010 and 2012 year dummies, log of real income, log of real expenditure on food, household size, father alive, household head's education, race dummies, gender dummy, child's age, health status, place of birth, health check-up. Treatment group is comprised of children from households with incomes greater than R 2 200 and less than or equal to R 4 400 who received the grant. The control group is comprised of children who did not receive the grant (both means-test eligible and ineligible). Real income = Household income less government grants; in 2008 terms. ***Significant at the 1 percent level **Significant at the 5 percent level *Significant at the 10 percent level.