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MODELING THE IMPACT OF AIDS
ON THE PERCEIVED VALUE OF
EDUCATION USING SURVEY DATA

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Abstract

This paper constructs and applies a simple model of how AIDS-related poor health might affect the perceived value of education, as part of a broader project on the effects of AIDS on educational decision-making in South Africa. The model itself is straightforward, but the application is fraught with problems because of the paucity of good data on key variables. The application requires using a variety of proxy variables. The perceived value of education is disaggregated into 'instrumental' and 'societal' dimensions. Controlling for demographic variables, a strong belief in future opportunities and traditional gender beliefs have a significant impact on the perceived instrumental value of education. Furthermore, household monthly income, belief in future opportunities and traditional gender beliefs have a significant impact on the perceived societal value of education. People's low life expectancy for children correlates significantly and negatively with this societal value as well, but it is important to keep in mind that South Africans subjective life expectancy for both themselves and their children is, in fact, very high. Contrary to hypotheses, this life expectancy is also not influenced by poor health, especially not in the poorest and most heavily HIV-affected, African section of the population. It is possible that better data would allow the design of better measures of health, life expectancy and values attached to education, so further research is required before the model can be tested conclusively.

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1. Introduction

More than a decade into the new, democratic South Africa, vast inequalities continue to exist among the educational outcomes of the country's children. Although enrolment figures are generally high², various studies indicate high drop-out, absenteeism and repetition rates, especially among children from previously disadvantaged Black and Coloured communities (Lam, Seekings *et al.*, 2005). In 2006, the first post-apartheid cohort of school children – i.e. who entered grade 1 in 1995 – should have reached matric (grade 12). But according to the Department of Education's statistics, the number of students writing matric in 2006 was only one-third of the number of grade 1 students twelve years earlier, and the number who passed was less than one quarter. Research into the reasons behind these inequalities in South Africa's educational outcomes has mainly been concerned with economic and objective conditions at home, in the neighbourhood and (above all) in schools (Lam, 1999). Little research has been conducted on the importance of the values and attitudes of parents or children in South Africa, despite findings from studies in both Western and less industrialised countries that there is a relationship between such values and educational outcomes (Coleman, 1966; Buchman, 2000; Francis and Archer, 2005, Galper *et al.*, 1997; Porteus *et al.*, 2000).

Research has indicated that when parents value education highly, they may be more inclined to provide support to their children's school efforts, which motivates children to do better in school (Galper *et al.*, 1997). Those who view schooling as unimportant and unnecessary for their children's (social, emotional or financial) well-being, might be less inclined to interact with their children on educational matters, or might simply decide to keep children out of school. Even when parents do not take such explicit actions, their perceived low value of education may be communicated verbally and non-verbally and could discourage children's schooling efforts (Corsaro and Rosier 1992).

Understanding the complex relationship between parents' perceived value of education and children's educational outcomes has become all the more important in the light of the HIV and AIDS pandemic. Some scholars have suggested that affected caregivers confronted with illness, death, and hence reduced (real and subjective) life expectancy³ for both themselves and their children, might no longer perceive the (positive) value of education (cf. for

² According to United Nations Development Programme (UNDP) data, the net primary enrolment ratio between 2001 and 2003 was as high as 90% (UNDP, 2003; UNDP 2005; Cf. also Jansen, Taylor, 2003).

³ I distinguish between life expectancy as measured, projected and reported by demographers and international institutions on the one hand, and people's subjective beliefs about the length of their lives on the other hand. In the remainder of the paper, I will refer to subjective life expectancy as just 'life expectancy' and specify 'real' or 'measured life expectancy' when talking about the longevity of life as measured by demographers.

example Barnett and Whiteside 2002; Bell et al. 2004; Mattes 2003) Qualitative research, however, suggests that AIDS does *not* necessarily have this effect: HIV-positive and AIDS-sick mothers attach considerable importance to their children's education (De Lannoy, 2005). This paper turns to quantitative data from a sample survey, to examine whether there is any observable relationship between AIDS and the values attached to education.

Testing the relationship between AIDS and the values attached to education is not easy. The first part of this paper reviews the existing international literature to develop a simple model of the relationship. But none of the key variables are easily measured in South Africa. Almost no one divulges their HIV status or AIDS condition in sample surveys. Measures of poor health need to be combined into indices. Reported life expectancy does not accord with what we know of the contemporary South African reality. And it is not straightforward even to measure the value(s) attached to education. The main part of this paper develops measures of health status, life expectancy, and the value of education, using data that are far from ideal. This paper should therefore be read as an exploratory study on how best to proceed in a world of incomplete and insufficient data.

2. Attitudes Towards Education: What Do We Know? How Have They Been Measured?

Although it seems generally accepted within various fields of educational research that both parental and students' values of, and attitudes toward education can have an impact on students' educational outcomes, there is no unified way of defining, measuring and interpreting this (perceived) 'value of education'. Within existing research on the topic, methodologies and results seem to differ widely, with little communication being established between, for example, the theories of social psychology and economy. This section aims to give a brief insight of the differing theories and questions used within their traditions that have attempted to measure the value of schooling. It is not this paper's intention to offer a conclusive overview of the different conceptualisations and operationalisations, but rather to illustrate the diversity of approaches and the complexity of the topic as a background to the analyses that are presented in later sections.

2.1. Investment in education as a proxy for education's value

Human Capitalist Theorists mostly conceptualise the value of education for parents as the outcome of a cost-benefit analysis in which parents weigh the (real and perceived) possible returns on education against the costs associated with children's time in school (Becker and Tomes, 1976). The possibility of obtaining a 'good job' after education, for example, is usually seen as a major incentive for parents to invest in their children's education, as it would benefit both the children and the parents (for example through remittances when they are older). It is generally assumed that: 'If the poor do not believe that the provision of public education significantly increases the chances of accessing jobs, many may not be prepared to invest heavily in children's education over a 6 to 8 year period' (Bennell, 2002: 1186), hence leading to higher drop-out rates in countries with lower employment chances. The work of human capitalist theorists such as Becker often consists solely of theoretical modelling of all those factors that can explain the human capital invested by parents in their children. His models point out that the investment in children is dependent on parental income, children's endowments, and the estimated rates of return on that investment. Empirical studies within the Human Capitalist tradition have mostly been using household survey data, or specifically collected data on education and income, and have looked at the estimated rates of return to schooling.

Resource constraint and dilution theories point to the fact that parents' decision-making on education may be influenced by resource constraints and the need to divide these resources over a larger number of people and sibling children. The value parents attach to schooling is thus influenced by the current rather than the future needs of children and parents, and may for example be determined by the fact that young girls are needed to perform household chores (see, for example, Fuller *et al.*, 1995; Lockheed *et al.*, 1989). Again, mostly general survey data has been used to test the theories, and little effort seems to be put into the conceptualisation of the value itself, or into trying to gain a deeper understanding of that investment in itself. A study that has, however, looked into 'parental attitudes and behaviour toward their responsibility in assisting children' financially is that of Steelman and Powell (1991: 1507). The study focuses more on understanding parents' perceived responsibility in education, than understanding the value of education, which offered an interesting viewpoint to my own study. The aim and questions of the research are described in table 1.

2.2. Motivational research: The value of education as a multi dimensional construct

Developmental, educational and social psychology researchers have taken a more diversified approach towards conceptualising and measuring parental values and beliefs. In motivational studies, the value of education (or of certain courses in school) becomes one element in models that, on the one hand, regard young people's school engagement, performance and persistence as connected to beliefs about the purpose, meaning and value of schooling in general and of a specific task or course, and about their capability to perform well. (Chavous *et al.*, 2003). On the other hand, these models assume that young people's values are influenced by (their perception of their) parents' beliefs and attitudes regarding the value and utility of schooling, and their expectations for the children (Eccles and Wigfield, 2002; Chavous *et al.*, 2003; Noack, 2004). Parents' views on school and education 'may affect children's views either directly or through such indirect processes as parents' engagement in cultural or educational activities, which are observed by children and could affect their attitudes and beliefs.' (Noack, 2004:714). In Eccles' well-established and tested 'expectancy-value' model, individuals' 'task value' can further be influenced by cultural milieu and unique historical events (Eccles and Wigfield, 2002). It thereby also takes cultural norms, religion and possibly traditional gender-roles into account.

Motivational research defines 'task value' as a multi-dimensional concept. Eccles, for example, distinguishes between attainment value, intrinsic value, utility value and cost:

- 'attainment value is defined as the personal importance of doing well on a task...;
- intrinsic value is the enjoyment the individual gets from performing the activity or the subjective interest the individual has in the subject...;
- utility value is determined by how well a task relates to current or future goals, independent of whether or not an individual is interested in the task for its own sake...;
- cost is seen as the negative aspects of engaging in a task' (Eccles and Wigfield, 2002: 119-120).

There is a very substantial body of motivational and developmental research that uses these models for looking at inequalities in schooling outcomes between the different population groups in the United States, or at schooling outcomes of immigrant children in both the US or European countries. The focus in US studies is very often on lower achievement of African American or Hispanic American children, but some also focus on high achievement among other subgroups in the US or Europe. The various factors that could possibly influence

children's different aspects of *task value* are thereby analysed, parental values being of them. An overview of some of the relevant studies and questions used is given in table 1.

2.3. Other educational and value research: No unified approach

A third category of studies looking into the value of education is an amalgam of research that sometimes regards the value of education only as an independent variable, or that, on the other hand, places it in models where it becomes both dependent and independent. Some studies have used a qualitative approach and others a purely quantitative approach. Within the pool of quantitative work, some have included only few questions measuring the importance of education, others included batteries probing the perceived value of education. Very little longitudinal data that could potentially place people's attitudes towards education within a historic and changing socio-economic context seems available.

I had expected to find at least a small battery of questions in the large, longitudinal and international World Value Survey, but the only question tapping some value dimension of education is one that relates to gender equality in tertiary education. Most South Africans disagreed with the statement that *University is more important for boys than girls*.

UNESCO's 'Monitoring Learner Assessment' studies (MLA) started in 1997 and aims at 'obtaining information on the effectiveness of basic education provision in terms of actual learning achievement' (Human Sciences Research Council, 2000: 5). The study has been running surveys in over 50 countries worldwide, administering questionnaires with parents, teachers, school heads and learners to gather information on all possible factors that could influence learner performance. The MLA developed, among others, a 'parents' opinion about education index' and found that parents in all the survey countries⁴ 'highly prize the educational experience that their children receive'. When running multivariate regressions on learner achievement, however, this parental attitude towards education was not retained in the final model (*ibid*), so no conclusions are available that could be compared to the results of this paper.

In South Africa, Kivilu and Morrow (2006) used data collected by the 2003 South African Social Attitudes Survey (SASAS) to assess 'what South Africans

⁴ Survey countries in the 1999 MLA were: Botswana, Madagascar, Malawi, Mali, Morocco, Mauritius, Niger, Senegal, Tunisia, Uganda and Zambia.

think about education'. The researchers analysed 'level of commitment to schooling', 'attitudes on whether all school should contain children of different races', and perceived aims of education. The researchers concluded on a 'substantial reservoir of educational good sense' among South Africans from different population groups, regions, or socio-economic or educational level. Across population groups, regions, age groups, levels of education and income, the vast majority of all respondents stated education should be compulsory for all children up to and including grade 12 (81%), believed that schools should be racially mixed (85%), and agreed on the aims of education probed (no percentage given). There was also a general disagreement to the statement that 'educating girls to a higher level is of no use' (87%). Regression analyses did indicate a significant effect of population group on the support for compulsory education, with both Black African and Coloured people less likely to support compulsory education for all learners. Population group, personal monthly income, age category and highest level of education attained were significant indicators of respondents' level of support for mixed race schools (Kivilu, Morrow 2006).

Buchmann (2000) used household survey data of nearly 600 Kenyan households to examine 'the impact of family background and structures, division of household labour, and parental perceptions on children's (aged 13 to 18) educational participation' (Buchman, 2000: 2). The researcher found that parents' expectations for future financial help from their children significantly increases children's chances of enrolment. However, those children whose mothers expressed doubt about the value of education were significantly less likely to be enrolled in school: 'parents who feel that education is not worth the cost are less committed to educating their children'. Further, perceptions of labour market discrimination against women were significant determinants of girls' enrolment in school. However, no analyses were made of what might be determining factors of these parental perceptions (*ibid*: 2).

In the United States, Mickelson has taken a more theoretical approach to the impact of educational value on children's educational outcomes, as he found, what he calls 'an attitude achievement paradox': an inconsistency between the seemingly high value of education and low achievement of Black pupils in the United States (Mickelson, 1990, citing the work of Coleman, Patchen, and Sleeter and Grant). In his own studies, Mickelson found that the Black American population consistently expressed a strong belief in education: it is seen as 'one of the few institutions that could lift them from poverty and oppression', yet this conviction coincides frequently with poor educational performance among that same group (Mickelson, 1990). He explains this gap by the fact that attitudes towards education have, very often, only been measured as one-dimensional concepts, whereas he conceptualises them as multi-

dimensional. He distinguishes between what he calls abstract attitudes, reflecting the dominant ideologies of a society, and concrete ones, rooted in people's life experiences. Abstract values, according to Mickelson's theory, do not influence achievement behaviour, concrete ones do. So, whereas the dominant protestant ideology in the US might describe education as 'a vehicle for success and upward mobility', and thereby create the general belief that education is 'the key to success in the future', more concrete attitudes would be based on people's 'perception and understanding of how adults who are significant in their lives receive more equitable or less equitable wages, jobs and promotions relative to their educational credentials... Concrete attitudes reveal students' perceptions of their probable returns on education from the opportunity structure. Because concrete attitudes reflect the material world in which students live, students' educational achievement is informed primarily by this set of beliefs.' (Mickelson, 1990: 46-47). Concrete values, still according to Mickelson, can in fact only be measured by questions containing specific reference to 'particular social contexts of belief and action' (*ibid*: 47).

Findings from qualitative studies, however, seem to contradict Mickelson's theory. My own earlier qualitative research with African mothers from townships around Cape Town has indicated that caregivers⁵ do express their belief in education in what Mickelson would call abstract terms. Most of the women interviewed would, for example, motivate their strong belief in education by saying that 'there is no other way out', and even that 'there is no future without education', but when probed further on the exact meaning of these expressions, would give a very concrete interpretation: they have their own, very tangible experience of not having had an education, or higher levels of education, and blame the fact that they now daily have to try and survive the extreme levels of poverty to that lack of education. They see their lack of skills as a direct consequence of their lack of education, and as the direct cause of their inability to apply for, or find, a well-paid, interesting job that would allow them to build a better life for both themselves and their children. Thus, they seem to turn the attitude theory around and base their concrete value on their own negative experiences: no education leads to no opportunities, no means to escape poverty. Asked whether they had examples in their direct environment of people with an education who had had an education and now do have a (better) job, the African mothers in my sample referred to teachers, nurses, security guards, people working at the police station, etc. Different from Mickelson's findings, education, to all of the women interviewed, thus seems to have a very concrete,

⁵ Qualitative research was done with 15 HIV-positive and 15 negative mothers in order to gain an understanding of 1) what exactly that value of education entails for caregivers in South Africa, and 2) a possible difference between the way in which HIV-positive mothers value education compared to HIV-negative ones.

instrumental value⁶ that is sometimes summarized in the at first sight abstract statement that ‘without education, there can be no future’.

Strikingly similar findings came from research into ‘British-Chinese pupils’ and parents’ constructions of the value of education’, for example, Francis and Archer (2005) found parents and students expressing very high, seemingly abstract values of education, and performing extremely well in school, despite higher unemployment levels, lower graduate earnings and higher levels of discrimination among Chinese graduates, compared to their White peers. In their qualitative study, Francis and Archer ‘investigated the extent to which British-Chinese pupils and their parents value education and the rationale behind their constructions in this regard’ (*ibid*: 89). The researchers interviewed 80 British-Chinese students aged 14 to 16 years old, and 30 parents, all from different socio-economic backgrounds. Respondents were asked the general statement ‘Is education important?’, with both parents and students agreeing unanimously. The majority of the students constructed an instrumental value of education, considering it a credential for employment, and the way to ‘a good future’. Less than half of the parents, however, referred the importance of education as a means to find a good job, but more parents than pupils seemed to place an intrinsic value upon schooling. Strongly resonating my own findings, is the researchers’ remark that the ‘constructed value of education..., set against their own contexts of being deprived of education, and the wish to provide their children with educational opportunities they never had, featured strongly in many of the parent interviews’ (*ibid*: 98).

⁶ For a more complete discussion of the different dimensions of the value, cf. De Lannoy, 2005.

Table 1: Existing studies, aims and research questions

<i>Existing studies: aims and research questions</i>	<i>Sample</i>	<i>Questions trying to measure 'value of education'</i>	<i>Findings</i>
1. Proxies for value			
<p>Steelman and Powell (1991): 'to examine parental investment in higher education in terms of (amongst others): whether parents place primary responsibility for financing a college education on themselves, their children or the government; and how much parents have saved for their child's education.'</p> <p>Independent variables considered as having a potential impact on parental willingness to invest are listed below.</p> <ul style="list-style-type: none"> • Parents' characteristics such as level of education, gender, family income, and aspiration for child. • Students' characteristics such as gender and academic ability. • Number of children in the household. 	<p>2,327 of high school students' parents, selected from the existing sample of the Parent Survey of the High School and Beyond (US).</p>	<p>Question focusing on perceived financial responsibility:</p> <ul style="list-style-type: none"> • Who should have the main responsibility for the cost of education beyond high school? <p>Response options: the student, the parents, the state or federal government.</p> <p>Questions focusing on parental saving behaviour:</p> <ul style="list-style-type: none"> • Did you or your spouse do anything specific in order to have some money for this child's education after high school? • About how much money did you set aside for your son's/daughter's future educational needs? <p>Question probing family's willingness to go into debt for the children's schooling:</p> <ul style="list-style-type: none"> • The family is not willing to go into debt for schooling. 	<p>No one sees government as more <u>responsible</u> for funding children's schooling than parents, however the following points should be considered.</p> <ul style="list-style-type: none"> • As the number of children in the household increase, parents' feeling of responsibility for funding education decreases. • Increased parental finances correlates with increased feeling of parental responsibility for funding. • Single parents and parents with a lower income and lower levels of education are more likely to assign responsibility to the government. • Parental willingness to go into <u>debt</u> for their children's education is positively influenced by income, level of education, being married, and having higher aspirations for the children's education; Parents whose children have entered college are more willing to go into debt for male than for female children, and for children whose test scores or grades are too low to gain scholarship support. • Parental <u>savings</u> were strongly and positively related with parental education, educational aspirations for the children and familial income, but negatively related with being a single parent and having more children in the household. • Parental willingness to invest in children's education was significantly and positively related to having received financial assistance from their own parents.

2. Motivational Research			
<p>Noack (2004): ‘to examine several direct and indirect pathways by which parents influence the value that pre-adolescent students attach to school education’.</p> <p>Parental value is thus seen as an independent variable for students’ values and thereby for educational outcomes of the children. No analysis is made of what might be factors influencing that parental value itself.</p>	<p>355 students (mean age 10.6 years) and their mothers (mean age 36.5), students selected through 15 ‘high track schools’ and 15 ‘low track schools’ in the state Thüringen, Germany.</p>	<p>A number of ‘Value of domain questions’ were asked, whereby the domain can either be education in general, or a specific course like mathematics. Most questions had response options with 4 point Likert scales and were used in both the parental and the student questionnaires:</p> <p>Importance aspect of value:</p> <ul style="list-style-type: none"> ▪ This domain is important in everyone’s life. ▪ Everyone should be good in this domain. ▪ This domain is not very important. <p>Utility aspect of value:</p> <ul style="list-style-type: none"> ▪ Being good in this domain will be important to earn a lot of money in the future. ▪ This domain is very important for one’s future education. ▪ The domain is important to find a job later on. ▪ Others admire those who are good in this domain. ▪ As compared to other domains, this domain is not very useful. <p>Intrinsic aspect of value:</p> <ul style="list-style-type: none"> ▪ In general, I think this domain is very boring. ▪ I like this domain very much. ▪ This domain is fun. 	<ul style="list-style-type: none"> ▪ Strongest predictor of students’ own evaluation of school education is their perception of maternal values. Actual values reported by the mother, however, did differ from the children’s perceptions of these values. ▪ Maternal behaviour, i.e. joint leisure activities of students and mothers, add to the explanation of students’ values.

<p>Sirin and Sirin (2004): ‘attempt to explore the academic experiences of middle-class African American students... exploring individual factors (school engagement, educational expectations, and self-esteem) and parental factors (parent-adolescent relationships and parental educational values) that may contribute to academic performance’.</p> <p>Parental values are thus only examined as independent variables for students’ academic characteristics.</p>	<p>336 African American students (mean age 15.36) and their biological mothers, using data collected through the ADD Health survey. Students were selected through 80 high schools and 52 middle schools in the United States.</p>	<p>Questions on parental educational values:</p> <ul style="list-style-type: none"> • If (name) could be one of the following in high school, which would be most important to you? <p>1= a brilliant student; 2=a leader in school activities; 3= an athletic star; 4= the most popular.</p> <ul style="list-style-type: none"> • How disappointed would you be if (name) did not graduate from college? <p>1=very disappointed; 2=disappointed; 3=not disappointed</p>	<ul style="list-style-type: none"> • Parent educational values were found to be significantly related to educational expectations and academic performance, but not to school engagement and self-esteem.
<p>Chavous et al. (2003): The study does not look at parental values directly, but at wider group memberships. It investigates how these can influence students’ own beliefs, expectations and schooling outcomes, and tests various dimensions of the value of education for young people.</p>	<p>606 12th grade African American learners (average age 17.51 years), selected from 4 public high schools in a Midwestern State in the United States.</p>	<p><u>School attachment questions, e.g.:</u></p> <ul style="list-style-type: none"> • I do extra work on my own in class. • I like school. • Most mornings, I look forward to going to school. <p>Using 4 point likert scales with 1 <i>strongly disagree</i> and 4 <i>strongly agree</i></p> <p><u>School relevance, e.g.:</u></p> <ul style="list-style-type: none"> • How often do you feel school work is useful? • How important do you think the things you are learning in school will be in your later life? <p><u>School efficacy measure, e.g.:</u></p> <ul style="list-style-type: none"> • I can do even the hardest school work if I try. 	<ul style="list-style-type: none"> • Those not in school had lower race centrality and private regard than those in school. • Public regard was positively related to school attachment and school relevance, and all four educational beliefs variables were positively related to private regard. • Racial centrality, school relevance and school efficacy are positively related. • ‘Alienated’ groups showed less interest in school. • ‘Idealized’ group indicated higher school relevance.

		<ul style="list-style-type: none"> Even if the work in school is hard, I can learn it <p>Using 5 point likert scales with 1 <i>not true</i> and 5 <i>very true</i>.</p> <p><u>School importance, e.g.:</u></p> <ul style="list-style-type: none"> I think being successful in school is important. Going to school will help me reach my goals <p>Using 5 point likert scales with 1 <i>not true</i> and 5 <i>very true</i>.</p>	
<p>Ibanez et al. (2004): Examine whether associations between perceived school experiences and achievement motivation vary by language acculturation and generational status</p>	<p>129 immigrant and US born Latino adolescents selected from a public high school in Atlanta, US.</p>	<p>Particular questions on importance of schooling for future success, e.g.:</p> <ul style="list-style-type: none"> I have to do well in school if I want to be a success in life <p>Using a 4 point likert scale, with 1= not at all true, and 4= very true <i>No reference to how parental belief about importance of education is measured.</i></p>	<ul style="list-style-type: none"> Parent involvement is positively related to expectations and importance of schooling Findings suggest that parents' belief that school is important for success is critical in order to pass those beliefs on to their children (and parent involvement may provide the concrete form of support that is needed for a youth to believe they can actually achieve their goals).
<p>Eccles (1982; 1983): 'assess the impact of parents on children's achievement self-concept and related beliefs... by using extensive questionnaire measuring attitudes and beliefs regarding mathematics achievement'</p> <p>Parents' attitudes were analysed both as dependent and</p>	<p>Volunteering children from 22 fifth- through to eleventh-grade classrooms from a small Midwestern city in the US.</p>	<p>The parent's questionnaire probed:</p> <p>Parents' perceptions of their own experiences in math and their own attitudes regarding maths, e.g.:</p> <ul style="list-style-type: none"> In general, how good are you at math? (1= not at all good, 7= very good). <p>Parents' beliefs about their children's attitudes toward math, e.g.:</p> <ul style="list-style-type: none"> My child finds math... (1= very easy, 7= 	<ul style="list-style-type: none"> Child's gender has a significant impact on parents' perceptions of their children's math ability but also of the relative importance of math and other high school courses: parents of sons compared to those of daughters e.g. felt that maths was more important than any other subject for their child. Children's self-perceptions, expectancies and perceptions of task difficulty were consistently related to their perceptions of their parents' beliefs and expectancies and parents' actual

independent variables.		<p>very hard).</p> <p>Parents' beliefs about their children's math ability and experiences, e.g.:</p> <ul style="list-style-type: none"> ▪ In general I believe that my child is... (1= not at all good at math, 7= very good at math). ▪ How much will your child have to try in order to do well in future math courses? (1= a little, 7= a lot). 	<p>estimates of children's abilities.</p> <ul style="list-style-type: none"> ▪ 'Children's intention to take more math was directly influenced by students' perceptions of the value of maths' (1983:109). One's perception of the value of an activity is more important in determining one's decision to engage in that activity. ▪ 'Children's plans, future expectancies, current expectancies, and perceptions of the importance and value of math were positively related to measures of their perceptions of their parents' beliefs and expectancies...' (1983: 129).
3. A variety of measures for values of education			
<p>Mickelson (1990): the aim of the study was to explore the social context of the academic achievement of Black American students, especially the paradox of 'consistently positive attitudes towards education, coupled with frequently poor academic achievement'. Again, this study does not look at parental value of education, but the distinction between concrete and abstract values can possibly prove important for later analyses with South African data.</p>	<p>1,193 high school seniors from different class and racial backgrounds, selected from 8 public high schools in the Los Angeles Area in the United States.</p>	<p><u>Statements tapping abstract attitudes:</u></p> <ul style="list-style-type: none"> ▪ Education is the key to success in the future. ▪ If everyone in America gets a good education, we can end poverty. ▪ Achievement and effort in school lead to job success later on. ▪ The way for poor people to become middle class is for them to get a good education. ▪ School success is not necessarily a clear path to a better life. ▪ Getting a good education is a practical road to success for a young black (white) man (woman) like me. ▪ Young white (black) women (men) like me have a chance of making it if we do well in school. ▪ Education really pays off in the future for young black (white) men (women) like me. 	<ul style="list-style-type: none"> ▪ Findings show that all students hold two both abstract and concrete sets of attitudes towards education, the latter reflecting 'the diverse empirical realities that people experience with respect to returns on education from the opportunity structure'. 'The results demonstrate that academic achievement is linked students' accurate assessments of the returns that their education is likely to bring them s they make the transition to adulthood.'

		<p><u>Concrete attitudes:</u></p> <ul style="list-style-type: none"> ▪ Based on their experiences, my parents say people like us are not always paid or promoted according to our education. ▪ All I need to learn for my future is to read, write and make change. ▪ Although my parents tell me to get a good education in order to get a good job, they face barriers to job success. ▪ When our teachers give us homework, my friends never think of doing it. ▪ People in my family haven't been treated fairly at work, no matter how much education they have. ▪ Studying in school rarely pays off later with good jobs. <p>(Two groups statements identified through factor analysis as tapping 2 different types of attitudes).</p>	
<p>Pillay <i>et al.</i> (2006): South African Social Attitudes Study, probing, amongst others, South African's 'commitment to education'.</p>		<ul style="list-style-type: none"> ▪ Up to what level do you believe it should be compulsory for all learners to attend school? <p>6 response options: up to including grade 3 – grade 12; not compulsory and don't know.</p> <p>Questions on integration at school level:</p> <ul style="list-style-type: none"> ▪ All schools should contain children of different races. ▪ All schools should contain children of different languages. ▪ Children of different religions or of no religion, should be educated separately. ▪ Girls and boys should be educated 	<ul style="list-style-type: none"> ▪ A vast majority of all respondents stated education should be compulsory for all children up to and including grade 12 (81%), believed that schools should be racially mixed (85%), and agreed on the aims of education probed (no percentage given). There was also a general disagreement to the statement that 'educating girls to a higher level is of no use' (87%). ▪ Regression analyses indicated a significant effect of population group on the support for compulsory education, with both Black African and Coloured people less likely to support compulsory education for all learners. Population group, personal monthly income, age category and highest level of education

		<p>separately.</p> <ul style="list-style-type: none"> The children of the economically well-off and the poor should be educated together. <p>Questions probing the perceived aim of education:</p> <ul style="list-style-type: none"> To improve the child's chances in the search for a good job. To enable the child to think critically and independently. To keep children off the streets and out of harm's way. To help children to become better citizens of South Africa. To help children to <i>get along</i> with each other, however different their backgrounds may be. <p>Questions probing gender stereotypes in education:</p> <ul style="list-style-type: none"> Educating girls to a high level is of no use. Girls should be educated so that they can operate on equal terms with boys in the modern world. <p>All of these using 6 point Likert scale, with 1= strongly agree, 5=strongly disagree, and 6= don't know.</p>	<p>attained were significant indicators of respondents' level of support for mixed race schools.</p>
<p>UNESCO's MLA: to obtain 'information on the effectiveness of basic education provision in terms of actual learning achievement'. The MLA contained a set of</p>	<p>Questionnaires administered with parents, teachers, school heads and learners in over 50 countries worldwide.</p>	<p>Questions making up the MLA's 'parents opinion about education' index:</p> <ul style="list-style-type: none"> The school provides good education for my child. If I won a lot of money, I would still keep my child in school. 	<ul style="list-style-type: none"> Parents in all the surveys rated the educational experience that their children received very highly.

questions measuring parents' opinion about education that were used to build an index, but the variable was not retained in analyses on learner achievement		<ul style="list-style-type: none"> Spending money on education is a good investment. <p>Positive responses were assigned a value of 1, thereby creating an index that ranged from 0 to 3 with scores closer to 3 indicating a strong parental attitude towards education.</p>	
<p>Buchmann (2000): 'to examine the impact of family background and structures, division of household labour, and parental perceptions on children's educational outcomes'.</p> <p>Parental value of education was used as an independent variable in the equation.</p>	Household Survey Data of nearly 600 Kenyan households.	<p>Questions measuring:</p> <ul style="list-style-type: none"> The expectation to find financial help in parents' old age. A mother's belief that education is not worth the money it costs, or is only worth it if the child will get a job. A mother's belief that job opportunities are worse for women than for men with a similar level of education. A mother's belief that boys are generally smarter than girls. 	<ul style="list-style-type: none"> Parents' expectations for future financial help from their children significantly increases children's chances to enrolment. Those children whose mothers expressed doubt about the value of education were significantly less likely to be enrolled in school. Perceptions of labour-market discrimination against women were significant determinants of girls' enrolment in school.
<p>Francis and Archer (2005): qualitative study that 'investigated the extent to which British-Chinese pupils and their parents value education and the rationale behind their constructions in this regard'.</p>	80 British-Chinese students aged 14 to 16 years old, and 30 parents, all from different socio-economic backgrounds.	In-depth interviews based on semi-structured questionnaires. The question 'is education important?' and why or why not, was used to probe the construction of a 'value of education'.	<ul style="list-style-type: none"> Parents and students expressing very high, seemingly abstract values of education, and performing extremely well in school, despite higher unemployment levels, lower graduate earnings and higher levels of discrimination among Chinese graduates, compared to their White peers. The majority of the students constructed an instrumental value of education, considering it a credential for employment, and the way to 'a good future'. Less than half of the parents, however, referred the importance of education as a means to find a good job; parents rather constructed an intrinsic value of schooling.
<p>Porteus et al. (2000) : the study analyses 'the factors underlying</p>	93 'out of school' children between the ages of 5 and 17.	In-depth interviews based on semi-structured questionnaires 'aiming to explore specific	The fourth most common factor undermining children's chances to be in school was what the

<p>school non-attendance in three poor, marginalised urban communities under the jurisdiction of the Gauteng Department of Education in South Africa’.</p>		<p>issues within the personal, scholastic, social and socio-economic domains, which might relate to the child’s non-attendance at school’.</p>	<p>researchers called ‘Lack of family stability and support’, i.e. for example lack of a consistent caregiver, but also the family failing to support or undermining children’s school attendance.</p>
<p>World Value Survey (2001): ‘a worldwide investigation of sociocultural and political change’. The WVS started in 1981, 4 waves of the survey have since been completed’.</p>	<p>A nationally representative sample of at least 1000 people in more than 80 societies.</p>	<p>One education- related question, probing gender stereotyping:</p> <ul style="list-style-type: none"> • University is more important for a boy than for a girl. <p>Using a 5-point Likert scale where 1=<i>agree strongly</i> and 4=<i>strongly disagree</i>, 5=<i>don’t know</i></p>	<p>The majority of South Africans strongly disagree (49%) or disagree (30.1%), but still about 19% agree or strongly agree with the statement</p>

3. Developing a Model

The existing literature points to the influence of parental value of education on children's educational outcomes. That influence can materialise through many different pathways, one of which is parents' decision-making with regards to their children's schooling, but also through their general and motivational behaviour, and the interaction with their children, that in turn might influence the children's own view on education. Parental value in itself can be influenced by a number of different demographic and background factors, but also, in the light of the possible impact of HIV and AIDS, by parents' health and their perceived life expectancy for both themselves and their children. The conceptual model presented in figure 1 summarises and outlines the major aspects of influence on parental values.

Ideally, in order to provide an in-depth study of the way in which the perceived value of education has been shaped throughout South Africa's past and present, I would have followed people's ideals and values over an extensive period of time, covering at least part of the apartheid era and the present time of post-apartheid democratisation. Such rich panel data, combined with longitudinal qualitative research to gain more in-depth knowledge, would have allowed me to investigate how the shift from a strictly state-controlled approach to a democratised approach to education and employment have shaped and possibly altered the different population groups' values, and their belief in education. As such data are, unfortunately, not available, I have looked for more practical alternatives that would at least allow me to gather indicative knowledge of all of the above. For this paper, data collected by the 2005 round of the Cape Area Study, and material from in-depth interviews (with mainly HIV-positive mothers) have been used.

The 2005 round of the Cape Area Study covered various 'social, economic, political and demographic aspects of life in contemporary Cape Town', and was designed to gather further insight into aspects of inequality and diversity in the city – as such, the questionnaire also contained questions on education and factors that could possibly impact on educational values and decision-making: the questionnaire contained specific questions on attitudes to life, life expectancy, subjective norms, etc. The household roster gathered information on, among others, household monthly income, household structure and level of education achieved. A health roster was also included, by means of which respondents were asked to describe all household members' health. Interviews were completed with one person aged eighteen or older in a total of 1205 households. After data cleaning, data of 1195 respondents became available for analysis.

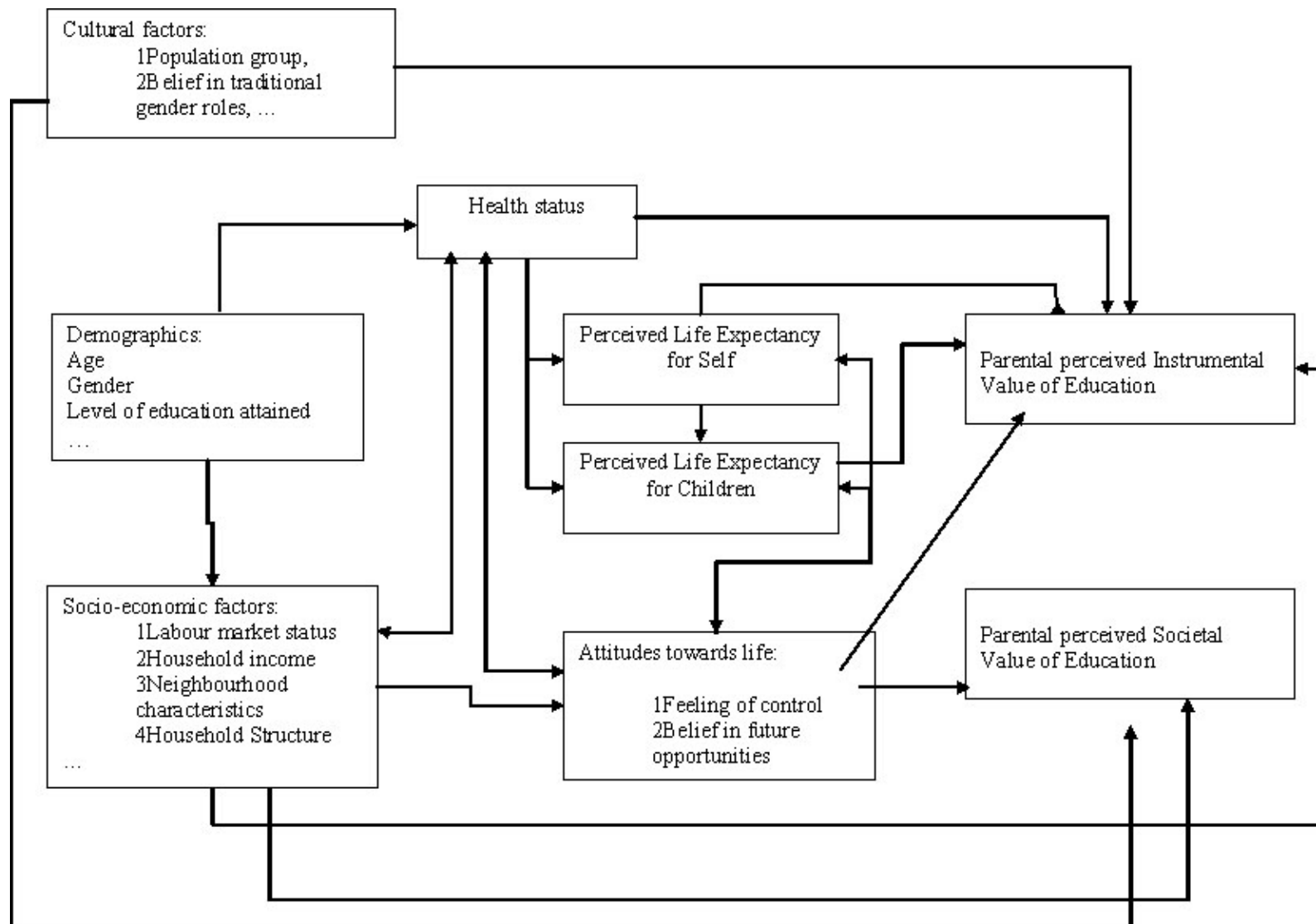


Figure 1: Model of possible factors influencing parental values of education

3.1. Breaking down the perceived value of education in South Africa: What could be the determining factors?

The following independent variables are used in regression analyses:

- **Population group**⁷: during the period of Apartheid, the provision of education and the level of mobility in the various sectors of economy that could be reached by members of the different population groups, were very much state controlled. Black and Coloured South Africans had access only to lower levels of education. I expect people's attitudes towards schooling to have been shaped by both the country's past dominant view on racial segregation, and the current ideal of a non-racial society.
- **Age**: related to South Africa's socio-political and historical context, it is not inconceivable that older people may have constructed a different value of education than the one that might be present among younger generations.
- **Gender**: education-related research has indicated that children residing in households headed by women are more likely to be in school than those in male-headed households. It has been suggested that female household heads are most likely to fulfill their traditional role of caregiver, thus trying harder to enable children to attend school (Case and Ardington, 2004). It will be interesting to see whether there is indeed a difference between the values held by women and men.
- **Monthly household income**: Monthly household income has frequently been identified as one of the influential factors on inequality in the schooling outcomes of the different population groups. I assume income to also have its impact on the perceived value of education, but exactly how that influence will work is unclear: low-income earners might place higher values on education, as they would see schooling as a way out of their poverty; a number of high-income earners on the other hand, have most probably had the concrete experience of higher education leading to better jobs and higher incomes.

⁷ We have looked at race based on question F5 'How were you classified under the apartheid system?', but only for fairly large groups, and for those respondents who did classify themselves. Thus, we left out the Indian category, as n=5 only and the answers capture as 'refused' (n=10) and 'don't know' (n=13).

- **Employment:** unemployment in South Africa is still very high (depending on the sources consulted, rates range from about 26% to as high as 40%), and is mostly found among those with no or low levels of education. Indeed, higher levels of education are found to lead to higher chances of becoming employed, and the returns to schooling increase with each year of schooling attained (Anderson *et al.*, 2001). Unemployment rates are still very high among young people (47% to 60% among young adults aged 15 to 24), and numbers still show large racial disparities. Unemployment among Black African youth aged 15 to 30, is still at 64%, compared to 14% among White young adults of the same age (Mlatsheni, 2006). Some researchers have therefore pointed at the possibility of the growing idea – especially among younger people – that ‘education would not necessarily improve their chances of finding employment’ (Vally, in Irinnews, 2006). We have no means of measuring how unemployment in the wider society affects people’s perceived value of education, but one’s own employment status can definitely be taken into account in the final analyses.

- **Level of education attained:** Various studies have indicated that parents’ level of education can influence children’s educational outcomes, through pathways such as the presence of increased opportunities, higher levels interaction with children (through, for example, helping them with their homework), and ‘the transmission of parental beliefs and attitudes concerning the value and utility of education’ (Noack, 2004: 714). As with income, I hypothesise that people’s concrete, or instrumental value of education is indeed based on their immediate experiences, i.e also on their own level of education achieved.

- **Neighbourhood characteristics:** neighbourhood factors have been shown to influence young adults’ educational outcomes: it is believed that communities with less socio-economic resources may be less able to create a favourable learning environment for young people (cf. Lam, 1999; Lam et al. 2006). One factor that might increase the difficulty of creating a stimulating learning environment, is the level of crime in a community. I assume it is not inconceivable that neighbourhood problems and safety also have an impact on the way in which people value of education: school might be one place where children are being kept away from the crime in the streets, for example. Therefore, a variable *unsafe* was created on the basis of various questions in CAS that probe neighbourhood safety. It was coded 1 for areas that were considered unsafe to walk in during the day and at night, and that frequently had to deal with problems of theft or gangs.

- **Household structure:** household structure is often taken into account when analysing factors of influence on children's educational outcome. The resource dilution theory holds that the fact that resources have to be divided between more household members in larger households, influences parents' educational decision-making. I was therefore wondering whether a larger size of household might also have an impact on the way in which people value education.

- **Attitudes towards life:**

- o **Feeling of control in life:** studies by Coleman (1990) and Mickelson (1990) have indicated that people who have a larger feeling of control over their lives gain better educational results. It could be hypothesised that those people who feel more in control of their life, feel that gaining higher education will get them further in life. CAS contained a rather general question: *how much control do you feel you have over what happens in your life?*, the results of which have been used to create a variable *high_control*, coded 1 when respondents felt *totally in control* (44%).
- o **Belief in future opportunities:** it may also be hypothesised that people who have a more positive belief in their future opportunities attach a higher value to education. CAS asked people: *Do you think that in future, people like you will face good opportunities, limited opportunities, or no opportunities?* A binary variable *high_belief_future* was created, coded 1 for respondents who believed they would have 'good' opportunities (51%).

Respondents were asked the same question regarding their children's future opportunities: *Do you think that in future, your children or the children of your friends will face good opportunities, limited opportunities or no opportunities?* The newly created binary variable *high_belief_future_kids* coded 1 expresses the belief that children will face 'good' opportunities (62%).

- **Subjective norms:**

- o **Gender beliefs:** if parents or caretakers hold the belief that a woman's place is in the house, they might be less inclined to invest in their daughters' education. CAS asked respondents how strongly they agreed with the statement *A woman's place is in the house*. A

variable *traditional* was created and coded 1 for those who answered *strongly agree* (22%) or *agree* (23%).

- **Expectation of reciprocity of care:** parents who expect their children to take care of them when they become old or ill, might feel a higher need to invest in the children's education, as that investment will later not only benefit the children, but also themselves. We asked CAS respondents: *Thinking ahead to when you are aged 70, what do you think will be your most important source of income?* A new binary variable *reciprocity* was coded 1 for those instances where *support from children* was given as an answer (8%).
- **Health and perceived life expectancy:** it has been suggested that levels of apathy among people affected by HIV and AIDS may rise, possibly leading them to believe that education is no longer worth the investment of their limited time and energy (see for example Barnett and Whiteside, 2002; Bell *et al.*, 2004). CAS offered the opportunity to develop a health measure and a construct of perceived life expectancy that can be used in the later regression analyses on the perceived value of education. As both the health measure and the life expectancy variable are new constructs based on rather experimental batteries of question, this paper will first go into more detail on how exactly these measures have been constructed and, in order to later fully understand the influence on the perceived value of education, what factors are of influence on both health and perceived life expectancy.

3.2. Developing measures of health

Constructing composite measures of health and, especially, HIV/AIDS-related health, is no simple task. There is no shortage of data, but deriving a useful measure from these data is a challenge.

Health indicator data and HIV prevalence data in South Africa are available from various different sources. Some are based on medical examinations of respondents: the Department of Health's 'National HIV and Syphilis Seroprevalence Survey in South Africa' (2004) analyses antenatal clinic data on HIV prevalence among pregnant women and on the basis thereof models prevalence rates in the whole of the South African population. The 2002 HIV/AIDS survey run by the Nelson Mandela Foundation and the Human Sciences Research

Council (HSRC) tested for HIV prevalence with a representative sample of the South African population (using saliva testing) (Shisana and Simbayi, 2002).

Another source for HIV prevalence data is the AIDS model of the South African Actuarial Society (ASSA): a demographic model that estimates the impact of HIV and AIDS on the South African population, combining data from the antenatal clinic surveys (1998-2000), the South African Demographic and Health Survey (2001), and estimates of population size and mortality rate.

However, whenever clinical testing or modelling is not possible, researchers have looked for ways to identify health status by means of interviews. Self-reported health data have hence been collected through various surveys such as the Demographic and Health Survey (DHS), the General Household Survey (GHS), the Population Census, the South African Social Attitudes Survey (SASAS), and the World Value Survey (WVS).

Since CAS 2005 did not have the means to set up clinical testing of its respondents, and little or no health data of the Cape Town Metropolitan Area specifically are available, we decided to develop a measure for self-reported health, using responses from a health roster referring to the health of all members in the household and a number of individual health questions. The questions ranged from more general health statements to more specific probes for the presence of possibly AIDS-related symptoms, some of which have been used in very similar forms by the international and national surveys. An overview of the results of all Health-related questions is provided in table 2.

Table 2: overview of replies (%) to all health related questions in CAS 2005⁸

How is this person's health, in general?			How do you expect this person's health to be in five years time, in 2010?			Please look at this list (=H6-H11). Has this person had any of these health problems in the past 6 months?			If yes to H5, tick appropriate column								
H3			H4			H5			H6-H11								
	Total %	Resp %		Total %	Resp %		Total %	Resp %		Total %		Resp %					
Poor	3.5	4.9	Poor	2.6	3.8	Yes	12.5	15.9	Breathing problems (including asthma)	4.0		4.9					
Fair	9.2	12.8	Fair	5.7	8.8	No	86.5	83.5	Flu (influenza)	7.3		9.5					
Good	28.3	28.7	Good	18.8	20.7	Refused	0.8	0.6	Persistent diarrhoea	0.8		1					
Very Good	23.3	23.4	Very Good	23.3	22.3	Don't know	0.3	0.1	Severe weight loss	0.7		1.4					
Excellent	35	30	Excellent	27.6	22.6				Sores or infections in mouth or throat	0.7		1.3					
Refused	0.6	0.2	Refused	0.9	0.5				Tuberculosis (TB)	0.6		1					
Don't know	0.1	0	Don't know	20.9	21												
			Deceased	0.3	0.3	Total	100	100	Total	100		100					
Total	100	100	Total	100	100	Total	100	100	Total	100		100					
N	4933	1195	N	4920	1191	N	4909	1190	N	4958		1195					
Has this person had any other health problems or disabilities in the last 6 months?			If yes to H12: please tell me what problems or disabilities this person has?			Has this person visited a doctor in the last 6 months for any health problems?			Has this person been in hospital in the last 6 months for any illness?		Has this person taken any medication in the last 6 months?		Has this person visited a traditional or alternative healer in the last 6 months because of poor health?				
H12			H13 ⁹			H14			H15			H16			H17		
	Total %	Resp %		Total %	Resp %		Total %	Resp %		Total %	Resp %		Total %	Resp %		Total %	Resp %
Yes	14.3	22.7	Physically handicapped	0.6	0.8	Yes	19.1	27.4	Y	5.6	8.3	Y	20.0	28.2	Y	0.6	1.1
No	85	76.9	Mental problem	0.5	0.5	No	79.9	72.1	N	93.6	91.3	N	79.0	71.3	N	98.7	98.5
Refused	0.6	0.4	HIV/AIDS	0.02	0	Ref	0.6	0.4	Ref	0.7	0.5	Ref	0.6	0.4	Ref	0.6	0.4
Don't Know	0.1	0	Problems with sight, hearing or speech	1	1.7	Don't Know	0.4	0.1	Don't Know	0.1	0	Don't Know	0.4	0.1	Don't Know	0.1	0
			Heart problem/ blood pressure	5.4	9.9												
			Diabetes	2	2.4												
			Cancer	0.3	0.5												
			Refused	0.5	0.5												
Don't know	0.1	0.2															
Total	100	100	Total	100	100	Total	100	100	Total	100	100	Total	100	100	Total	100	100
N	4910	1193	N	4880	1195	N	4880	1187	N	4879	1188	N	4881	1195	N	4879	1188

⁸ Data represented in the *Total* columns are respondents' replies for all household members; data in the second *Resp* column are respondent level data only. Total numbers are mentioned at the top of each column. Any cases in this table not adding up to a total of 100% are due to rounding of the numbers.

⁹ H13 also had the response option other, but because numbers to that were so small, they were dropped for this analysis.

a) Self-reported health status

The 2005 round of the World Value Survey asked all respondents about their subjective ‘state of health’ in following format: ‘*All in all, how would you describe your state of health these days? Would you say it is very good, good, fair, poor, or you don’t know?*’ Out of a sample of 2998 South African respondents, 47% thought their health was very good, 31% said it was good, 18% thought their health was fair, and 4% said they had a poor health (World Value Survey, 2005).

Almost the same question was included in the South African Social Attitudes Survey (SASAS), the response options were slightly different (*excellent, good, average, poor and very poor*). There are differences in the results of the two studies, but the overall trend seemed the same, with a majority of people rating their health above average: of a total of 4957 South Africans, 20% rated their health excellent, 45% said it was good, 19% thought it was average, 12% replied poor and 4% rated their health as very poor (HSRC, 2006: 211).

Responses to the CAS 2005 question on perceived health status (H13), especially for oneself, do not differ too dramatically from findings of the WVS and SASA: with 30%, a considerably higher percentage of CAS respondents do rate their health ‘excellent’, but that might be due to having used different scales than the other surveys and to having concentrated only on the Cape Town Metropolitan Area. About 5 % of respondents thought that their health was *poor*, 13% considered it *fair* and 29% rated it *good*. The similarities in the trends found in CAS and the other surveys provide some confidence for using the respondent level data in the health measure (see table 3).

Table 3: Self-reported health in various South African surveys

<i>Self-reported health</i>	<i>WVS</i>	<i>SASAS</i>	<i>CAS</i>
	<i>2005</i>	<i>2003</i>	<i>2005</i>
	<i>SA</i>	<i>SA</i>	<i>Cape Town</i>
Excellent		20%	30%
Very good	47%		23%
Good	31%	45%	29%
Average		19%	
Fair	18%		13%
Poor	4%	12%	5%
Very poor		4%	

b) Illness and disabilities

Besides general self-reported health, the South African Demographic and Health Survey (DHS, 1998)¹⁰ asked a range of more specific questions on a respondent's personal health service utilisation, family medical history, clinical conditions, medication use, etc. On the prevalence of clinical conditions, participants in the DHS were asked whether:

a doctor or a member of the health profession had informed that they suffered from chronic conditions, and if so, whether any episodes of illness had occurred during the last year (DHS 1998 full report: 168).

Results show approximately 4% of all respondents reported chronic bronchitis and asthma, and less than 1% said they had been told they had any sort of cancer. In the Western Cape specifically, about 4% of the respondents reported prevalence of diabetes; just over 5% of the participants indicated asthma prevalence; and about 1% reported cancer. Just under 3% of the respondents reported TB (DHS, 1998, full report: 172-176, and author's own data analyses).

The 2001 Population Census asked people about possible disabilities, defined as 'a limitation in one or more activities of daily living (seeing, hearing, communication, moving, getting around, daily life activities, learning, intellectual and emotional)' (Gray *et al.*, 2005: 277). It found 5% of the South African population, and 4% of the Western Cape population lived with some sort of disability. 0.6% of all people in the Western Cape lived with a hearing disability, 0.9% had a physical disability, and 0.8% had a sight disability; in 1996, 0.4% of the province's population was identified as having a mental illness (Gray *et al.* 2005: 278, and author's own analyses).

Specific data on tuberculosis (TB) are available through the Department of Health, which reported an incidence of all types of TB of 931.5 per 100,000 South Africans (i.e. 0.93% of the total population).

Table 4 shows that there is quite some variation in the findings from the different surveys, some of which might be due to the evolution in health and health care over time. Results from CAS 2005 can be similar or different from the other surveys' findings, depending also on whether or not we focus on respondent level or other household members' data, with e.g. almost the same 4 to 5 % of reported breathing problems or asthma as reported by the DHS 1998, an almost similar 0.5% of mental problems compared to 0.4% in the national Census, but a rather low of 0.3 to 0.5% of cancer reports, compared to about 1% in the DHS data in the Western Cape. Census data for the Cape Town

¹⁰ Data from the more recent 2003 DHS are not yet publicly available.

Metropolitan Area show results that are comparable to the CAS ones, with 0.7% reported problems with sight, hearing or speech, 0.5% physically handicapped, and 0.5% of depression or mental problems. This does indicate a certain level of trustworthiness of the CAS data. However, it should be kept in mind that, as CAS was not a health specific questionnaire and respondents might have felt the health questions to fit in uncomfortably with the other social and political opinion questions, there may have been some under-reporting on the health questions.

Table 4: prevalence rates of various illnesses, as measured by DHS, GHS, Census and CAS.

Prevalence of clinical conditions	DHS 1998		GHS 2004		Census 2001		CAS 2005	
	SA	WC	SA	WC	SA	WC	Cape Town	
							Total	Resp
High blood pressure	14%	14.6%					5%	9.9%
Heart attack or chest pains	4.8%	4%						
Stroke	1%	1.7%						
High blood cholesterol or fats in the blood	1.3%	2.4%						
Diabetes or blood sugar	2.9%	4.1%	0.6%	0.8%			2%	2%
Bronchitis	4.2%	10.5%						
(Breathing problems including) asthma	3.8%	5.41%					4%	5%
TB	2.2%	2.8%	0.7%	0.6%			0.6%	1%
Cancer	0.4%	1.2%					0.3%	0.5%
HIV/AIDS			0.1%	0.1%			0.02%	0%
Other sexually transmitted disease			0.04%	0%				
Problems with sight, hearing or speech					0.4 – 1.7%	0.7 – 1.3%	1%	1.7%
Physically handicapped/ Physical disability					1.54%	0.9%	0.6%	0.8%
(Depression or) Mental problem			0.3%	0.4%	0.8%	0.4%	0.5%	0.5%
Flu/acute respiratory tract infections			6.1%	4.2%			7%	9.5%
Diarrhoea			0.4%	0.2%			0.8%	1%
Severe trauma			0.2%	0.3%				

However, as an extra test to the data collected by CAS 2005, simple bivariate tabulations were run to investigate the level of correlations between the various health questions. I found that the majority of people who reported their health as *poor* or *fair* did also report having visited a doctor (72% and 58% respectively),

and having taken medication in the past six months (69% and 67%). The majority of those who rated their health as good, very good and excellent reported not having visited a doctor (66%, 80% and 92% respectively) or not having taken medication in the past 6 months (66%, 80% and 93%). Levels of reported hospitalisation were much higher among those with poor or fair reported health (21 to 41%), compared to people with a better health (2% to 8%). Chi Square tests indicated significant relationships between all these variables, which leads us to believe that at least these health questions were answered in consistent ways.

c) HIV prevalence and affectedness

Measuring HIV prevalence and 'affectedness' through surveys that do not include testing poses major difficulties. Self-reported data from surveys such as CAS can be compared to prevalence rates from other sources (such as the 2002 AIDS survey and the ASSA model estimates). But comparison of CAS data is hampered by the fact that these other studies look at HIV-prevalence at national and provincial levels only, and no specific prevalence rates for the Cape Town Metropolitan Area are publicly available.

Estimates on HIV prevalence in the country still vary between different sources. At the end of 2003, UNAIDS estimated the HIV prevalence rate among adults between the ages of 15 and 49 in South Africa to be approximately 21.5%. According to the 2005 UNAIDS Epidemic Update, HIV prevalence among women visiting antenatal clinics reached 29.5%. Prevalence is estimated to be as high as 40% in Kwazulu-Natal and between 27 to 31% in the Eastern Cape, Free State, Gauteng, Mpumalanga and North West provinces (UNAIDS 2005). The 2002 AIDS Survey found a prevalence rate of 11.4% in the total South African population, and a high of 28% among the 25 to 29 age group. The HSRC's provincial breakdown showed prevalence rates of 14.9% in the Free State, 14.7% in Gauteng, 14.1% in Mpumalanga, 11.7% in Kwazulu-Natal, 10.7% in the Western Cape, and 6.6% in the Eastern Cape (HSRC 2002). In their projections on HIV prevalence in the different South African provinces, Dorrington *et al.* (2002) estimated prevalence rates among adults aged 15 to 49 in the Western Cape to be 8.6% by 2006.

In CAS 2005, none of the individual respondents reported that they were HIV-positive, and only for one household member out of the entire number of 4975 people was a positive HIV status reported. This response was even lower than the 0.1% self-reported prevalence in the 2004 GHS. As we had expected low reporting of HIV, the questionnaire included also questions about AIDS-related symptoms that would hopefully allow us to identify infected people through other ways than self-report. Dorrington *et al.* estimate that only 7.3% of all HIV-

positive people in the Western Cape province are AIDS sick, most HIV-positive people in the province being in the first stages of AIDS during which there are no symptoms. This corresponds to approximately 0.4% of the total Western Cape province population. An additional 8.2% of HIV-positive people are estimated to be on Antiretroviral Treatment (ART) (approximately 0.4% of total province population). These ART patients might not have suffered from any of the AIDS-related symptoms in the previous six months. This means that only a negligible proportion of the infected people in Cape Town would show AIDS-related symptoms¹¹. This, and the understanding that people might again be very hesitant to respond truthfully to questions about symptoms, makes it unlikely that surveys like CAS will detect high levels of HIV-affectedness. Findings about symptoms are presented in table 6.

Table 6: Prevalence of specific illness in CAS2005

<i>Symptoms (H6-H11)</i>	<i>Prevalence in CAS sample</i>	
	Total	Respondent only
Breathing problems (including Asthma)	4%	5%
Flu (influenza)	7%	10%
Persistent Diarrhoea	0.8%	1%
Severe weight loss	0.7%	1.4%
Sores or infections in mouth or throat	0.7%	1.3%
Tuberculosis (TB)	0.6%	1%

Out of the described questions, a health measure was constructed that allowed for identification of what could potentially be HIV-infected household members – and, consequently, HIV-affected households. A variable *total* expressing the sum of all symptoms mentioned in questions H6 to H11 was created, in order to understand how many household members could potentially be infected by HIV. Very low figures were found for household members with more than 2 symptoms (0.2%, n=11) Similarly, after creation of variables *total1* and *total2* out of combinations of specific symptoms, based on the World Health Organisation’s HIV staging system, very low figures were found that would allow for identification of potentially infected people.

Another variable *affected* was created to express a household members’ potential infection: it was coded 1 when *total* was equal to 4 or more, or when *total1* was equal to 3 or more, or when *total2* was equal to 2 or more, or when a household member had explicitly been identified as HIV-positive through question H13. 0.4% of all household members were thereby found to be

¹¹ For an overview of the symptoms related to the different stages of the disease, cf. appendix 1.

‘affected’, distributed over 16 households (1.3% of all households in the sample). Distributions are presented in table 7.

Even a very pessimistic suspicion on the potential difficulty of identifying infected people through the survey questions would not have expected these extremely low numbers: more than 4 % of the Western Cape Province population is estimated to be in a pre-AIDS stage, it is therefore very surprising to find far less than 1 % of the survey sample potentially in that stage of the disease. Little other explanation for these results can be found than an extremely high level of discomfort on the respondents’ part when answering these questions.

Table 7: Variable construction to indicate possible HIV-affectedness

<i>Classification (Variable name)</i>	<i>Description</i>	<i>Distribution</i>
Total	Household member identified with at least 4 of all symptoms mentioned in H6-H11	0.06% (n=3)
Total 1	Household member identified with at least 3 of following symptoms: <ul style="list-style-type: none"> - breathing problems - flu - severe weight loss - sores or infections in mouth or throat <p>(potential stage 1, 2 and 3 symptoms)</p>	0.12 % (n = 6)
Total 2	Household member identified with at least 2 of following symptoms: <ul style="list-style-type: none"> - persistent diarrhoea - sores or infections in mouth or throat - TB <p>(potential stage 2, 3 and 4 symptoms)</p>	0.14 % (n=7)
Affected	Total \geq 4, or Total1 \geq 3, or Total2 \geq 2, or Household member was identified as HIV-positive in question H13	0.42 % (n=21)

It must definitely also be taken into account that these questions were asked in the context of the larger CAS questionnaire. CAS is not a specific health survey, but rather probes for very different aspects of social and political life in the Cape Town Metropolitan Area. It is not inconceivable that health questions as these described above came with too little health related context and caused serious

suspicion among the respondents about the final aim of the survey, causing them to misreport some of the health problems their families are having to deal with¹².

Hence, it seems that for this research, no other option remains than to move away from trying to identify HIV-affected households and household members, and to move on to a distinction in households that are affected by ill health in general, and those that are not.

d) General health: Excellent, good or poor

Rather than focus on the negligible number of identifiable HIV- or probably HIV-affected individuals and households, I use responses to questions H3, H12, H14 to 17 and the earlier created variable *affected* to construct a general, composite measure of health. Using the respondents' answers on the health of other household members has of course left room for measurement error: respondents are likely to provide more accurate data on their own health than on the health of other members of the household. One can, for example, imagine a respondent who is an aunt of some of the children in the household, not knowing exactly whether or not the children had perhaps had flu, or whether or not some of the other household members have had severe diarrhoea in the past six months. Hence, as respondents' replies regarding their own health are considered to be at least slightly more accurate, respondent level data only was used to create the good and ill health variable that in later parts of this study will be used as an indicator for some of the respondent's values and attitudes towards life in general and education in particular. Even these self-reported results should, however, always be interpreted with some caution: reports on the results of the Demographic and Health Survey too, point to the fact that chronic illnesses are 'frequently under-reported or incorrectly reported by patients' (DHS 1998, full report: 168).

Table 8 shows the classification and distribution of household members' health according to respondents' replies:

¹² It has been pointed by many others that respondents tend to misreport when they mistrust the survey they are taking part in: people are known to 'base their answers on a perception of how the information might be used' (Ramphele 1990).

Table 8: health variable creation

<i>Classification (Variable name)</i>	<i>Description</i>	<i>Distribution (n=4836)</i>
Poor health	<ul style="list-style-type: none"> - person's general health is rated 'poor' or 'fair' in H3; or - household member is identified as potentially HIV-infected (variable <i>affected</i> = 1); or - person has other health problems or disabilities as identified in H12; or - household member has been to a doctor, hospital or traditional healer for any health problem, or has taken medication in the last 6 months (at least 2 of these 4 options, as given in H14-H17) 	24.5%
Good Health	<ul style="list-style-type: none"> - person's general health has been described as good or very good in H3; and - household member has not been identified as potentially HIV-positive (<i>affected</i> = 0); and - person has no other health problems or disabilities (H12 = 2); and - household member has only been once, or not at all, to either a doctor, hospital, alternative healer, or has taken medication. 	42.7%
Excellent Health	<ul style="list-style-type: none"> - person's general health is said to be excellent; and - he or she has not been identified as potentially HIV-positive; and - person has no other health problems or disabilities; and - he or she has not visited a doctor, hospital or traditional healer, or taken any medication for health problems in the last 6 months. 	32.8%

3.3. The distribution and causes of health status among CAS respondents

To get a more thorough understanding of the health status in our sample, more analyses were run, using only the respondent level health data¹³. Health status is obviously related to age: only 7% of elderly people report excellent health, compared to about 45% of people younger than 30. More than 36% of elderly fall into the poor health category. However, apart from the influence of age, ill health is clearly still mostly a burden of the poor: unemployment, lower levels of education and lower income levels are all positively and significantly related to

¹³ Appendix 2 provides the overview table with descriptive statistics on the health measure.

poor health. One quarter (24%) of unemployed respondents fell into the poor health category, as opposed to 11% of employed people. More than 36% of respondents with primary education categorised as having poor health, compared to less than 9% of people with tertiary education. Fewer than 14% of respondents from the R5000-R10000 income bracket were identified with poor health, compared to more than 26% of the poorest income bracket.

To test the exact influence of the different factors on health, multivariate logistics regressions were run, using respondent level health data. For the dependent variable, a binary variable expressing ‘ill health’ was constructed out of the previously mentioned health measures and the respondents’ reported expectation on the evolution of their health:

Table 9: dummy variable creation for ill health

<i>Classification (Variable name)</i>	<i>Description</i>	<i>Distribution (n=1127)</i>
Ill health	Binary variable coded 1 when the health measure equalled ‘poor health’, or equalled ‘good health’ but respondent reported the expectation that his or her health would deteriorate;	25.6%
	variable coded 0 when health was rated ‘good’, and expected to stay equal or improve, or rated ‘excellent’	74.5%

Again, ill health is typically found in older respondents, and in those who are unemployed, have completed no, or only lower levels of education, and live in households with an income of less than R5000 a month; it is also more prevalent in the Coloured than in the Black African or White population group.

Different regressions were run, adding some of the independent variables identified above:

- 1) demographic variables of age, gender and population group;
- 2) then adding respondents’ level of education, their employment status and monthly income of their household;
- 3) then adding neighbourhood factors;
- 4) and finally adding attitudes towards life.

Results of the final regression are presented in Table 10.

Throughout the analysis, age always came up as a significant, positively associated factor with the chances to ill health. Monthly household income on the other hand, had a significant negative effect: the higher the income bracket, the smaller the chances to ill health. Gender and population group had no significant impact, nor did neighbourhood or household characteristics, but a feeling of control in people was also significantly and negatively associated with ill health.

Table 10: Results of the final regression on ill health

Indicators	Odds Ratio 4	Probability:
Age	1.058 <i>[0.007]***</i>	8.63
Female	1.122 <i>[0.200]</i>	0.65
Coloured	1.382 <i>[0.297]</i>	1.51
White	0.667 <i>[0.240]</i>	-1.12
Other	1.180 <i>[0.458]</i>	0.43
level of education	0.834 <i>[0.124]</i>	-1.22
Household monthly income	0.844 <i>[0.080]*</i>	-1.78
employment status	1.061 <i>[0.072]</i>	0.87
unsafe neighbourhood	1.209 <i>[0.218]</i>	1.05
number of residents in house	0.943 <i>[0.041]</i>	-1.33
Feeling of control over life	0.742 <i>[0.131]*</i>	-1.69
high belief in future opportunities	0.823 <i>[0.146]</i>	-1.10
N =	861	
Pseudo R squared =	0.165	

Notes: Standard errors in brackets.

* significant at 10% level, ** significant at 5% level, *** significant at 1%.

4. Life Expectancy

In my model of how AIDS might affect the perceived value of education (set out in Figure 1), life expectancy plays an important role. By reducing either or both their own and/or their childrens' life expectancy, HIV/AIDS might reduce the attraction to parents of investing in their childrens' education. Unfortunately, there does not appear to be any extant literature, either quantitative or qualitative, examining how South Africans understand longevity and death, i.e. life expectancy. After piloting several alternative questions, CAS 2005 included questions asking all respondents whether they expected 1) themselves and 2) their children to be alive at the age of 40, 50, 60, 70 and 80 years.¹⁴ The answers to these separate questions were later combined into one variable summarising 'life expectancy'. If a respondent expected to be alive at the age of 40 but not at 50, then the value of '40' was entered for the composite variable. If someone expected to be alive at the age of 40 but answered 'don't know' to all the following ages, the value 'uncertain above 40' was entered.¹⁵

4.1. Perceived life expectancy for children

Table 11 shows that most – more than three-quarters – of our respondents were confident of living until at least the age of 70 years. Another 11% said they expected to live to the age of 60 years, but were uncertain about reaching 70. In short, the respondents in CAS 2005 expected to live into old age.

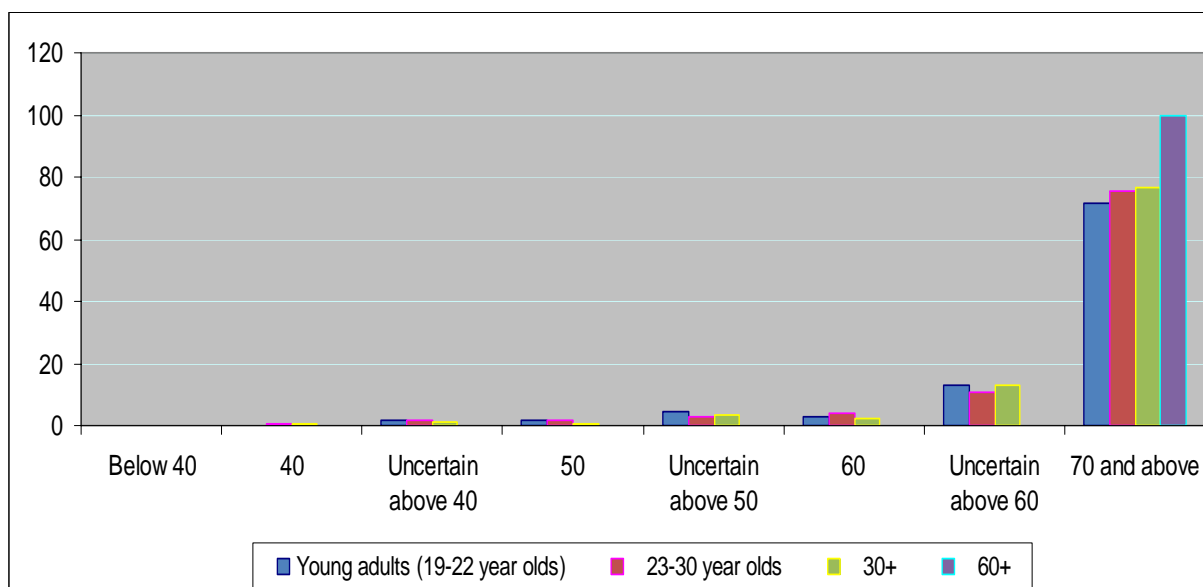
¹⁴ When taking this question on in the CAS questionnaire, we were wary of the fact that this question might not evoke true or honest answers: we originally feared that people would feel offended by a question asking them how long they and their children expect to live. When piloting the question with a number of (African) field workers, the question was not considered offensive, but evoked confusion, for how could one possibly know how long one would live? After piloting with a few African respondents, we again found that no one seemed to be offended by the question and not too many seemed to think it difficult to try and answer the questions. Hence, after a number of rounds of debating and rewording, we eventually did decide to include the questions, but were aware of the fact that we might have to treat the results with some caution. We were, however, never expecting the high levels of life expectancy as noted in the tables.

¹⁵ Appendix 3 provides an overview of the descriptive statistics for this variable.

Table 11: Perceived life expectancy of CAS 2005 respondents

<i>Life_expectancy</i>	<i>Distribution (n=1068)</i>
Below 40	0.1%
Uncertain above 40	1%
40	0.4%
50	0.8%
Uncertain above 50	3%
60	3%
Uncertain above 60	11%
70 and above	78%
Unknown	3%

If a respondent is already older than forty, it is meaningless to ask whether he or she expects to live to that age. The optimistic life expectancy reported in CAS is not, however, a product primarily of the fact that many respondents have already reached middle or old age. Older respondents did report higher life expectancy, but even among the younger respondents, life expectancy was high. Figure 2 shows the life expectancy of four different age cohorts in the CAS sample.



Among young adults, aged between 19 and 22 years, almost 72% reported a life expectancy of 70 years or more. Among 23 to 30 year olds, almost 76% reported a life expectancy of more than 70 years. In these age groups that are hardest hit by illness and death as a consequence of the AIDS pandemic, there is no indication of any sort of doom thinking or shortened life expectancy, as

assumed by certain researchers (Barnett and Whiteside, 2002). From the data alone, it is unclear whether people truly assume they will reach the age of 60 or older, or whether the question eventually did miss its goal and did not succeed in tapping people's honest convictions. As with the replies to our health questions, it is not unthinkable that the respondents were simply not willing to allow the CAS interviewers insight into their fears and uncertainties. However, out of earlier qualitative work with HIV positive caregivers, it has become clear that even HIV-infected people's life expectancy does not necessarily dramatically decrease. It perhaps becomes less clear how long they will live, and I would therefore have expected higher degrees of uncertainty, but certainly no high numbers of very low or low expectancies.

The reported life expectancy of CAS respondents is at odds with estimated life expectancy trends in South Africa as a whole. According to the Human Development Indicators of the United Nations Development Programme (UNDP), real measured life expectancy in South Africa is decreasing. In 2001, life expectancy at birth was an estimated 50.9 years; for the whole period of 2000 to 2005, life expectancy was noted at 47.7 years.¹⁶ For the same period, 45% of the cohort measured had a probability at birth of not surviving the age of 40; only 37% of females in the cohort had a probability of surviving to the age of 65, compared to an even lower 25% of males (UNDP, 2003). The 2003 ASSA model presents a more detailed picture. It estimated life expectancy at birth in 2002 to be at 53.4 years; projections for 2010 show a possible life expectancy at birth of 50.4. For 2006, the model predicted a life expectancy at birth at 50.7; life expectancy at the age of 20 was estimated at 56.2 years, and at the age of 65 at 78. For the Western Cape specifically, life expectancy was slightly higher than at the national level. Life expectancy at birth was an estimated 61.5 years; at the age of 20 it was predicted 64.9 years, and 78.8 years at the age of 65 (ASSA 2003 model). Taking a continuing ARV roll out into account, the ASSA 2000 model predicted a decreased life expectancy of just below 60 years for 2015 (ASSA 2000 model).

Even taking into account the slightly higher levels of life expectancy at adult ages, the optimism among our respondents is striking. More than half of the CAS respondents expect to still be alive at the age of 80. No less than 86% of the African sub-sample reported a life expectancy of 70 years and more, which is especially surprising as this is the population group that is hardest hit by the

¹⁶ Figures vary slightly, depending on the sources used. UNAIDS, for example, quoted a life expectancy at birth of 48.0 for men and 50.0 for women, in 2003 (UNAIDS, 2005). Figures of the different UN organisations are, however, based on the official United Nations population estimates and projections that are based on 'the most recent demographic data available for each and every country and area of the world', mostly taken from surveys as the Demographic and Health Surveys (United Nations Department of Economic and Social Affairs, 2004).

HIV and AIDS pandemic and that sees most young people die as a consequence of the disease.

Despite this overall optimism, poor health does have a statistically significant, but very small, effect on life expectancy. A slightly lower proportion of people with poor health reported a life expectancy of 70 or more years (75%) than those with good health (78%).

In trying to understand exactly how the various factors worked on influencing life expectancy, multivariate logistic regressions were run. A new binary measure for life expectancy was therefore used as dependent variable: the binary variable *high_exp* was coded 1 when respondents' life expectancy equaled 70 years or more (80%), a binary variable *low_exp* was coded 1 when respondents' life expectancy was less than 70 years (20%).

As with the analysis of health, different regressions were run. As it is especially important for this study to understand the effect of health on life expectancy, all regressions included the *ill_health* variable, then adding various independent variables¹⁷:

- 1) Ill health;
- 2) then adding demographic variables of age, gender and population group were;
- 3) adding respondents' level of education, their employment status and monthly income of their household;
- 4) adding neighbourhood factors, and individual specific characteristics.

¹⁷ For a description of each variable, see section 5.

Table 12: Logistic regression on dependent variable 'low life expectancy'¹⁸

Indicators	Odds Ratio regression 1	Probability:	Odds Ratio regression 2	Probability:	Odds Ratio regression 3	Prob- ability:	Odds Ratio regression 4	Prob- ability:
ill health	1.325 [0.236]	1.58	1.972 [0.394]**	3.40	1.895 [0.442]**	2.7	1.768 [0.426]*	2.4
Age			0.959 [0.006]***	-6.39	0.953 [0.008]**	-5.7	0.951 [0.008]**	-5.6
Female			1.269 [0.217]	1.39	1.036 [0.207]	0.2	1.013 [0.210]	0.1
Coloured			3.057 [0.621]***	5.50	4.242 [1.036]**	5.9	4.692 [1.206]***	6.0
White			3.061 [0.769]***	4.45	3.848 [1.541]**	3.4	4.218 [1.785]**	3.4
Other			2.017 [0.768]*	1.84	2.95 [1.250]*	2.6	3.428 [1.478]**	2.9
level of education					0.825 [0.144]	-1.1	0.859 [0.158]	-0.8
household monthly income					0.795 [0.240]*	-2.2	0.740 [0.082]**	-2.7
employment status					1.113 [0.083]	0.5	1.191 [0.268]	0.8
unsafe neighbourhood							0.968 [0.203]	-0.2
number of residents in house							1.108 [0.054]*	2.13
high feeling of control over life							0.651 [0.135]*	-2.07
high belief in future opportunities							0.587 [0.122]	-2.56
n =	987		985		773		763	
R squared =	0.0107		0.17		0.0877		0.1164	

Notes:

Standard errors in brackets

* significant at 10% level, ** significant at 5% level, *** significant at 1% level

¹⁸ In all regressions, numbers fall between models 2 and 3 because of the high number of missing income data at respondent level.

In the final regression, ill health and age came up as highly significant indicators of life expectancy. Ill health increases the probability of a lower life expectancy, controlling for other factors. It is unsurprising that age is correlated with a reduced probability of lower life expectancy, given the cross-sectional sample. Age clearly needs to be controlled for in these regressions. Further, a high belief in future opportunities and a high feeling of control in life were significant. The relationship between the belief in future opportunities or the feeling of control and life expectancy might be causal in either direction, so it is probably best to use the results in regression 3.

Population group, monthly household income and number of residents further proved significant, but we may have overspecified the model by including all variables simultaneously. The model was rerun including only household income and leaving out level of education, number of residents and employment status; regression results indicated a significant negative correlation between household income and low life expectancy. This may be explained by the fact that those who have a higher income can undoubtedly spend more on a healthy lifestyle, live in safer neighbourhoods etc. Findings of these regressions will in any case be investigated further in both quantitative and qualitative research.

I wanted to understand whether the above regression results held for each of the population groups separately, because cultural differences between them may account for certain variation in life expectancy. Further, HIV and AIDS affect the different population groups to different degrees (and thus perhaps also their respective life expectancy): it is estimated that prevalence rates vary from 13.3% among African people, to 1.9% among Coloured and 0.6% among White South Africans (HSRC 2006). The final regression was therefore run per population group. The results are shown in table 13.

Table 13: Logistic regressions per population group, on dependent variable 'low life expectancy'

Indicators	Odds Ratio Probability:		Odds Ratio Probability:		Odds Ratio Probability:	
	Black African		Coloured		White	
ill health	1.363 [0.679]	0.62	1.681 [0.567]	1.54	11.437 [1.882]*	2.56
Age	0.961 [0.020]*	-1.89	0.942 [0.124]***	-4.52	0.907 [0.027]**	-3.32
Female	0.871 [0.346]	-0.35	1.305 [0.394]	0.88	0.634 [0.428]	-0.68
level of education	0.823 [0.294]	-0.54	0.935 [0.246]	-0.25	0.387 [0.251]	-1.46
household monthly income	0.904 [0.210]	-0.43	0.718 [0.110]*	-2.17	0.683 [0.245]	-1.06
employment status	2.081 [0.860]*	1.77	1.069 [0.355]	0.20	2.983 [2.546]	1.28
Unsafe neighbourhood	0.796 [0.326]	-0.56	0.977 [0.297]	-0.08	2.255 [1.599]	1.15
number of residents in house	1.217 [0.089]**	2.69	0.953 [0.075]	-0.61	0.999 [0.228]	-0.00
feeling of control over life	0.235 [0.098]**	-3.48	0.809 [0.235]	-0.73	3.013 [2.325]	1.43
Belief in future opportunities	0.952 [0.378]	-0.12	0.343 [0.103]***	-3.56	2.723 [1.871]	1.46
n =	305		291		121	
R squared =	0.1197		0.1951		0.3030	

Notes: Standard errors in brackets

* significant at 10% level, ** significant at 5% level, *** significant at 1% level

It should be noted that sample sizes become rather small, for example for the White population group, and confidence intervals become large in some cases, so care should be taken when interpreting these results. Health status does not have a statistically significant effect on life expectancy in the Black African or Coloured sub sample, whereas it does with White respondents. Apart from age, employment status correlates significantly negative, and number of residents significantly positive in the house in the Black sample. It should of course always be kept in mind that correlations are conditional on controlling for the other factors, but this might certainly indicate that better economic circumstances, employment security and less people to share available economic resources correlate positively with life expectancy. Finally, a high feeling of control in life shows a significant, negative impact in the Black population group. It is at this stage of the quantitative part of the research unclear exactly what the latter implies, but further in-depth work on how people understand sickness, death and life expectancy should shed a clearer light on this.

In sum, the multivariate regression results provide some support for the model set out in Figure 1, but only for white respondents, i.e. for that section of the population with the lowest HIV prevalence rates. Among these respondents,

poor health does correlate with lower life expectancy. Among African respondents, however, life expectancy is high – indeed, higher than is consistent with real and projected data on life expectancy in South Africa – and there is no correlation between health and life expectancy, as we have measured them in CAS.

4.2. Children's life expectancy

The model suggested that parents or caregivers will no longer be interested in investing in their children's education if they do not believe that the children will live long enough to recoup that investment (see, for example, Barnett and Whiteside, 2002). Indeed, data on real life expectancy and infant mortality rates do not paint an optimistic picture. UNAIDS points at an increase of under-five mortality rate (per 1,000 births) from 60 in 1990 to 71 in 2001, and in infant mortality rate (per 1,000 births) from 45 in 1990 to 56 in 2001 (UNAIDS, 2005).

Within the CAS sample, perceived life expectancy for children¹⁹ was again surprisingly high, with more than 72% of the parents expressing the expectation that their children would still be alive at the age of 70 and more. One interesting difference with life expectancy for themselves, however, is the higher number of people saying they 'do not know' how long their children will live (2% for themselves versus almost 10% for their children).

Again, life expectancy for children seems almost unrealistically high among that population group that is hardest hit by poverty and disease and that therefore runs higher risks of child mortality than any of the others: close to 90% of Black Africans expressed a life expectancy for the children of over 70 years. Higher proportions of both Coloured and White people expressed a more uncertain life expectancy for their children: almost 8% of Coloured respondents state they are uncertain about their children living above the age of 50, compared to less than 2% of Black African people; 13% of Coloured and almost 7% of White people express uncertainty above the age of 60, compared to 5% of Black respondents; and only 2% of Black Africans say they do not know how long their children will live, compared to almost 13% of Coloured and 14% of White people.

Statistically significant differences are also found in the responses of unemployed and employed people, with, for example, more than 6% of unemployed people saying that they are uncertain about their children's life above the age of 50, compared to a little under 3% of employed people. All in

¹⁹ The question regarding the life expectancy for children was only asked of those respondents in the sample who were themselves parents. Descriptives on the life expectancy variables are included in annex 3.

all, however, both groups maintain a high life expectancy, with more than 76% of employed people, and just over 68% of unemployed believing that their children will be alive at the age of 70 and above. Finally, a significantly smaller proportion of people with poor health expressed high life expectancy for their children (60%) than parents with excellent health (over 87%).

Multivariate logistic regressions were run to study the determinants of high life expectancy for children in greater detail. The same regressions as the one for adult life expectancy were used. Different from the findings for respondents themselves, is the fact that ill health of the respondent is not a significant indicator of perceived life expectancy for children. Low life expectancy for oneself is, but that is, as we saw earlier, influenced by ill health only among white respondents. Apart from age, level of education and household monthly income both come up as significant factors. There is again the concern that the model may have been overspecified. The regressions were rerun at a later stage, including first only income, and excluding education level and number of residents; and secondly including level of education but excluding income. Household income remained significant, whereas educational level did not: a higher income considerably decreases the chances of holding a low life expectancy for children. One might wonder then, whether it would perhaps be poverty, rather than ill health that might lead people to feel more insecure about their children's future lives.

Table 14: Logistic regression on dependent variable 'low life expectancy children'

Indicators	Odds Ratio regression 1	Probability:	Odds Ratio regression 2	Probability:	Odds Ratio regression 3	Probability:	Odds Ratio regression 4	Probability:
ill health	1.499 [0.382]	1.59	1.038 [0.289]	0.14	0.867 [0.273]	-0.45	0.790 [0.261]	-0.71
Low life expectancy self	16.731 [4.159]***	11.33	24.679 [7.305]***	10.83	28.764 [10.063]***	9.6	30.169 [11.286]***	9.11
Age			1.037 [0.011]***	3.55	1.043 [0.013]	3.36	1.047 [0.014]**	3.34
Female			0.677 [0.178]	-1.49	0.705 [0.211]	-1.17	0.693 [0.213]	-1.19
Coloured			3.128 [1.006]***	3.55	3.851 [0.435]***	3.62	4.285 [1.727]***	3.61
White			0.691 [0.297]	-0.86	1.470 [0.889]	0.64	1.207 [0.772]	0.29
Other			2.753 [1.600]*	1.74	3.575 [2.380]*	1.91	3.805 [2.580]*	1.97
level of education					1.687 [0.408]*	2.16	1.775 [0.464]*	2.19
household monthly income					0.680 [0.110]**	-2.39	0.690 [0.116]*	-2.22
employment status					0.869 [0.282]	-0.43	0.833 [0.283]	-0.54
Unsafe neighbourhood							0.763 [0.233]	-0.88
number of residents in house							0.981 [0.073]	-0.25
Feeling of control over life							0.429 [0.133]**	-2.72
belief in future opportunities							0.799 [0.245]	-0.73
n =	651		651		530		523	
R squared =	0.2303		0.2998		0.3230		0.3536	

Notes:

Standard errors in brackets

* significant at 10% level, ** significant at 5% level, *** significant at 1% level

5. Developing Measures of the Perceived Value of Education²⁰

The dependent variables in the model are alternative conceptions of the value of education (see Figure 1). Results from earlier qualitative work in the Cape Town Metropolitan Area (De Lannoy, 2005; Brandt and Bray, 2005), together with the findings from surveys (including the MLA and SASAS, see above) suggest that most South Africans attach a considerably strong, general value to education, and especially their own children's education: they believe education is 'very important'. Less clear, however, is precisely how South Africans value education. Qualitative research has indicated that various dimensions or meanings of that value are identified by caregivers: education has both a *social* value, creating a feeling of equality and belonging among pupils, and an *individual* and *societal instrumental* value, in that, firstly, education is the road to a better future, employment and independence, and it enables people to later take care of themselves and others, and, secondly, education might be a means to teach children discipline. Education also has an *intrinsic* value in that it conveys knowledge (De Lannoy, 2005; cf. also Francis and Archer, 2005). It can be assumed that these more specific understandings of education's value are shaped through different paths of experience, i.e. depending on the situationally specific factors of respondents' lives.

In trying to assess the different dimensions of the value of education, the CAS 2005 questionnaire included the very general question *Do you think education is very important, important, or not important?*, and a number of questions that were designed to be used to construct indices to measure more specific value dimensions. As expected, the vast majority of CAS respondents believe that education is in general either very important (95%), or important (5%). Within this overall, high agreement, only small and statistically insignificant differences were found when disaggregating by the various independent variables. There are only very small differences between age groups, employed and unemployed respondents, and people with different levels of education.²¹

²⁰ Detailed descriptive tables on the value of education are added in the appendices.

²¹ A lower proportion of 23 to 30 year olds²¹ rated education as 'very important' (94%) than respondents from any of the other age groups. The highest agreement with education being 'very important' was found among both young adults (96%) and elderly people (97%). A slightly higher proportion of employed (96%) than unemployed (95%) respondents thought education was 'very important'. A slightly larger proportion of respondents with tertiary education thought education is very important (97%) than those with secondary (95%) or primary education (93%). Sample size of respondents with no education (n=9) was too small to draw any comparisons.

A more detailed set of questions (see table 15) was intended to measure different fields of people's attitude towards education, and contained statements referring to possible individual and 'societal' instrumental functions of schooling. Looking at the perceived value of education in these more specific ways, did, as expected, paint a more diverse picture.

Table 15²²

<i>You should get an education because...</i>	<i>Strongly agree</i>	<i>Agree</i>	<i>Neither</i>	<i>Disagree</i>	<i>Strongly disagree</i>
1. Pupils learn skills that will help develop the country (%)	51	43	3	3	1
2. An educated person has a better chance of finding an interesting job (%)	44	45	6	4	1
3. You have no future without education (%)	49	34	6	11	1
4. Children learn to have respect for one another in school (%)	26	43	17	13	2
5. Educated people cannot be discriminated against (%)	19	28	20	27	6
6. Going to school keeps children away from crime (%)	30	39	12	15	5
7. Educated people can take better care of their family (%)	37	41	11	8	2
8. School is where you learn to be disciplined (%)	27	40	14	16	3
9. An educated person can earn more money (%)	40	39	13	6	2
10. Educated people are admired by others (%)	29	45	20	6	1

Of these statements, the fifth statement ('Educated people cannot be discriminated against') elicits disagreement among the highest number of respondents (33%). Statements about crime, respect and discipline also evoke higher levels of disagreement (19%, 14%, 19% respectively), perhaps pointing at people's more concrete view on the role of education in their communities: crime rates in South Africa are high, seemingly independent of the also high (especially primary school) enrolment rates. Further, more in-depth, research will be necessary to establish why especially these questions met higher levels of disagreement.

Factor analysis and reliability analysis were used to establish whether or not all questions measured the same value of education. Considering the logic behind some of the questions' wording, I considered the possibility of existing

²² Cases where the total does not equal 100, are due to rounding of the numbers

correlations between questions 2, 7, 9 and perhaps also 1, as these refer to the more individually instrumental side of education. I further assumed that questions 4, 6 and 8 might be correlated, as they all reflect the idea that school is where you learn some sort of respect or discipline. Questions 5 and 10 seemed more reflective of society and might be correlated as well. I was uncertain about question 3, as this would, according to the Mickelson's theory, almost certainly have tapped an abstract value, but the statement often came up with a concrete interpretation in my qualitative work, and definitely seemed to gain a concrete definition in Francis and Archer's study (2005).

Firstly, Principal Component Analysis extracted two components. The first was made up of almost exactly those items that were earlier described as instrumental, for the sake of the analysis named 'develop_country' (question 1), 'interesting_job' (2), and 'more_money' (9). The 'better_care' (7) item was not identified as correlating with this underlying factor, but, interestingly, the 'no_future' (3) one did.²³ All items were placed together in the first factor, however, showing stronger correlations.²⁴

Looking for further clarification, Maximum Likelihood Analysis and Oblimin Rotation were run. Again, two factors were identified, one of which was made up of what we called instrumental items, this time even potentially adding in 'better_care'. The Eigenvalue of this factor is, however, only 0.60, but correlations with the underlying factor appear stronger than in previous analyses²⁵ and Chronbach's Alpha showed a reliability of .78. The second factor contained all other items, as well as the 'better_care' (7) one,²⁶ has an Eigenvalue of 3.52 and Chronbach's Alpha of .73.

Based on these results, two indices were created: one expressing an individual instrumental value, for the sake of simplicity called *instrumental value*, the other one a more societal one. Although rating less strongly with the underlying factor, the 'better_care' item was also included in the instrumental index, as the instrumental aspect of being able to take (better) care of others by having had (a certain level of) education clearly also did come out of the in-depth interviews.

²³ The items correlate with the underlying factors as follows: develop_country (.46), interesting_job (.54), more_money (.21) and no_future (.38).

²⁴ Develop_country (.53), interesting_job (.60), respect (.72), no_crime (.69), better_care (.71), discipline (.70), more_money (.67), admiration (.61), no_future (.51), no_discrimination (.62).

²⁵ Correlations with the underlying factor are as follows: develop_country (.47), interesting_job (.59), no_future (.38), better_care (.30), more money (.52).

²⁶ Respect (.61), no_discrimination (.60), no_crime (.73), discipline (.78), admiration (.40) and better_care (.43).

The various variables making up the indexes were recoded so that 1 expressed strongest disagreement and 5 strongest agreement. Distributions are recorded in table 16 and figure 3 Overall, there is stronger endorsement of the instrumental value of education than of its social value: there is more certainty about the benefits to the child than the benefits to society.²⁷

*Table 16: Distributions of the instrumental and societal value of education*²⁸

<i>Classification</i>	<i>Description</i>	<i>Value and Distribution %</i>	
Instrumental_value (n=1172)	Sum of values/5 expressed in questions that refer to the role of education in: <ul style="list-style-type: none"> ▪ being able to develop the country (1) ▪ getting an interesting job (2) ▪ being able to take better care (7) ▪ earn more money (9) ▪ have 'a future' (3) 	1 (disagree)	0
		2	1
		3	12
		4	52
		5 (agree)	35
Societal_value (n=1127)	Sum of values/5 expressed in questions that refer to the role of education in: <ul style="list-style-type: none"> ▪ teaching children respect (4) ▪ keeping them away from crime (6) ▪ teaching them discipline (8) ▪ allowing no discrimination (5) ▪ gaining admiration (10) 	1	0.4
		2	8
		3	29
		4	46
		5	16

²⁷ For a complete overview of the descriptive statistics of the two value indexes, see appendices 11 and 12.

²⁸ Cases not adding up to 100% are due to rounding of the numbers

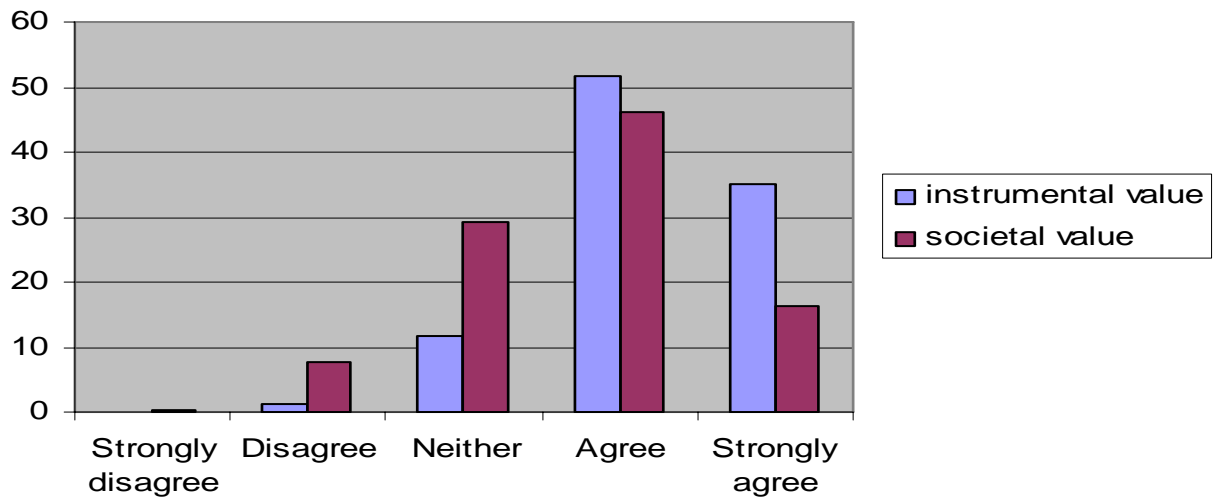


Figure 3: Index construction of an 'instrumental' and 'societal' value of education.

African respondents are most emphatic in their endorsement of the instrumental value of education (a total of almost 90% agree or strongly agree), whereas a higher percentage of Coloured and White respondents express a more neutral opinion (about 14% of Coloured and 12% of White respondents replied 'neither', compared to about 9% of Black respondents). Elderly people showed a slightly higher agreement than younger respondents (with a total of 94% agreeing or strongly agreeing, compared to for example 83% of 23 to 30 year olds). Parents show a slightly higher level of agreement with the instrumental value than non-parents (a total of almost 89% versus 86%), as do unemployed people (90%) compared to employed respondents (83%).

Similar trends are noticeable in the levels of agreement with the societal value of education. Again, a higher proportion of the Black African respondents (72%) expresses agreement than of Coloured (60%) or White (59%) respondents. A lower proportion of elderly people (just under 4%) expresses disagreement than younger respondents (7 to 9 %, ranging from young adults to 30 to 60 year olds). A larger number of employed people (11%) tend to disagree, compared to unemployed people (5%), as do more people with a higher level of education (12% of those with tertiary education disagree, compared to 3% of respondents with primary education).

Subsequently, the indexes were used as dependent variables in regression analyses with all of the earlier mentioned independent variables. I created binary variables for both indexes, coded 1 when larger than 3.5.

6. Analysing Whether Poor Health and Life Expectancy Affect the Value Attached to Education

Having developed measures of all of the independent, intermediary and dependent variables, the relationship between them can be analysed using multivariate regressions. A series of regressions on the measures of the value attached to education, using the following variables:

- 1) health and perceived life expectancy for self and children, as I wanted to test whether these would have an impact on the values, also when controlling for all other factors;
- 2) then adding demographics: age, gender and population group;
- 3) adding level of education, employment and monthly household income;
- 4) adding neighbourhood and household characteristics, attitudes in life and subjective norms;

6.1. Instrumental value

In none of the regressions did ill health or life expectancy show up as having a significant impact on the instrumental value of education (see Table 17), a strong indication of the wrongfulness of hypotheses that state the contrary.

Table 17: Logistic regression on dependent variable 'instrumental value of education'

Indicators	Odds Ratio regression 1	Probability:	Odds Ratio regression 2	Probability:	Odds Ratio regression 3	Probability:	Odds Ratio regression 4	Probability:
ill health	0.943 [0.255]	-0.21	0.970 [0.278]	-0.11	0.848 [0.287]	-0.49	0.939 [0.329]	-0.18
low life expectancy	1.082 [0.422]	0.20	1.042 [0.428]	0.10	1.115 [0.574]	0.21	1.278 [0.692]	0.45
low life expectancy children	0.953 [0.351]	-0.13	1.139 [0.442]	0.33	0.774 [0.345]	-0.57	0.931 [0.433]	-0.15
Age			1.000 [0.010]	0.03	0.984 [0.013]	-1.23	0.983 [0.014]	-1.19
Female			1.262 [0.327]	0.90	0.978 [0.312]	-0.07	0.971 [0.320]	-0.09
Coloured			0.607 [0.184]	-1.64	0.867 [0.323]	-0.38	0.817 [0.321]	-0.52
White			1.055 [0.439]	0.13	3.082 [2.057]*	1.69	4.637 [3.223]*	2.21
Other			0.700 [0.414]	-0.60	1.150 [0.818]	0.20	1.166 [0.859]	0.21
level of education					0.768 [0.195]	-1.04	0.834 [0.224]	-0.67
household monthly income					0.814 [0.135]	-1.25	0.865 [0.153]	-0.82
employment status					0.776 [0.259]	-0.67	0.733 [0.251]	-0.91
unsafe neighbourhood							1.186 [0.381]	0.53
number of residents in house							1.035 [0.089]	0.40
feeling of control over life							1.651 [0.527]	1.57
belief in future opportunities							2.515 [0.843]**	2.75
Reciprocity							1.456 [0.841]	0.65
traditional gender beliefs							1.840 [0.622]*	1.80
n =	644		644		526		517	
R squared =	0.0002		0.0109		0.0291		0.0723	

Notes: Standard errors in brackets
significant at 10% level, ** significant at 5% level, *** significant at 1% level

In the final regression, a belief in future opportunities and traditional gender beliefs were significantly and positively related to the instrumental value, indicating that not HIV and AIDS but people's views on life and the future, as presumably influenced by history, culture and the socio-economic context within which they live, have an impact on the way in which people value education and hence on the way they make decisions around education.

Surprisingly however, demographic and economic factors did not show significant relationships. It again raised the question whether we had perhaps over specified the model. Full regression models were rerun, but first including only level of education, and second only household income. In both cases, the variables proved to correlate significantly: higher levels of education and higher incomes correlated negatively with the instrumental value. At first, this seemed counterintuitive, yet it is possible that poorer and less educated people have a stronger belief in the instrumental value of education, as their returns to education would be high.

6.2. Societal value

The same regressions were run with the societal value of education as a dependent variable (see Table 18). Again, health and life expectancy for oneself did not have a significant impact on the value. However, low life expectancy for children does significantly and negatively correlate. Controlling for all other factors, being White clearly raises the chances to a higher value. Also, a high belief in future opportunities and traditional gender beliefs are again positively associated with the value. Monthly household income again correlates negatively with the educational value.

Table 18: Logistic regression on dependent variable societal value of education'

Indicators	Odds Ratio regression 1	Probability:	Odds Ratio regression 2	Probability:	Odds Ratio regression 3	Probability:	Odds Ratio regression 4	Probability:
ill health	0.983 [0.182]	-0.09	0.897 [0.177]	-0.55	0.718 [0.164]	-1.45	0.729 [0.171]	-1.34
low life expectancy	1.018 [0.267]	0.07	1.055 [0.288]	0.19	0.859 [0.860]	-0.46	0.994 [0.343]	-0.02
low life expectancy children	0.764 [0.120]	-1.08	0.788 [0.205]	-0.91	0.590 [0.177]*	-1.75	0.592 [0.185]*	-1.68
Age			1.006 [0.007]	0.81	0.999 [0.865]	-0.17	0.999 [0.009]	-0.12
Female			1.057 [0.191]	0.31	0.924 [0.195]	-0.38	0.983 [0.215]	-0.08
Coloured			0.784 [0.163]	-1.17	1.235 [0.309]	0.84	1.228 [0.321]	0.79
White			0.645 [0.168]*	-1.68	2.180 [0.891]*	1.91	2.546 [1.099]*	2.16
Other			0.299 [0.120]**	-3.00	0.484 [0.219]	-1.61	0.466 [0.214]*	-1.66
level of education					0.783 [0.132]	-1.45	0.812 [0.146]	-1.16
household monthly income					0.666 [0.074]***	-3.66	0.694 [0.082]**	-3.11
employment status					1.012 [0.218]	0.05	0.949 [0.212]	-0.23
unsafe neighbourhood							1.204 [0.254]	0.88
number of residents in house							0.976 [0.052]	-0.46
high feeling of control over life							1.120 [0.232]	0.55
high belief in future opportunities							1.562 [0.325]*	2.14
Reciprocity							0.957 [0.326]	-0.13
traditional gender beliefs							1.547 [0.332]*	2.03
n =	621		621		509		500	
R squared =	0.0019		0.0150		0.0528		0.0690	

Notes: Standard errors in brackets

* significant at 10% level, ** significant at 5% level, *** significant at 1% level

Concluding Remarks

This paper has developed and tested a model of how HIV/AIDS might affect the value that South Africans attach to education. It has demonstrated that South African adults in general hold a very high value of education, but that there might be more than one type of educational value. The paper distinguishes between and measures separately an ‘instrumental value’ (capturing the understanding that education is a road to employment, higher income, etc) and a ‘societal’ value of education (that implies the belief that education can teach children respect and discipline and keep them away from crime). In developing and testing a contextual model of factors that could influence these values, the paper has also created measures of health and life expectancy. The paper tests the model using data from the 2005 Cape Area Study, which surveyed a representative sample of adults in metropolitan Cape Town.

Although ill health is still very much a burden of the poorest in society, it does not have a negative influence on people’s life expectancy. Indeed, life expectancy is very high, even in sections of the population that have high levels of HIV infection and poor health. Neither poor health nor life expectancy, as measured in this study, show statistically significant correlations with either instrumental or societal values of education. There is no evidence that the AIDS pandemic is resulting in apathy or a loss of belief in future opportunities or a future life, as is sometimes suggested.

Parents’ instrumental value of education is especially influenced by a belief in future opportunities, and traditional gender beliefs. Surprisingly, this aspect of educational value is not impacted by economic factors as household level of income, or labour market status. It remains unclear whether the developed value measure perhaps mostly taps an abstract value, influenced by rather abstract convictions. Societal value, on the other hand, is influenced by monthly household income, perhaps indicating a more concrete understanding of education’s value. White respondents show significantly higher chances of expressing both values, than members of any of the other population groups.

Apart from the above findings, the analyses have also indicated serious difficulties in trying to measure ill health and especially HIV-affectedness through surveys. As with the GHS, CAS had extremely low levels of respondents self-reporting an HIV-positive status. In trying to identify HIV-affected people and households by using a list of possible AIDS-related symptoms, a number of flaws in the research undoubtedly sneak in, rendering it virtually impossible to measure the impact of the disease on people’s values and views in life. It was therefore decided to develop a more general and more robust health measure that could be used as an independent variable in the

model, but it must thus always be taken into account that the above conclusions are built on that general measure of health and not so much on a measure of HIV-affectedness.

This paper tests a model of the relationships between AIDS, or more accurately health, and values on education. But the test is unsatisfactory in many respects, because the data are far from ideal. The measures of health, life expectancy and educational values are all experimental. Further research will hopefully identify better questions to be asked in surveys and better measures to be developed using the ensuing data. Further qualitative research needs to be conducted with both HIV-positive and HIV-negative mothers to elicit a deeper understanding of how exactly HIV can influence parental values and decision-making, through a better understanding of how each of health, life expectancy and the value of education are understood and reported.

Appendix 1: World Health Organisation Staging System

Stage one

1. Asymptomatic
2. Persistent generalised lymphadenopathy
3. Acute retroviral infection

Stage two

4. Unintentional weight loss < 10 % of body weight
5. Minor mucocutaneous manifestations, e.g. seborrhoea, prurigo, fungal-nail, oral ulcers, angular cheilitis
6. Herpes zoster within the last five years
7. Recurrent upper respiratory tract infection, e.g. bacterial sinusitis

Stage three

8. Unintentional weight loss > 10% of body weight
9. Chronic diarrhoea > one month
10. Prolonged fever > one month
11. Oral candidiasis
12. Oral hairy leukoplakia
13. Pulmonary TB within the last year
14. Severe bacterial infections, e.g. pneumonia
15. Vulvovaginal candidiasis > one month/ poor response to therapy

Stage four

16. HIV wasting (8+9 or 10)
17. Pneumocystis carinii pneumonia
18. CNS toxoplasmosis
19. Cryptosporidiosis + diarrhoea > one month
20. Isosporiasis + diarrhoea
21. Cryptococcosis – non pulmonary
22. Cytomegalovirus infection other than liver, spleen or lymph node
23. Herpes simplex infection, visceral or > one month mucocutaneous
24. Progressive multifocal leucoencephalopathy
25. Disseminated mycosis
26. Oesophageal/ tracheal / pulmonary candidiasis
27. Atypical mycobacteriosis disseminated
28. Non-typhoidal Salmonella septicaemia
29. Extra-pulmonary tuberculosis
30. Lymphoma
31. Kaposi's sarcoma
32. HIV encephalopathy
33. Invasive cervical carcinoma
34. recurrent pneumonia

Appendix 2: Descriptive analysis of the created health measure

Health measure			
(% replies)			
Indicator	Ill health	Good health	Excellent health
Population group*			
Black/African	14.36	33.50	52.14
Coloured	23.58	58.32	18.11
White	13.41	67.48	19.11
Gender			
Male	16.07	51.79	32.14
Female	19.37	51.84	28.79
Agegroup*			
Young adults (19-22 year olds)	4.41	51.47	44.12
23-30 year olds	4.57	50.23	45.21
30+	21.41	50.64	27.96
60+	36.53	56.29	7.19
Parenthood			
Parent	21.50	51.71	26.79
Not a parent	14.05	51.94	34.01
Employment*			
Employed	11.01	55.42	33.57
Unemployed	24.48	48.64	26.88
Respondent's level of education*			
Primary	36.02	41.71	22.27
Secondary	15.98	51.75	32.27
Tertiary	8.64	60.13	31.23
Household Monthly Income*			
0-1000R	16.48	39.72	43.80
1001-3000R	15.65	42.26	42.09
3001-5000R	11.27	51.05	37.68
5001-10000R	11.99	63.44	24.57
10000R +	4.53	58.07	37.39

Appendix 2 – continued

Health measure	
(% replies)	
Indicator	Ill health
Population group*	
Black/African	22.01
Coloured	30.91
White	21.16
Gender	
Male	24.07
Female	26.54
Agegroup*	
Young adults (19-22 year olds)	8.53
23-30 year olds	10.05
30+	29.63
60+	46.67
Parenthood	
Parent	29.32
Not a parent	21.05
Employment*	
Employed	19.00
Unemployed	31.23
Respondent's level of education*	
Primary	43.27
Secondary	23.10
Tertiary	16.78
Household Monthly Income*	
0-1000R	34.83
1001-3000R	31.84
3001-5000R	25.77
5001-10000R	23.13
10000R +	15.12

Appendix 3: Descriptive analysis of perceived life expectancy for oneself

Perceived life expectancy									
(% replies)									
Indicator	Below 40	40	Uncertain above 40	50	Uncertain above 50	60	Uncertain above 60	70 and above	Unknown
Population group*									
Black/African	0.26	0.26	1.31	0.26	1.83	1.57	7.31	86.16	1.04
Coloured		0.48	1.43	1.19	5.97	3.10	13.13	70.88	3.82
White			0.95	0.95	1.43	3.33	14.29	77.14	1.90
Gender									
Male		0.25	1.23	1.23	3.43	2.94	9.31	79.41	2.21
Female	0.15	0.46	1.37	0.46	3.34	2.28	12.16	77.36	2.43
Agegroup*									
Young adults (19-22 year olds)			1.49	1.49	4.48	2.99	12.69	71.64	5.22
23-30 year olds		0.47	1.87	1.87	2.80	3.74	10.75	75.70	2.80
30+	0.17	0.52	1.39	0.35	3.66	2.26	13.07	76.83	1.74
60+							100		
Parenthood									
Parent	0.17	0.52	1.74	0.52	3.13	1.74	11.48	78.26	2.43
Not a parent		0.20	0.81	1.01	3.65	3.45	10.95	77.69	2.23
Employment									
Employed			1.15	0.57	3.44	3.63	12.21	76.34	2.67
Unemployed	0.19	0.74	1.48	0.93	3.33	1.48	10.19	79.63	2.04
Respondent's level of education*									
Primary		0.57	1.14		2.29	1.71	13.14	81.14	
Secondary	0.17	0.50	1.49	0.33	4.62	2.31	10.23	77.56	2.81
Tertiary			1.08	2.17	1.44	3.61	11.91	76.90	2.89

Appendix 4: Descriptive statistics on perceived life expectancy for children

Indicator	Below 40	40	Uncertain above 40	50	Uncertain above 50	60	Uncertain above 60	70 and above	Unknown
Population group*									
Black/African	0.00	2.27	0.00	0.00	1.89	0.76	4.92	88.26	1.89
Coloured	0.28	3.99	0.85	0.28	7.98	0.85	13.39	59.54	12.82
White	0.00	1.69	0.56	0.00	2.26	0.00	6.78	74.58	14.12
Gender									
Male	0.36	2.51	1.08	0.00	6.45	0.36	8.24	69.89	11.11
Female	0.00	3.06	0.36	0.36	3.78	0.72	9.71	73.02	8.99
Agegroup*									
Young adults (19-22 year olds)	0.00	3.45	3.45	0.00	3.45	0.00	6.90	72.41	10.34
23-30 year olds	0.00	0.93	0.37	0.18	4.02	0.73	8.96	72.58	10.42
30+	0.00	2.74	0.37	0.18	4.02	0.73	8.96	72.58	10.42
60+	0.66	4.64	0.66	0.66	10.60	0.00	9.27	64.24	9.27
Employment*									
Employed	0.00	2.11	0.00	0.00	2.63	0.53	8.42	76.32	10.00
Unemployed	0.22	3.33	1.11	0.44	6.43	0.67	9.76	68.51	9.53
Respondent's level of education									
Primary	0.55	4.40	0.55	0.55	7.69	1.10	12.09	66.48	6.59
Secondary	0.00	2.40	0.44	0.00	4.59	0.66	7.21	7.93	11.79
Tertiary	0.00	2.72	1.09	0.54	1.63	0.00	11.41	75.00	7.61
Respondent's health status									
Ill health	0.55	5.46	0.55	0.55	8.20	1.09	10.38	60.11	13.11
Good Health	0.00	2.52	0.69	0.23	4.59	0.46	10.78	69.27	11.47
Excellent Health	0.00	1.40	0.47	0.00	1.86	0.47	5.12	87.44	3.26

Appendix 5: Descriptives on the general perceived value of education

‘Do you think education is very important, important or not important?’			
(% replies)			
Indicator	Very important	Important	Not important
Population group			
Black/African	94.19	5.81	0.00
Coloured	95.61	4.18	0.21
White	95.24	4.37	0.40
Gender			
Male	94.91	5.09	0.00
Female	95.39	4.34	0.27
Agegroup			
Young adults (19-22 year olds)	96.32	3.68	0.00
23-30 year olds	94.04	5.96	0.00
30+	95.22	4.46	0.32
60+	96.55	3.45	0.00
Parenthood			
Parent	95.50	4.28	0.23
Not a parent	95.21	4.79	0.00
Employment			
Employed	95.68	4.32	0.00
Unemployed	94.91	4.77	0.32
Respondent’s level of education			
Primary	93.36	6.16	0.47
Secondary	94.95	4.89	0.15
Tertiary	97.36	2.64	0.00

Appendix 6: Descriptive statistics for belief in future opportunities

Do you think that in future, people like you will face good opportunities, limited opportunities, or no opportunities?				
(% replies)				
Indicator	Good	Limited	None	Don't know
Population group*				
Black/African	52.53	35.1	10.35	2.02
Coloured	54.39	37.03	5.02	3.56
White	36.51	52.38	7.82	1.98
Gender				
Male	48.67	41.81	7.74	1.77
Female	50.88	37.45	8.68	2.99
Agegroup*				
Young adults (19-22 year olds)	66.18	29.41	1.47	2.94
23-30 year olds	55.71	36.53	5.94	1.83
30+	47.37	41.31	8.77	2.55
60+	37.93	42.53	16.09	3.45
Parenthood				
Parent	48.36	39.44	9.23	2.97
Not a parent	52.6	38.85	6.69	1.86
Employment*				
Employed	51.44	40.61	5.96	1.99
Unemployed	48.89	37.94	10.32	2.86
Respondent's level of education*				
Primary	43.33	38.57	14.29	3.81
Secondary	51.15	38.32	8.09	2.44
Tertiary	52.48	41.91	3.96	1.65

Appendix 7: Descriptive statistics on perceived future opportunities for children

‘Do you think that in future, your children or the children of your friends will face good opportunities, limited opportunities or no opportunities?’				
(% replies)				
Indicator	Good	Limited	None	Don’t know
Population group*				
Black/African	71.97	22.22	0.51	5.30
Coloured	65.27	26.57	4.81	3.35
White	41.27	51.19	5.56	1.98
Gender*				
Male	57.21	34.81	3.19	4.88
Female	65.18	27.37	3.79	3.66
Agegroup*				
Young adults (19-22 year olds)	68.15	25.19	0.74	5.93
23-30 year olds	69.72	25.23	0.92	4.13
30+	60.41	31.64	4.45	3.50
60+	52.30	35.63	6.32	5.75
Parenthood				
Parent	64.76	27.80	4.12	4.12
Not a parent	57.49	34.73	3.59	4.19
Employment*				
Employed	60.22	31.28	4.16	4.34
Unemployed	63.78	29.33	3.04	3.85
Respondent’s level of education*				
Primary	61.43	27.14	4.76	6.67
Secondary	64.63	27.90	3.51	3.96
Tertiary	56.62	38.08	2.98	2.32

Appendix 8: Descriptive statistics on traditional gender beliefs

‘Some people say that a woman’s place is in the home. Do you agree strongly, agree, disagree, or disagree strongly?’						
(% replies)						
Indicator	Strongly agree	Agree	Neither	Disagree	Disagree strongly	Don’t know
Population group*						
Black/African	33.00	21.91	7.56	22.92	13.85	0.76
Coloured	20.08	26.57	7.32	34.31	11.09	0.63
White	6.35	18.65	14.68	37.30	21.83	1.19
Gender*						
Male	22.62	27.94	8.20	29.05	10.64	1.55
Female	20.84	20.30	9.61	31.53	17.32	0.41
Agegroup*						
School age	11.43	20.00	11.43	40.00	17.14	0.00
Young adults (19-22 year olds)	23.53	23.53	4.41	34.56	13.24	0.74
23-30 year olds	23.29	22.37	8.22	30.59	12.79	2.74
30+	20.86	21.50	9.39	32.32	15.45	0.48
60+	22.99	30.46	12.07	18.97	15.52	0.00
Parenthood						
Parent	23.85	25.46	7.80	30.05	12.61	0.23
Not a parent	21.19	23.58	8.66	28.96	16.42	1.19
Employment*						
Employed	16.63	21.48	7.04	35.38	18.41	1.08
Unemployed	26.28	24.52	10.90	26.28	11.38	0.64
Respondent’s level of education*						
No education	33.33	33.33	0.00	22.22	11.11	0.00
Primary	38.86	27.96	6.64	18.96	7.58	0.00
Secondary	21.68	24.58	9.62	32.06	10.84	1.22
Tertiary	9.90	15.51	9.90	35.64	28.38	0.66

Appendix 9: Descriptive statistics on expected reciprocity of care

'Thinking ahead to when you are aged 70, what do you think will be your most important source of income?' (% replies support from children)	
Indicator	Support from children
Population group*	
Black/African	11.14
Coloured	9.44
White	2.39
Gender*	
Male	6.90
Female	9.06
Agegroup*	
Young adults (19-22 year olds)	7.75
23-30 year olds	8.10
30+	8.73
60+	5.45
Parenthood	
Parent	9.54
Not a parent	6.74
Employment*	
Employed	5.95
Unemployed	10.62
Respondent's level of education*	
Primary	10.53
Secondary	9.95
Tertiary	3.33

Appendix 10: Descriptive statistics on the perceived instrumental value of education

'Instrumental value of education'				
(% replies)				
Indicator	2	3	4	5
Population group*				
Black/African	1.01	9.37	47.34	42.28
Coloured	1.70	13.83	54.89	29.57
White	0.81	11.69	54.03	33.47
Gender*				
Male	2.24	11.66	51.12	34.98
Female	0.69	11.88	52.07	35.36
Agegroup*				
Young adults (19-22 year olds)	0	15.44	49.26	35.29
23-30 year olds	1.85	15.74	44.91	37.50
30+	1.62	11.17	53.07	34.14
60+	0.6	5.39	55.69	38.32
Parenthood				
Parent	1.42	9.92	53.23	35.43
Not a parent	1.12	13.97	50.09	34.82
Employment*				
Employed	1.82	15.12	49.18	33.88
Unemployed	0.81	8.41	54.37	36.41
Respondent's level of education*				
Primary	0.96	7.66	52.15	39.23
Secondary	1.85	11.11	51.54	35.49
Tertiary	0.33	16.28	51.50	31.89

Appendix 11: Descriptive statistics on the perceived societal value of education

'Societal value of education'					
(% replies)					
Indicator	1	2	3	4	5
Population group*					
Black/African	0	3.68	24.74	47.89	23.68
Coloured	0.67	9.60	30.36	45.54	13.84
White	0.84	7.95	32.22	47.28	11.72
Gender*					
Male	0.70	8.14	28.60	45.35	17.21
Female	0.29	7.34	29.64	46.91	15.83
Agegroup*					
Young adults (19-22 year olds)	0.00	6.98	24.81	51.94	16.28
23-30 year olds	1.44	7.18	26.32	48.80	16.27
30+	0.34	8.88	29.98	43.38	17.42
60+	0.00	3.77	32.70	47.80	15.72
Parenthood					
Parent	0.32	7.62	30.30	45.71	16.05
Not a parent	0.59	7.84	27.84	46.86	16.86
Employment*					
Employed	0.76	10.80	30.30	41.67	16.48
Unemployed	0.17	5.05	28.11	50.17	16.50
Respondent's level of education*					
Primary	0.00	3.03	21.21	53.54	22.22
Secondary	0.48	7.36	29.92	45.44	16.80
Tertiary	0.69	12.07	31.72	43.79	11.72

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