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Effects of Objective and Subjective Income Comparisons on Subjective Wellbeing

by

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Effects of Objective and Subjective Income Comparisons on Subjective Wellbeing

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ABSTRACT

We present results from the Cape Area Panel Study dataset investigating how social comparisons with regard to income affect subjective wellbeing of both young adults and parents. Objective and subjective measures of relative income are used, assessing how individuals compare themselves to others and to themselves over time. Strong evidence is found to suggest that social comparisons affect subjective wellbeing, both relative to neighbors and relative to oneself in the past. Objective measures of wellbeing also influence happiness, but this is more prevalent in interpersonal than intertemporal comparisons. It is possible that some adaptation does occur within individuals over time.

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INTRODUCTION

Happiness is arguably the ultimate goal of life. Almost all human pursuits are merely a means to attain happiness. Even economic growth, one of the most important goals of economics and the most commonly used means of evaluating progress, is perhaps only a means to this end. Thus, the importance of happiness in evaluating progress in human society has increasingly found many advocates, including prominent public figures and economists, such as Ben Bernanke¹. This has in part been driven by the successful and enlightening use of subjective wellbeing – that is, individual reported wellbeing – in empirical analyses, which has in the last two decades become an increasingly popular research tool. First initiated by the seminal paper of Richard Easterlin (1974), where he outlined his famous Easterlin paradox, the sub-discipline of happiness economics began slowly over the ensuing two decades, before becoming widespread in the mid-nineties. Kahneman and Kreuger (2006) cite EconLit as recording only 4 papers using happiness in the period 1991 – 1995, up to over 100 across the same period a decade later. There are now dedicated journals and thousand's of papers on the subject. Its consistent results and usefulness in providing an alternate, albeit subjective, view on almost any economic topic suggests that as an analytical tool it is here to stay. Distinguishing between happiness and subjective wellbeing is however important. In a more recent paper Kahneman and Deaton (2010) illustrates differences in correlates between emotional wellbeing (including happiness) and evaluation of life (or subjective wellbeing), where the former tend to be more strongly correlated with health, care giving and loneliness while income and education is more closely related to subjective wellbeing.

In this paper, we first give an overview of the emerging literature on subjective wellbeing in economic and discuss some of the key findings as well as the main challenges in using subjective wellbeing metrics in econometric analyses. We then also explore one of the key determinants of subjective wellbeing – social comparisons. How an individual compares themselves to reference

¹ University of South Carolina Commencement Address, 8 May 2010.

groups has been shown in multiple economic and psychological studies to have a significant impact on reported happiness (Clark et al, 2008) and by looking at several social comparison variables, we show the strong impact that these can have. This paper extends the literature on happiness by investigating the effect that both objectively and subjectively defined relative income and wealth measures have on subjective wellbeing as well as investigating this effect in a developing country. Another contribution of this paper is that we study how individuals' happiness is affected by relative changes in their own income over time, and not only how their happiness is affected by social comparisons in the same time period, as is most common in such studies (Luttmer, 2005). We also show that although it is possible that interdependencies exist within a household (Kingdon and Knight, 2007), depending on the comparator used the effect on satisfaction with life may differ for young adults and parents within the same household. Section I gives a brief overview of the literature, while section II covers the data and methodology used. In section III we discuss the results from this study and finally section IV concludes.

I. A BRIEF OVERVIEW OF THE LITERATURE

In the next section we briefly cover conceptual issues pertaining to subjective wellbeing, its determinants, measurement and examples of economic applications. The last section specifically focuses on the role of social comparisons and relative income on subjective wellbeing.

Set point theory has been put forward as a means of explaining individual true happiness. It states that individuals have a unique mean level or set point of happiness. Events and circumstances can cause a deviation from this set point; however, there is ultimately a reversion back to this mean level of happiness as adaptation to circumstances occurs. The set point is determined mainly by genetic and personality factors. Evidence does support set point theory and it has been studied widely (Magnus and Diener, 1991 and Heading and Wearey, 1989). It has been shown that a large part of the variance of subjective wellbeing is explained by these unique individual genetic factors. In a study on twins

growing up in separate homes, it was found that there was little difference between their subjective wellbeing, leading to the conclusion that between 40% and 55% of the variance in happiness can be put down to genetic factors (Tellegen *et al.*, 1988). In a similar study, looking at long term subjective wellbeing, it was concluded that as much as 80% of the long term variance is due to inherent individual characteristics (Lykken and Tellegen, 1996).

It would seem that given this, the study of happiness is an almost futile exercise. However, while personality does feature as important determinant, other factors, such as circumstantial and social demographic factors have been found to play a role, albeit a much smaller one. Argyle (1984), concludes that 15% of the explained variance of happiness is due to these external factors, based on a general survey of the psychological literature on the subject. Supporting this, Veenhoven (1994) finds that happiness *is* influenced by changing circumstances and adversity, making the study of happiness a worthwhile endeavour. All of this is probably best summarized in Diener *et al.*'s (1999) thirty year review of subjective wellbeing, when they conclude that “*subjective wellbeing has both trait-like and state-like properties.*” The other 30% - 40% of happiness not explained by circumstantial and personality factors is explained by a host of other aspects such as activities, personal relationships and other factors (Lyubomirsky *et al.*, 2005 and Frey and Stutzer, 2002).

While these address the determinants of the set point, what of deviation from such a set point? Again, if there is pure and complete mean reversion, studies in happiness would yield little results, especially over time. As an evolved human trait, adaptation and coping with severe life events does occur and is posited as returning individuals to their largely genetically determined set point (Lyubomirsky *et al.*, 2005 and Diener *et al.*, 1999). This was outlined in a famous study by Brickman *et al.* (1978) showing that lottery winners over time were not significantly happier than the control group and victims of spinal injuries were happier than they were expected to be given their disability. Similar findings on paraplegics were also outlined in Silver (1982). However, Easterlin (2005) points out some problems with these studies, sample size among others, and notes that while there was some adaptation, it was not complete. Other studies, on a much larger scale, have found that with regard to

noise and health related events, evidence supports an incomplete adaptation (Frederick and Loewenstein, 1999; Mehnert *et al.*, 1990 and Oswald and Powdthavee, 2005).

The findings above indicate that a large extent of happiness is determined by personality which also determines an inherent individual set point. Situational, circumstantial and demographic factors can influence this set point as well as cause temporary deviation, which over time returns (completely or partially) to the set point by means of adaptation.

More recent literature has also identified the important role of comparisons in subjective wellbeing, also termed rivalry in the literature. This refers to both intra- and interpersonal relative positions. While *intra*-personal comparisons refers to how individuals compare themselves to where they want to be (aspirations) or where they were in the past (Michalos, 1985 and Diener& Fujita, 1995), *interpersonal* comparisons refer to how individuals compare themselves to others (Frey and Stutzer, 2002). Unrealistically high or low aspirations have been found to have a negative effect on happiness whilst relative position compared to other people, on a range of variables but especially income, tend to increase happiness if above the mean, and vice versa (Frey and Stutzer, 2002). These relative effects are strong determinants of subjective wellbeing, one of the key determinants alongside personal and circumstantial aspects outlined earlier (Blanchflower and Oswald, 2003). A more in depth discussion of social comparisons follows at the end of this section.

The measurement of subjective wellbeing has also been much debated in the literature. Frey and Stutzer (2002) highlight reliability and validity as metrics by which subjective wellbeing can be evaluated. Reliability issues has been discussed by Lucas *et al.* (1996), Fordyce (1988), Headey and Wearing (1991), Frey and Stutzer (2002) and also Kahneman and Kreuger (2006) whereas validity concerns has been addressed by Sandvik *et al.* (1993), Costa and McCrae (1988), Urry *et al.* (2004), as well as Kahneman and Kreuger (2006). For reasons of brevity we will not consider measurement issues in detail here, but to conclude from the varied and rich literature on the topic, it would seem that subjective wellbeing can be used successfully in a meaningful empirical analysis.

While methodological concerns and room for bias exist, no social science measure is perfect and these biases do average out over large samples (Frey and Stutzer, 2002). Frey *et al.* (2004) encapsulate much of the above succinctly by concluding, “*Nevertheless, happiness or reported subjective wellbeing is a satisfactory empirical approximation to individual utility, with fruitful applications in empirical economic research from which economists should not be too shy to learn.*” Examples of such successful and highly consistent applications have been widespread, studying the effects of noise pollution (Van Praag *et al.*, 2004), flooding (Luechinger *et al.*, 2009), inflation and employment (Di Tella *et al.*, 2001), terrorism (Frey *et al.*, 2008), air quality (Levinson, 2009 and Luechinger, 2008), economic performance (Oswald, 1997), neighborhood satisfaction (Fried, 1984), crime (Powdthavee, 2005) and inequality (Alesina *et al.*, 2004) while other studies investigate the structure of happiness functions (Hinks and Gruen, 2005 and Graham 2005) and how they differ across cultures and countries (Powdthavee, 2007).

Social comparisons, which is the primary focus of this paper, were mentioned earlier and have been found to be an integral part in determining an individual’s happiness. The Easterlin paradox (Easterlin, 1974), which gave rise to the study of happiness, has been explained by including an understanding of the strong happiness effects brought on by relative position or status effects in society (Clark *et al.*, 2008). Despite rapid increases in real income over several decades, the lack of improvement in happiness over time (both within and across countries) has been ascribed to both adaptation to higher incomes as well as continual relative comparisons to others that exist irrespective of the level of income. There is a finite amount of status to go around in society – it is a zero sum game – and thus consumption by one individual, exists as a negative externality affecting other members of society. This leads to individuals striving for happiness by trying to perform better than those surrounding them, irrespective of their actual level of wealth. Knight and Song (2006) find that relative as opposed absolute income, is twice as important for individual wellbeing. This was true even for poor regions in China, where these study was based. Similarly Bookwalter and Dalenberg (2010) finds the positive effect of relative economic standing on subjective wellbeing to be three times greater than that of own expenditure in a study conducted in South Africa. In another study

using South African data Kingdon and Knight (2007) found that the effect of social comparisons may be positive or negative depending on the social distance from the reference group.

As a result of these strong income comparison effects Luttmer (2005) and Clark *et al.* (2008) motivate for inclusion of relative income into the standard utility function because evidence points to interpersonal preferences as being the driving force behind the impact that social comparisons have on happiness. The utility function proposed in both the Luttmer (2005) and Clark *et al.* (2008) papers has the general form $U(Y, Y/Y^*)$, where Y and Y^* are income and some income level to which an individual compares themselves to, such as mean neighbourhood income. In order to understand such a utility function, a clearer understanding of the reference group to which an individual compares themselves is needed. Numerous possible sub-populations have been put forward, some being age, education level, colleagues and people who live in close proximity to the individual concerned – who will often share a host of other characteristics. Even intertemporal comparisons are made and have been shown to affect happiness, such as Bookwalter and Dalenberg's (2010) study which showed that being wealthier than ones parents, had a positive impact on wellbeing. A more recent study by D'Ambrosio and Frick (2012) introduces a further dynamic component which allows for analysis of how one performs in absolute and relative terms to one's own and others' past incomes respectively.

A further distinction is made in objective and subjective measures of relative income. Subjective measures are self defined by the respondent, whereas objective measures are based on external variables, such as average neighborhood income. The use of subjectively and objectively defined independent variables in happiness studies is of particular importance as *how an individual perceives themselves*, the subjective variable, may affect their happiness in a way that the measure defined objectively would not. For example, while self reported health has traditionally been an important determinant of subjective wellbeing, objectively defined health measures such as trips to doctors or independent assessments of respondent's health has shown to have a smaller impact on wellbeing, if any at all. This is especially true for long term and chronic illnesses, were some adaptation has occurred. This however, interestingly, is not the case with relative income. Studies have shown that both objectively defined relative income (Luttmer, 2005) and subjective measures of wellbeing

(Bookwalter and Dalenberg, 2010) have similar impacts on happiness – even after long periods of time. This further suggests that relative income is fundamental to an individual's happiness and is not susceptible or sensitive to adaptation to the same extent as personal or external evaluations of where an individual lies on the income spectrum.

II. DATA AND METHODOLOGY

DATA

The dataset used for the analysis of relative income is the Cape Area Panel Study² (CAPS), which tracked young adults in Cape Town across several waves. Wave 3, collected in 2005, included a young adult, parent and household questionnaire. In total 4752 young adults (YAs) from 3306 households were interviewed. A parent or older adult were interviewed for only a subsample (41%) of households, bringing the number of parents interviewed to 1962. Whereas the YA sample contains a more or less equal proportion of males and females, the parent sample constituted predominantly (82.9%) females. The average age of the YA sample is 20.6 years while for the parents sample it is 48 years. Table 1 gives some descriptive statistics of our dependant variable and other covariates used in the subsequent analysis.

>> TABLE 1 HERE <<

The young adult and parent questionnaires both included the question on subjective wellbeing used as dependent variable in this paper: *‘Taking all things together, are you very happy, happy, a little happy or not happy?’*³ The distribution of the dependant variable, subjective happiness, exhibit the

² The Cape Area Panel Study Waves 1-2-3 were collected between 2002 and 2005 by the University of Cape Town and the University of Michigan, with funding provided by the US National Institute for Child Health and Human Development and the Andrew W. Mellon Foundation. Wave 4 was collected in 2006 by the University of Cape Town, University of Michigan and Princeton University. Major funding for Wave 4 was provided by the National Institute on Aging through a grant to Princeton University, in addition to funding provided by NICHD through the University of Michigan.

³ Unfortunately this question did not appear in the survey for other waves of this panel, which meant that we could not fully exploit the panel nature of the dataset for the purposes of this analysis.

common skewness that is found in subjective wellbeing surveys for both the young adult (YA) and Parent samples.

Both questionnaires further have extensive information on all the socio-economic details for the youths, parents and their households, as well as a variety of other personal data. In particular, CAPS collected detailed information on income and asset ownership, as well as relative income by asking how individuals compared to others in their neighborhood and to themselves over several past time periods.

CAPS is based on a two stage stratified sample design, with the primary sampling unit being the enumerator areas (EA) used in the 1996 census conducted by Statistics South Africa. The stratification was by majority population of the EA for the three major population groups in the Cape Town region: black, coloured and white. This weighting and sample design were accounted for in the analysis. Information on Indians was collected, however is ignored in this study due to their small size in Cape Town relative to the three other race groups.

METHODOLOGY

In order to estimate a happiness function, we employ a version of the standard form of a reported wellbeing function used in the literature:

Where W is the reported wellbeing, U the individual's utility function observable only to him/herself with determinants Z being the demographic and socioeconomic factors and R the specific relative measures that we wish to study. H is a continuous and non-differentiable function that relates this unobservable utility to the reported wellbeing. All the other factors that determine happiness are

reflected in the error term ϵ , as well as any inability an individual may have in expressing their true wellbeing.

We make use of an ordered probit regression to take account of the ordinal nature of the happiness variable, as this is the standard means of estimating a happiness function in the literature. We first proceed by specifying a parsimonious happiness function, consisting of core socio-economic variables that are widely used in the happiness literature and have been shown to affect individual happiness (Frey and Stutzer, 2002). These are the natural logarithm of per capita household income, age, employment, sex, race, self reported health, and education level. Owing to the nature of the dataset, which is two-thirds young adults aged 18-26 and a third parents and guardians aged 35 and onwards, some variables had to be tailored differently from what would normally appear in datasets that did not have such a split. These are explained in detail in the results section below. We also control for household level clustering to account for households where more than one young adult and/or a parent were interviewed.

III. RESULTS

Table 2 and 3 below respectively presents the ordered probit results of the analysis undertaken to determine the effect of relative income on interpersonal social comparisons and intrapersonal comparisons (how the same individual compares him/herself over time – also referred to as habituation in the literature and used interchangeably here) on individual happiness. We use both subjective and objective measures of income to assess whether interpersonal, as well as intrapersonal comparisons regarding income matters for happiness. This is discussed in more detail further on.

Since our sample consists of two quite distinct groups we show the results for Young Adults (YAs) and Parents in separate columns in Table 2 and 3, allowing us to establish whether the social comparisons referred to above equally apply to both groups. The results for the pooled data sets (controlling for household level clustering) are included in Appendix II & III.

A number of standard covariates, including sex, age, population group, household income, education, were controlled for in the regressions. *Log income* is the natural logarithm of per capita household income while *sex*, *age* and *race* variables are self explanatory. *Completed school* is a dummy that takes a value of 1 if the respondent has completed secondary school. A more detailed breakdown of education was not possible as almost all respondents had completed primary school, owing to the fact that the area covered was urban. Given the young adult and parent split of the dataset, there were a small number of respondents who had completed tertiary study, with a much higher number currently enrolled. This was taken into account through the *unemployed*⁴ variable. *Unemployed* takes a value of 0 if the respondent is either a full-time student, has a job or is retired and/or does not desire a job. The last base variable is *Good Health* and is derived from an individual's own assessment of their health. The variable takes a value of 1 if the respondent has above average health and 0 if s/he has average or poor health – poor health and average health were merged into one owing to the small number of respondent stating they had poor health, again this is possibly due to the high proportion of young adults in the sample.

The results in the regressions in both Table 2 & 3 indicate that much of the factors that affect subjective wellbeing across the world, also affect South Africans. Although females are commonly happier than males (Frey and Stutzer, 2002) this findings have generally not been replicated in similar studies undertaken in South Africa (Hinks and Gruen, 2005 and Powdthavee, 2004). We find that while being female has a positive effect on happiness the result is not significant for most of our regressions. Whites and coloureds are consistently happier than blacks, a result noted in many studies, both in South Africa (Hinks and Gruen, 2005 and Powdthavee, 2004) as well as in other countries, such as the USA, where Graham (2004) noted a clear distinction between African-American's and white American's happiness levels. Education level, although measured narrowly here, is found to have substantial and significant influence on happiness for the Young Adult sample but for Parents its effect seems to have attenuated and is no longer significant. However, being unemployed and having good health, subjectively defined at least, have important affects on

⁴ The standard definition of employment in South Africa was used to create this variable; that is, someone who does not work but wants to and has actively looked for work in the last seven days.

individual wellbeing – further common findings in the international literature (Frey and Stutzer, 2002). Both sets of results are consistently significant for YAs and Parents in our sample.

Given the unique bi-modal age profile of our dataset it is interesting that *Age* was not found to be significant in our Parent sample, while for the Young Adult sample the effect is generally negative and significant. Conversely as is evident from both Tables 2 & 3, household income seems to matter (the large and highly significant estimates are robust across regressions) for the Parent sample while Young Adults' subjective wellbeing do not seem to be affected by absolute income levels. For parents, the finding that income is important is consistent with most papers in the happiness literature (Frey and Stutzer, 2002 and Powdthavee, 2007). No papers were found that compare income by age and it is possible that young adults may place less emphasis on absolute income until they progress to the final stages of adulthood that require them to be financially independent. Further investigation in this area is needed. Our findings with regards to income however also hold in the case of objective interpersonal social comparisons as we will discuss in more detail below.

>> TABLE 2 HERE <<

Six different measures of relative income and wealth were used in the analysis to investigate the effect of social comparisons on subjective wellbeing. As mentioned earlier we focused on both inter- and intra-personal comparisons. In Table 2 the results for the inter-personal comparisons are shown. The first subjective measure included in regressions I & II is based on a comparison of the household's financial situation to that of their neighbors. It is self-assessed or subjective in that the respondent of the household interview evaluated how their household compares to other households in the neighborhood – either worse, the same or better. The results are highly significant for both Young Adults and Parents and clearly show that how one compares to your immediate neighbors has an important bearing on your own individual happiness. This is a very common result, notably found by Luttmer (2005) and more recently by Clark and Senik (2011), who unlike Luttmer also used

subjectively defined measures. They also found that the intensity of the comparisons decreases with income – the rich care less about their relative standing than the poor.

We also employ two objective measures of relative effects in regression III to VI. In regressions III & IV (Table 2) the mean income of the neighborhood was calculated and the dummy variable *above nbhd mean income* was created and takes the value of one if an individual's income (per capita household income) is above the neighborhood mean and zero otherwise. This *objectively* defined measure of relative income was found to have no impact in the case of Young Adults (Regression III) whereas for parents relative standing also seems to matter when objectively defined. Parents in contrast with Young Adults may however be more sophisticated in their ability to discern income differences between households based on information such as the education received and nature of the jobs held by members of other households.

In the fifth (V) and sixth (VI) regressions (Table 2), another objective variable is included, this time comparing relative consumption of durable (but also *positional*) goods among households in the same neighborhood. The variable was constructed additively from the ownership of 14 household assets, namely a telephone, mobile phone, radio, television, video machine, fridge, stove, washing machine, microwave oven, bicycle, motorbike, car, computer and if the home had more than five books. The dummy takes a value of one if the household has more of these assets than the mean of other households in the neighborhood. As can be seen from the last two columns of results, the variable is highly significant for Parents and Young Adults. It is possible that the more conspicuous nature of the latter variable, which includes durable goods and specifically positional goods such television sets and cars (see Carlsson *et al.*, 2007) is more important for interpersonal social comparisons, but moreover that it may be easier for Young Adults less familiar with finances to judge the relative welfare of a household based on the presence of such goods.

In Table 3 we present the results from our analysis of intrapersonal comparisons. Once again both subjective and objective measures were employed. Here regressions I to IV are based on subjective, self-assessed, evaluations but looks at how a household compares their financial situation with

themselves one year ago (regressions I & II) and three years ago (regressions III & IV). Individuals were asked if they perceive themselves as being worse off, the same or better off than one (or three) years ago. Those that are in the same position financially as they were one (and also three) years ago are not much happier than those that are worse off (and these estimates are not significant in any of our regressions). However, individuals that find that they are more comfortable financially one and three years later are happier than those individuals whose financial situation got worse. In the case of the 3 year comparison, the result is only significant for Young Adults, whereas for the 1 year comparison, the result is highly significant for both Parents and Young adults. An important theme in social comparisons is that of mean reversion and adaptation to situations. These results suggest that over as much as three years, individuals who perceive themselves as wealthier relative to their earlier selves are likely to be happier, and not adapt to their new income level. In the case of our Parent sample adaptation did not occur over the 1 year interval but it may have started setting in after a three year interlude.

>>TABLE 3 HERE<<

Exploiting the panel nature of the CAPS dataset allowed us to *objectively* compare how household income had actually changed between wave 3 and wave 1, the period of three years between 2002 and 2005. These results are shown in the last two columns of Table 3. Interestingly, it was found that households that had actually experienced a real or objective increase in income did not result in significant increases in subjective wellbeing in case of the Young Adult and also Parent samples. The discrepancy in the significance of subjectively defined and objectively defined intertemporal income comparisons might suggest that an individual's perception of how their financial situation has changed is more important to their happiness than how it has actually changed, and that indeed some form of adaptation to new income levels might occur. Our analysis also indicates that while interdependencies may exist within a household (Kingdon and Knight, 2007), the effect on satisfaction with life may differ for Young Adults and Parents within the same household, depending on the nature of the social comparison being made.

IV. CONCLUSIONS

This paper has done two things. First, it presented the case for the growing field of happiness economics and second demonstrated the powerful effect that social comparisons, in the form of income, have on individual happiness. It would seem that on the whole, happiness economics can provide unique insights and is a robust research tool that can be applied to many areas both within and beyond the realm of traditional economics. It is not without concern however, but through proper techniques and careful analysis, meaningful results can be obtained.

Our results suggest that social comparisons, proxied by relative income, have a strong impact on subjective wellbeing, measured over a variety of dimensions. Comparisons are not merely based on the individuals' own perceptions of how they differ from their neighbors, they are also in part based on objectively defined metrics of relative wealth or deprivation, although the results are more robust for subjective measures. We do find that when the objective measure reflects the household's asset holdings and particularly the more visible durable goods measure of wealth, this has a significant effect on happiness of both young adults (YAs) and Parents in our sample.

This paper has extended previous studies on the matter by showing that individuals compare not only to those around them, but to themselves across different time periods or intertemporally as well. These intrapersonal comparisons indicate that the effect of being wealthier than your earlier (or past) self, holding current income constant, has a strong impact on one's subjective wellbeing. This effect is not short-lasting either, but spans at least three years for young adults (YAs) according to our findings. In line with Blanchflower and Oswald (2003) our results confirm the importance of social but also intertemporal comparisons on individual wellbeing or happiness. This effect was stronger when using subjective compared to objective measures of changes in income, suggesting that some form of adaptation does occur. Lastly, our findings indicate that depending the type of social

comparisons being made, there may be differences in the effect of such comparisons on wellbeing of different members of a household.

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APPENDICES

Appendix I: Interpersonal Social Comparisons (Pooled)

	Relative Nbhd (Pooled)	Nbhd Mean Inc (Pooled)	Ndhb Mean Goods (Pooled)
Log Income	0.028 (0.021)	0.036 (0.024)	0.040 ** (0.020)
Sex	0.059 (0.038)	0.093 *** (0.036)	0.094 *** (0.036)
Age	0.000 (0.002)	0.000 (0.002)	0.000 (0.002)
White	0.381 *** (0.080)	0.403 *** (0.083)	0.407 *** (0.077)
Coloured	0.204 *** (0.044)	0.248 *** (0.044)	0.245 *** (0.043)
Completed School	0.058 * (0.034)	0.053 (0.033)	0.044 (0.033)
Unemployed	-0.228 *** (0.043)	-0.251 *** (0.042)	-0.246 *** (0.042)
Good Health	0.289 *** (0.039)	0.297 *** (0.037)	0.300 *** (0.037)
Same Income as Neighbors	0.273 *** (0.051)		
More Income than Neighbor	0.352 *** (0.059)		
Above Nbhd Mean Income		0.06628 (0.043)	
Above Nbhd Mean Goods			0.124 *** (0.036)
Observations	4241	4660	4621
Wald Chi2	261.13 ***	254.98 ***	259.36 ***
Pseudo R2	0.03	0.026	0.0272
Log Pseudolikelihood	-4738.9	-5171.1	-5119.8

***, ** and * indicate 10%, 5% and 1% significance respectively. Reference variables are: male, black, less than Grade 12 education, employed or full time student, average or poor health. Interpersonal Relative income reference variables are: Less Income than neighbours.

Appendix II: Intrapersonal Social Comparisons (Pooled)

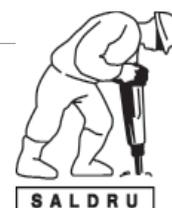
	Relative Self 1 year ago (Pooled)	Relative Self 3 years ago (Pooled)	Own inc > than 3 years ago (Pooled)
Log Income	0.041 ** (0.021)	0.042 ** (0.021)	0.068 *** (0.022)
Sex	0.092 ** (0.036)	0.085 ** (0.037)	0.092 ** (0.036)
Age	0.000 (0.002)	0.001 (0.002)	0.000 (0.002)
White	0.395 *** (0.077)	0.380 *** (0.079)	0.324 *** (0.077)
Coloured	0.241 *** (0.043)	0.250 *** (0.044)	0.220 *** (0.044)
Completed School	0.055 * (0.033)	0.062 * (0.033)	0.048 (0.033)
Unemployed	-0.247 *** (0.042)	-0.251 *** (0.043)	-0.251 *** (0.042)
Good Health	0.296 *** (0.037)	0.299 *** (0.038)	0.295 *** (0.037)
Same Income as 1 year ago	0.070 (0.048)		
More Income than 1 year ago	0.174 *** (0.048)		
Same Income as 3 years ago		0.037 (0.052)	
More Income than 3 years ago		0.125 *** (0.048)	
Real Mean Income > than 3 yrs ago			-0.053 (0.040)
Observations	4610	4502	4660
Wald Chi2	265.26 ***	253.36 ***	252.32 ***
Pseudo R2	0.0278	0.0272	0.0259
Log Pseudolikelihood	-5099.9	-4990.8	-5171.5

***, ** and * indicate 10%, 5% and 1% significance respectively. Reference variables are: male, black, less than Grade 12 education, employed or full time student, average or poor health. Intrapersonal income reference variables are: Worse off than 1 year ago, worse off than 3 years ago.

southern africa labour and development research unit

The Southern Africa Labour and Development Research Unit (SALDRU) conducts research directed at improving the well-being of South Africa's poor. It was established in 1975. Over the next two decades the unit's research played a central role in documenting the human costs of apartheid. Key projects from this period included the Farm Labour Conference (1976), the Economics of Health Care Conference (1978), and the Second Carnegie Enquiry into Poverty and Development in South Africa (1983-86). At the urging of the African National Congress, from 1992-1994 SALDRU and the World Bank coordinated the Project for Statistics on Living Standards and Development (PSLSD). This project provide baseline data for the implementation of post-apartheid socio-economic policies through South Africa's first non-racial national sample survey.

In the post-apartheid period, SALDRU has continued to gather data and conduct research directed at informing and assessing anti-poverty policy. In line with its historical contribution, SALDRU's researchers continue to conduct research detailing changing patterns of well-being in South Africa and assessing the impact of government policy on the poor. Current research work falls into the following research themes: post-apartheid poverty; employment and migration dynamics; family support structures in an era of rapid social change; public works and public infrastructure programmes, financial strategies of the poor; common property resources and the poor. Key survey projects include the Langeberg Integrated Family Survey (1999), the Khayelitsha/Mitchell's Plain Survey (2000), the ongoing Cape Area Panel Study (2001-) and the Financial Diaries Project.



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