THE DETERMINANTS OF SUBJECTIVE WELL-BEING IN SOUTH AFRICA – AN EXPLORATORY ENQUIRY

Derick Blaauw#

University of Johannesburg

pfblaauw@uj.ac.za

Anmar Pretorius+

Monash South Africa

anmar.pretorius@monash.edu

May 2012

Abstract

The study of subjective well-being is no longer on the periphery of study in the field of economics. A significant body of literature exists on the determinants of subjective well-being in the developed world. This paper uses the first wave of the National Income Dynamics Survey (NIDS) dataset to investigate the determinants of subjective well-being in South Africa, involving a broad range of economic, socio-economic and attitudinal variables identified from literature. Ordinary Least Squares and ordered probit estimations reveal that age, race, level of income, years of education, gender, marital status and the number of children explain varying levels of well-being. Unlike studies in the developed world, respondents' height, health and residence in urban areas do not explain well-being. Two of the surprising findings point towards the significant influence of religion and provincial location in determining well-being in South Africa.

Keywords

subjective well-being, happiness, NIDS, ordered probit, OLS

_____

#Prof Derick Blaauw is associate professor at the Department of Economics and Econometrics, University of Johannesburg, South Africa.

+Ms Anmar Pretorius is a lecturer at the Department of Economics, Monash South Africa, South Africa.

1. INTRODUCTION

For many years the study of well-being was at the periphery of the study field of economics as a result of the disciplinary paradigm of logical positivism. This changed during the last three decades as the notion of happiness and its application in economics came more and more to the fore, with the seminal work of researchers like Richard Easterlin (1974; 2001) leading the way. Easterlin's 1974 paper is regularly hailed as an early (re)introduction of subjective well-being into economics (MacKerron, 2012). Of late, Helliwell and Barrington-Leigh (2010) postulated that increasing consciousness is being raised in academic, policy, and public areas to subjective measures of well-being. The study of well-being is linked in the literature with macro-economic issues, behavioural economics as well as environmental and ecological economics (MacKerron, 2012). This represents an essential move towards more realism in the study of economic behaviour and provides an interface with psychological and sociological aspects underlying economic choices.

This paper explores the possible determinants of subjective well-being in South Africa. In doing so, the paper expands the body of knowledge on subjective well-being in South Africa by incorporating a range of variables coming from the international literature in a South African context. It contributes to informing policy debates in South Africa, and in the region, on issues of social protection and quality-of-life facing its citizens, against a backdrop of high unemployment and severe poverty.

The determinants of happiness have been the subject of a variety of studies in the developed world. A considerable volume of literature has emerged on the determinants of well-being in developed countries. Studies in a developing world context, focusing mostly on specific aspects of various labour markets, have added more depth to the development debate (Tiwari, 2009). Most studies on subjective well-being in transitional economies focus on either rural areas or gender groups. Examples of this include the studies by Knight and Gunatilaka (2010) on the levels and determinants of the subjective well-being of migrant workers in China as well as the work of Gao and Smyth (2010).

Previous research provided evidence of the potential adverse effect of unemployment at an individual level on subjective well-being (Winkelmann, 2009). The continual high levels of unemployment and the harshness of absolute poverty in South Africa has been well documented. Yet, happiness studies in the South African context are limited, mainly as a result of data constraints. The NIDS-data set offers a unique opportunity to focus research attention on this under-researched phenomenon. Recent work by Booysen and Botha (2011) and Ebrahim, Botha and Snowball (2011) are examples of the work being conducted in this area. Given the government's priority of improving the quality of life of South Africans, there exists scope and clear motivation to determine the factors responsible for subjective well-being at a broader level than merely looking at income levels (Gerdtham & Johannesson, 1997). Quality of life is a more nuanced concept and deserves more attention from researchers. Hence, the research question that is explored in this paper is what constitutes the important determinants to subjective well-being of adults in South Africa?

2. LITERATURE REVIEW – THE DETERMINANTS OF WELL-BEING / HAPPINESS

Reviewing the literature on potential determinants of subjective well-being reveals changing perspectives over time in terms of key variables. The view towards the effect of income on happiness is a case in point. Intellectuals and philosophers (e.g. Rousseau in 1762) warned though that wealth spoils the mind and is, therefore, not good for you (Hirata, 2011). In a seminal article, Easterlin (1974) concluded that well-being measures are not related to national prosperity. This finding was based on a small sample of nations (Diener et al., 2009b). This argument has been continuously challenged by contradicting empirical evidence (Cummins, 2000). A relative strong correlation between well-being and national income levels is now accepted in the literature.

Diener et al. (1993) established that income is correlated with subjective well-being in lower-income countries. The relationship is more distinct in developing countries as opposed to developed countries. The reasoning is that once a certain benchmark of income is achieved in developed countries, further increases in income do not aid elevated levels of well-being (Clark, Frijters & Shields, 2008).

Theory suggests that income is positively associated with individual well-being, particularly in the case of poorer people (Diener et al., 2009a). Cummins (2000) found that personal income is important for subjective well-being, especially for people who are poor. Nielsen, Paritski and Smyth (2010) concurred. The positive relationship between happiness and absolute income is considered to be one of the most well-established stylised facts in the well-being literature (Ebrahim et al., 2011; Hirata, 2011). The debate recently shifted focus to the relative or absolute nature of the relationship (Veenhoven, 1991; Diener et al., 1993).

The absolute argument maintains that

> "... income helps individuals meet certain universal needs and therefore that income, at least at lower levels, is a cause of subjective well-being. The relativity argument is based on the idea that the impact of income or other resources depends on changeable standards such as those derived from expectancies, habituation levels, and social comparisons" (Diener et al., 1993).

Significant empirical evidence is available that subjective well-being depends on relative income as well, as defined by the reference group or the reference timeframe that people have in mind (Kingdon & Knight, 2003 and 2007). Happiness is, therefore, strongly affected by the positional status in society (Clark et al., 2008; Ebrahim et al., 2011).

Most of the research on happiness, published in typical economics journals dealt with absolute and relative income as well as macro-economic variables such as unemployment (MacKerron, 2012). The determinants of happiness are not limited to absolute and relative income (Kingdon & Knight, 2003). There is increasing interest in other explanatory influences, such as indicators of social and environmental capital (MacKerron, 2012).

Subjective well-being is also connected with a range of social, economic, and cultural characteristics of nations (Diener et al., 2009a). A first-rate overview of the factors emerging from acknowledged research is offered in Diener et al. (1999). Frey and Stutzer (2002) and Dolan, Peasgood and White (2008) provide further well-written reviews of the extensive economics literature on the determinants of well-being.

Demir and Weitekamp (2007:182-183) proposed a grouping of three main factors that influence happiness. These are, firstly, the so-called happiness set point (assumed to be heritable, fixed and stable over time), followed by circumstances (geographical, demographical and contextual variables) and intentional activities (voluntary and purposeful actions by individuals). The depth of the NIDS data enables us to include a variety of variables from these categories.

Factors identified in the literature apart from absolute and relative levels income include religious activities, social trust, physical exercise, health and marital status (Booysen & Botha, 2011). These factors play a role in both rich and poor geographical areas. Even amidst the relentless poverty of rural China, factors such as attitudes, social comparisons and aspirations have an impact on the subjective well-being of the locals (Knight, Song & Gunatilaka, 2009). In the South African context, Greyling (2011) acknowledged issues such as service delivery, levels of human development, social relations, material well-being and issues of governance and safety as central to explaining the variation in the quality-of-life scores of people in the Gauteng City region (GCR). Data permitting, possible variables stemming from the above literature will be included in the empirical analysis.

Additional important socio-economic variables can also influence the level of subjective well-being of individuals. Gender is a pertinent example (Gerdtham & Johannesson, 1997). Stevenson and Wolfers (2009) show that measures of subjective well-being indicate that the level of happiness of women in the United States has declined in absolute and relative terms compared with that of men. This is in spite of the fact that the socio-economic circumstances of women in the United States have improved over the past 35 years. The decline in relative happiness came to the fore in various datasets across various countries. They conclude that the relative declines in female happiness have reversed the observed gender gap in happiness from one favouring women in the 1970s to one with higher subjective well-being for men (Stevenson & Wolfers, 2009). It follows, therefore, that gender is an aspect that must be included in an analysis of subjective well-being in South Africa.

Another interesting socio-economic determinant of subjective well-being is the role of health. The bodyweight index has been used as a proxy for initial health capital (Gerdtham & Johannesson, 1997:8). Another aspect, related to the broader issue of health, which can also be part of the explanation of people's subjective well-being, is height (Kahneman, Krueger, Schkade, Schwarz & Stone, 2006). Using an Italian survey, Carrieri and De Paola (2012) established that a big component of the positive consequence of height for well-being is driven by a positive correlation between height and various economic and health conditions. Gerdtham and Johannesson (1997) identified additional variables that may be of importance, including urban/rural location and age.

The relationship between location and happiness has not received much attention in studies on happiness (Sander, 2011). Conceptually, the direction of the impact of location on happiness is indefinite. More densely populated urban areas can provide goods and services that rural areas are unable to supply efficiently. This could plausibly increase levels of happiness. The flipside of the coin is living in large metropolitan areas involves longer hours spent commuting to work (Sander, 2011).

Urbanisation was found to have a significant negative effect on health status in Sweden. The direct effect of urbanisation on subjective well-being was also a significant negative one (Gerdtham & Johannesson, 1997). The effect of location on happiness was also studied in the United States by Sander (2011). His study analysed the effect on happiness of living outside the 100 largest metropolitan areas in the United States. Using probit and ordered probit estimates

of a measure of happiness, he established that respondents aged 25 and older who live outside the 100 largest metropolitan areas in the United States are moderately happier than those living in them. He also showed that respondents living in the northern region of the country were less happy (Sander, 2011). The aspect of location and happiness has not received much direct attention from researchers in South Africa and will form part of the analysis by including provincial dummy variables.

The relationship between age and happiness in Sweden was established to be U-shaped, with happiness being lowest in the age group 45-64 (Gerdtham & Johannesson, 1997). Studying the above relationship in a South African framework could yield interesting results. The above-mentioned variables emerging from the literature provide the rationale for the selection of the variables for the empirical section of the study.

Based on the above literature review and subject to the availability of data, subjective well-being in this paper will be explained by the following function:

> Well-being = ƒ(Age, Race, Gender, Marital status, Health, Height, Education, Children, Importance of religion, Income, Urban, Province).

3. DATA & VARIABLES

The empirical analysis of this paper utilised data from the first wave (2008) of the National Income Dynamics study (NIDS). NIDS is the result of an intensive effort, initiated by the South African Presidency in 2006, to track changes in the well-being of South Africans, young and old, rich and poor – over a period of years. NIDS is the first national panel study to document the dynamic composition of a sample of household members in South Africa and changes in their incomes, expenditures, assets, access to services, education, health and other dimensions of well-being (Leibbrandt et al., 2009).

The first "baseline" wave of NIDS was administered by the Southern Africa Labour and Development Research Unit (SALDRU) based at the University of Cape Town's School of Economics. The first wave of fieldwork commenced in February 2008. The data and report were released in July 2009 (Leibbrandt et al., 2009). It constituted a nationally representative household survey that covered 7305 households and 28225 individuals. A stratified, two-stage cluster sample design was used in sampling the households to be included in the base wave. A central characteristic of the panel study is its capability to track people as they shift out of their original 7305 households (Leibbrandt et al., 2009). The vision is to repeat the survey every two years.

All variables for this study are sourced from the NIDS 2008 data set and are used to analyse the factors that may be underlying the reported happiness levels of respondents in the survey. The primary variable of concern is the measure of happiness. In the literature this is mostly measured by some form of a Likert-scale. The NIDS survey chose the following question (M5) in the first wave of the adult questionnaire as the basis for self-reported satisfaction or subjective well-being:

> Using a scale of 1 to 10 where 1 means "Very dissatisfied" and 10 means "Very satisfied", how do you feel about your life as a whole right now? (NIDS, 2008b:26).

This variable formed the basis for the analysis that follows. It was recoded to exclude the missing observations and cases where the respondent refused to answer. The resultant number

of observations available for analysis was 13 792. The recoded variable was labelled as 'well-being'. Analysing the variable reveals the distribution and summary statistics as presented in FIGURE 1 below.
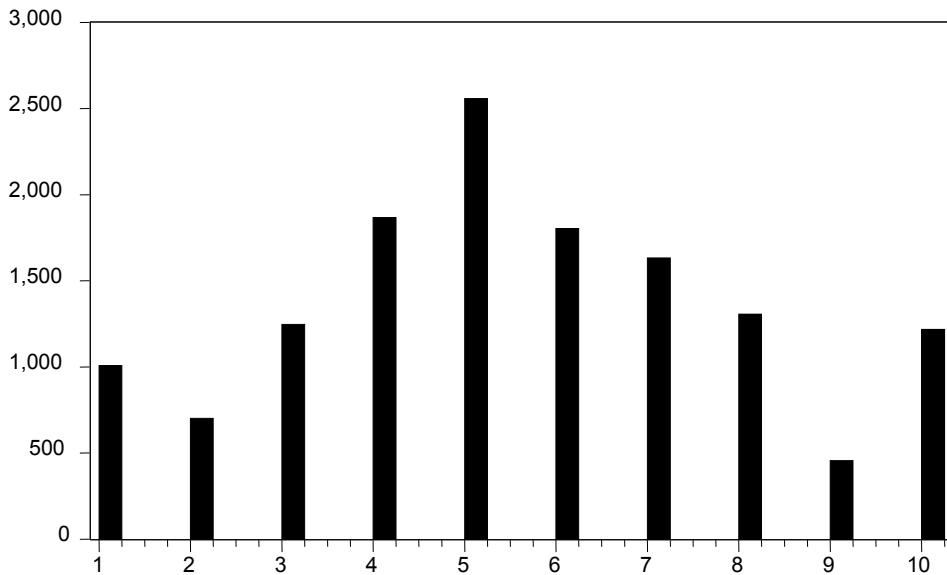

FIGURE 1: Distribution of Life-Satisfaction in South Africa, 2008

Source: *NIDS 2008a*

FIGURE 1 reveals a distribution that appears to be fairly normally distributed with an interesting tail at the highest happiness level of 10. The summary statistics may mask differences in terms of various demographic and other attitudinal variables, identified as part of the literature review. These include province of residence and or birth, level of urbanisation, race, gender, occupation, marital status, having children or not, level of skill, years of schooling, income, importance of belonging to a religious group and/or the religious grouping itself, as well as the proxy for health capital in the form of the body mass index (BMI) and the related issue of height.

TABLE 1 provides a descriptive overview of these demographic and attitudinal characteristics in the NIDS (2008a) data set. It is interesting to note that more than two-thirds of the respondents have no children as opposed to those with one or more. The variance in the level of education is immediately noticeable as well. The same applies to the fact that more than 80% the respondents regard religion as either important or very important in their lives. These observed differences will form a key part of the empirical analysis.

TABLE 1: Characteristics of respondents, NIDS 2008

AGE	Mean	37.69	
	Standard Deviation	17.69	
RACE GROUP	African	10 691	(77.52%)
	Asian	226	(1.64%)
	Coloured	1 997	(14.48%)

	White	878	(6.37%)
GENDER	Female	59.53%	
	Male	40.47%	
MARRIED		28.75%	
PHYSICAL ATTRIBUTES	Average height	1.61m	
	Body Mass Index	26.08	
	Obese	2.888	(20.94%)
CHILDREN IN HOUSEHOLD	Zero	64%	
	One or more	35.6%	
YEARS OF EDUCATION	No School	12.89%	
	12 Years	17.33%	
	More than 12 years	5.49%	
IMPORTANCE OF RELIGIOUS ACTIVITY IN LIFE	Important	44.18%	
	Very important	44.79%	
LOG INCOME PER CAPITA	Mean	6.46	
	Standard deviation	1.15	
URBAN		50.01%	
PROVINCIAL DISTRIBUTION	Eastern Cape	12.20%	
	Free State	6.55%	
	Gauteng	19.77%	
	KwaZulu-Natal	25.90%	
	Limpopo	8.87%	
	Mpumalanga	7.22%	
	Northern Cape	6.47%	
	North West	8.85%	
	Western Cape	13.16%	

Source: NIDS 2008a where applicable, otherwise binary values assigned by authors.

For the analysis a per capita individual level income variable was created from the NIDS data. The NIDS data contains a variety of income measures at the household and individual level. The NIDS data provides a household level total income variable with full imputations, encompassing all available income sources (for example, government grants, remittances, income from primary occupations, self-employment and casual employment). This variable was transformed into a per capita individual level variable by dividing the household income with size of each household. This variable used in the analysis below in log form as a result of the typical skew distribution of income evident in South Africa.

The crisis in the South African school system and the high levels of school drop-outs are reflected in the relative low percentages of respondents that had 12 years of education and more. The rest of the respondents, therefore, either did not attend school or left school before obtaining matric. This characteristic led the researchers to include the actual years of education in the empirical study rather than qualitative dummies for different levels of schooling.

4. EMPIRICAL ANALYSIS

TABLE 2 summarises the explanatory variables used in the empirical analysis.

TABLE 2:   Explanatory variables

Age	Age in years	
Asian	Dummy variable =	1 if respondent is Asian (African as base group)
Coloured	Dummy variable =	1 if respondent is Coloured (African as base group)
White	Dummy variable =	1 if respondent is White (African as base group)
Female	Dummy variable =	1 if respondent is female (male as base group)
Married	Dummy variable =	1 if respondent is married
NewBMI	Body mass index (calculated as weight/height^2)	
Obese	Dummy variable =	1 if BMI > 30
Height	Height in metres	
Children	Number of children living in household	
Edyears	Number of years of education	
Important	Dummy variable =	1 if respondent deems religious activities to be important in his/ her life
Veryimp	Dummy variable =	1 if respondent deems religious activities to be very important in his/ her life
Lincpc	Logarithm of household per capita income	
Urban	Dummy variable =	1 if respondent lives in urban area
EC	Dummy variable =	1 if respondent lives in the Eastern Cape
FS	Dummy variable =	1 if respondent lives in the Free State
Gau	Dummy variable =	1 if respondent lives in Gauteng
Limp	Dummy variable =	1 if respondent lives in Limpopo
Mpu	Dummy variable =	1 if respondent lives in Mpumalanga
NC	Dummy variable =	1 if respondent lives in the Northern Cape
NW	Dummy variable =	1 if respondent lives in North West
WC	Dummy variable =	1 if respondent lives in the Western Cape

Source: *NIDS 2008a where applicable, otherwise binary values assigned by authors.*

5. METHOD

Ferrer-i-Carbonell and Frijters (2004) observed that researchers from different fields of specialisation use different estimation techniques in empirical studies of subjective well-being or happiness. Psychologists and sociologists usually make use of Ordinary Least Squares (OLS) regressions while economists usually employ ordered response models. Various authors employ both estimation techniques in order to indicate that the research results are not influenced by the specific technique employed. See, for example, Ferrer-i-Carbonell and Frijters (2004), and Stevenson and Wolfers (2009). All of the aforementioned studies estimated coefficients with the same signs and statistical significance in OLS and ordered probit models. When dealing with single surveys, and in the absence of panel data, researchers from all fields of specialisation prefer to quote OLS results for the ease of interpretation of coefficients (MacKerron, 2012; Bartram, 2012). This paper, therefore, follows the general practice of estimating both OLS and ordered probit models – while interpreting the OLS coefficients.

6. RESULTS

Regression results are reported in TABLES 3 and 4. The estimated coefficients do differ between the OLS and ordered probit models, as was expected. There is, however, very little or no difference between the signs and probabilities (statistical significance) of the estimated coefficients. Greene (1993:674) warns that "… it is quite unclear how the coefficients in the ordered probit model should be interpreted". Considering Greene's warning, the OLS coefficients will be interpreted where necessary.

TABLE 3: Initial estimated well-being functions

	MODEL 1				MODEL 2			
	OLS		Ordered Probit		OLS		Ordered Probit	
	Estimator	Prob	Estimator	Prob	Estimator	Prob	Estimator	Prob
AGE	−0.0723	0.000	−0.0318	0.000	−0.0644	0.000	−0.0285	0.000
AGE^2	0.0007	0.000	0.0003	0.000	0.0006	0.000	0.0003	0.000
ASIAN	1.2980	0.000	0.5785	0.000	1.1051	0.000	0.4914	0.000
COLOURED	0.9824	0.000	0.4412	0.000	0.9428	0.000	0.4252	0.000
WHITE	0.7400	0.000	0.3119	0.000	0.7038	0.000	0.2967	0.000
FEMALE	−0.1040	0.064	−0.0463	0.067	−0.0927	0.048	−0.0412	0.052
MARRIED	0.2656	0.000	0.1174	0.000	0.2804	0.000	0.1242	0.000
BMI	0.0081	0.020	0.0037	0.020				
OBESE	−0.0011	0.986	−0.0025	0.934				
HEIGHT	0.2933	0.248	0.1196	0.296				
CHILDREN	0.0462	0.028	0.0206	0.030	0.0530	0.008	0.0239	0.008
EDYEARS	0.0410	0.000	0.0181	0.000	0.0469	0.000	0.0206	0.000
IMPORTANT	0.1461	0.039	0.0714	0.026	0.1403	0.034	0.0681	0.024

	MODEL 1				MODEL 2			
	OLS		Ordered Probit		OLS		Ordered Probit	
	Estimator	Prob	Estimator	Prob	Estimator	Prob	Estimator	Prob
VERYIMP	0.6552	0.000	0.2899	0.000	0.5831	0.000	0.2609	0.000
LINCPC	0.2939	0.000	0.1342	0.000	0.3157	0.000	0.1439	0.000
URBAN	0.0504	0.352	0.0189	0.437				
EC	0.4765	0.000	0.2096	0.000	0.4703	0.000	0.2068	0.000
FS	0.8943	0.000	0.3965	0.000	0.9129	0.000	0.4084	0.000
GAU	0.6253	0.000	0.2768	0.000	0.6906	0.000	0.3065	0.000
LIMP	0.4940	0.000	0.2297	0.000	0.4639	0.000	0.2159	0.000
MPU	1.2817	0.000	0.5787	0.000	1.2581	0.000	0.5704	0.000
NC	0.8110	0.000	0.3703	0.000	0.9562	0.000	0.4332	0.000
NW	0.6388	0.000	0.2821	0.000	0.6325	0.000	0.2810	0.000
WC	0.7943	0.000	0.3517	0.000	0.8545	0.000	0.3802	0.000
C	2.8195	0.000			3.2163	0.000		
Obs	12091				13593			
R^2	0.1536				0.1617			
Pseudo R^2			0.0374				0.0389	
Wald statistic			2292.37***				2637.63***	

Source: EViews Estimates

White heteroskedasticity-consistent standard errors reported for OLS results
QML (Huber/White) standard errors reported for ordered probit results

All the specified explanatory variables are included in Model 1. OBESE, HEIGHT and URBAN are not statistically significant and are excluded from the subsequent specifications. The expected relationship between BMI and happiness is indirect and negative. A lower BMI is associated with improved health which in turn is expected to increase subjective well-being (Gerdtham & Johannesson, 1997). The a priori expectation that better health increases well-being is contradicted in our results. BMI exhibits a significant positive relationship with happiness – although with a small coefficient/ marginal impact. One possible explanation for the contradicting results is that rising BMI may be linked to rising per capita income levels in South Africa. Rising BMI levels is a national phenomenon that deserves further exploration that falls beyond the scope of this study. However, the envisaged future availability of more waves of the NIDS date will enable researchers to conduct longitudinal and/or panel analysis to disentangle this relationship.

Following Gerdtham and Johannesson (1997) we further explored the impact of BMI by creating a binary variable OBESE with a value of 1 when the individual's BMI exceeds 30. The estimated coefficient of OBESE reported in model 1 is negative, as expected, but is relative small and statistically insignificant. In model 2 all the explanatory variables are statistically significant at a 5% level (except for FEMALE in the ordered probit model) and exhibit the expected signs.

Model 1 contains all available explanatory variables identified by the literature. BMI was omitted from Model 2 because of the wrong a priori sign. OBESE, HEIGHT and URBAN were omitted due to lack of statistical significance. The Likelihood Ratio test of redundant variables confirmed the redundancy of these three variables − H_0 of redundancy could not be rejected (with a 0.64 probability in the OLS model and 0.65 in the ordered probit model). In Model 3 an interactive variable was added. This is a new innovation not reported anywhere in literature. The redundancy test confirms the significance of the interactive term in Model 3 - H_0 of interactive term being redundant was rejected with a probability of 0.0276 in the OLS model and 0.0234 in the ordered probit model. Link tests for potential specification error were also performed for all reported models. These tests confirmed the absence of specification error.

Model 3 represents the final specification and adds an interactive term to the explanatory variables of Model 2. Four of the 21 explanatory variables in Model 3 are significant at a 5% level and the other 18 at a 1% level. The OLS R^2 values of 0.15 − 0.16 is quite high compared with similar studies (see Knight et al., 2009). In the ordered probit models, the explanatory variables jointly explain variations in respondents' wellbeing − the reported Wald statistics are all significant at a 1% level. The pseudo R^2s are also of the same order as reported in similar studies (see Booysen & Botha, 2011).

The AGE variable exhibits the expected quadratic behaviour, with the estimated coefficients of AGE being negative and AGE^2 positive. Well-being, therefore, tends to decrease as people get older, reaches a minimum point and then increases. According to the reported OLS coefficients of Model 3, the turning point is around 49 years of age.

All three models confirm a racial divide in terms of well-being. As the base group, Africans in South Africa have the lowest reported levels of well-being, followed by Whites, Coloureds and Asians.

Females overall reported lower levels of well-being compared with males. This finding is in line with recent literature (Stevenson & Wolfers, 2009). Married individuals, on the other hand, enjoy higher levels of satisfaction. The interactive variable testing for different levels of satisfaction between married males and married females rendered an interesting result. The estimated positive sign indicates that married females are better off than married males. The net result of the three variables FEMALE, MARRIED and FEMALE*MARRIED indicates that married females consider themselves to be happier than unmarried males.

Although only significant at a 5% level in both versions of Model 3, the variable CHILDREN indicates that the well-being of adults increases as the number of children living with them increases.

TABLE 4: Concluding estimated well-being model

	MODEL 3			
	OLS		Ordered Probit	
	Estimator	Standard error	Estimator	Standard error
AGE	−0.0635***	0.00599	−0.0281***	0.00273
AGE^2	0.0006***	0.00006	0.0003***	0.00003
ASIAN	1.1054***	0.13410	0.4918***	0.06020

	MODEL 3			
	OLS		Ordered Probit	
	Estimator	Standard error	Estimator	Standard error
COLOURED	0.9434***	0.07894	0.4255***	0.03539
WHITE	0.6985***	0.08816	0.2944***	0.03900
FEMALE	-0.1422***	0.05340	-0.0643***	0.02418
MARRIED	0.1632**	0.07120	0.0698**	0.03203
FEMALE*MARRIED	0.1985**	0.08640	0.0922**	0.03890
CHILDREN	0.0436**	0.02024	0.0195**	0.00916
EDYEARS	0.0476***	0.00619	0.0209***	0.00281
IMPORTANT	0.1446**	0.06630	0.0701**	0.03013
VERYIMP	0.5879***	0.07012	0.2632***	0.03189
LINCPC	0.3129***	0.02313	0.1426***	0.01056
EC	0.4673***	0.06980	0.2055***	0.03208
FS	0.9106***	0.09483	0.4074***	0.04287
GAU	0.6929***	0.07762	0.3075***	0.03506
LIMP	0.4622***	0.07581	0.2151***	0.03437
MPU	1.2599***	0.07866	0.5714***	0.03527
NC	0.9542***	0.09987	0.4324***	0.04494
NW	0.6313***	0.07874	0.2806***	0.03513
WC	0.8552***	0.08572	0.3806***	0.03842
C	3.2357***	0.17423		
Obs	13593			
R^2	0.1620			
Pseudo R^2			0.0390	
Wald statistic			2641.76***	

Source: EViews estimates

White heteroskedasticity-consistent standard errors reported for OLS results
QML (Huber/White) standard errors reported for ordered probit results
***probability < .01
**probability < .05

More educated individuals experience higher levels of well-being. The variable EDYEARS is statistically significant with a positive coefficient in all the models. Thus, each additional year of education adds to individual subjective well-being. This finding is in line with the existing literature. Moreover, it highlights an important policy consideration. Education is a key area where government policy can have a real and direct impact on the lives of the citizenry of South Africa. The constitutional responsibility on government to provide quality education to its citizens must be treated with the highest priority. Recent events in relation to the non-delivery of text books in Limpopo are a real-life manifestation of this.

A non-linear specification (not reported here) of the education variable was empirically tested, but did not yield statistically significant results. This may be explained by the low levels of schooling of the respondents — only 5% reported more than 12 years of education.

It is widely accepted that the level of income is one of the most important determinants of well-being in developing countries and even more so in poorer communities (Diener et al., 1993; Diener et al., 2009a). In this study, the variable LINCPC confirms the importance of absolute per capita income in the well-being of individual members.

With highly statistically significant coefficients, the provincial dummies confirm varying levels of well-being throughout the nine provinces of South Africa. The highest levels of well-being are reported in Mpumalanga, followed by the Northern Cape, Free State, Western Cape, Gauteng, North West, Eastern Cape, Limpopo and KwaZulu-Natal - the base for the provincial dummies. It is striking that higher levels of well-being are reported in the more rural provinces of Mpumalanga, the Northern Cape and the Free State. This confirms the findings in the international literature (Gerdtham & Johannesson, 1997; Sander, 2011). After controlling for income, demographic and other variables, people in these provinces enjoy a better quality of life. The industrialised, urbanised economic hubs of the Western Cape and Gauteng occupy the middle ground. The lowest levels of well-being are reported in the historically poorer provinces, with consistently bad track records in terms of service delivery. Increased urbanisation appears to have a substantial level of opportunity cost in terms of the well-being attached to it. Policymakers should take cognisance of this when developing integrated development plans at local municipality level. The importance of proper planning and service delivery immediately comes to mind in this regard.

The remaining explanatory variables in TABLE 4 test for the impact of religion on well-being. Without distinguishing between different religious groupings, the variable IMPORTANT denotes those individuals who indicated that taking part in religious activities is important to them. The variable VERYIMP denotes those who indicated that religious activities are very important in their lives. Compared to individuals who did not respond to the question on the importance of religious activities, individuals who are not religious and those who indicated that religious activities are unimportant, individuals who deem religious activities important reported higher levels of well-being. Those who deem it very important add almost three times more satisfaction to their lives than those who deem it only important.

The provision for freedom of religion as safeguarded in the constitution is, therefore, an important one and deserves all the protection afforded to it.

5. CONCLUDING REMARKS, POLICY IMPLICATIONS AND AREAS FOR FURTHER RESEARCH

Determinants that consistently featured in explaining subjective well-being in the various regression models were age, race, level of income, years of education, gender, marital status and the number of children. These findings offer no surprises and are in line with existing literature and empirical findings.

In contrast to international literature, height and urban location were not significant in explaining well-being in this large sample of South African individuals. Unlike in Italy, taller South Africans are not happier. Healthier South Africans are also not happier people. Overweight

and obese Swedes are less happy compared with their healthier countrymen. Contrary to the Swedish experience, South Africans' self-reported well-being increase with higher BMI levels.

As was found in the cases of Sweden and the United States of America, South Africans experience higher levels of well-being living outside the main urban areas. The highest levels of well-being were reported in the more rural provinces of Mpumalanga, the Northern Cape and the Free State.

One determinant that, until now, did not receive a lot of attention in South African studies on happiness, is the role played by religion. Individuals to whom religious activities are important and very important testified to being happier than those who are not religious and who do not regard religious activities to be important. This is true regardless of the religious grouping they belong to. The overwhelming statistical evidence highlighting the importance of religion in explaining well-being opens an interesting avenue for future research.

Two other topics for further research that emerged from the findings are the role of relative income, particularly for poor communities, and the impact of service delivery (or the lack thereof) on subjective well-being.

The rich NIDS data set and the possibility of future waves of this survey hold the promise of investigation into determinants of well-being not even considered in this study or any other South African study to date.

The literature also suggests that there are unique factors that influence the subjective well-being of migrant workers and other largely marginalised groups in the labour market, especially in the informal economy. These variables include aspects such as language proficiency in the adopted country's official language, access to health and the level of acceptance in the local communities. In order to study this, more emphasis is needed on targeted micro-level research to fill the existing gap in the data. Qualitative research methods such as Interactive Qualitative Analysis (IQA) can be very valuable in this regard. This requires the allocation of much-needed resources as well as the willingness by researchers to engage in an often unforgiving environment filled with logistical and other challenges.

The classical liberal argument that making people happy is not a rightful role of government (which should limit itself to the safeguarding of property rights and the avoidance of harm) (MacKerron, 2012) forms the background to the policy implications highlighted in this paper. MacKerron (2012) argues convincingly that well-being research can inform our civic dialogue with important empirical data. It asks whether there are sources of well-being other than income and consumption, identifies those sources, and suggests what some of the trade-offs between them may be. Continued research into subjective well-being can be of importance considering the debate around the appeal and likelihood of continued economic growth. This is where the link with public policy will be a valuable one for the future.

LIST OF REFERENCES

Bartram, D. (2012). Migration, return and happiness in Romania. *European Societies*, (forthcoming).

Booysen, F. & Botha, F. (2011). *The gold of one's ring is not far more precious than the gold of one's heart: Reported happiness among married and cohabitating South African adults*. Paper presented at the bi-annual conference of the Economic Society of South Africa, 4-7 September 2011, University of Stellenbosch, South Africa.

Carrieri, V. & De Paola, M. (2012). Height and subjective well-being in Italy. *Economics and Human Biology*, 10, pp. 289–298.

Clark, A.E., Frijters, P. & Shields, M.A. (2008). Relative income, happiness and utility: an explanation for the Easterlin paradox and other puzzles. *Journal of Economic Literature*, 46(1), pp. 95-144.

Cummins, R.A. (2000). Personal income and subjective well-being: a review. *Journal of Happiness Studies*, 1, pp. 133-158.

Demir, M. & Weitekamp, L.A. (2007). I am so happy cause today I found my friend: friendship and personality as predictors of happiness. *Journal of Happiness Studies*, 8, pp. 181-211.

Diener, E., Sandvik, E., Seidlidtz, L. & Diener, M. (1993). The relationship between income and subjective well-being: relative or absolute? *Social Indicator Research*, 28, pp. 195-223.

Diener, E., Suh, E.M., Lucas, R.E. & Smith, H.L. (1999). Subjective well-being: three decades of progress. *Psychological Bulletin*, 125, pp. 276-302.

Diener, E., Diener, M. & Diener, C. (2009a). Factors predicting subjective well-being of Nations. *Social indicators research series* 38, DOI 10.10077978-90-481-2352-0_3, pp. 43-70.

Diener, E., Lucas, R.E., Schimmack, U. & Helliwell, J.F. (2009b). *Well-being for public policy.* New York: Oxford University Press.

Dolan, P., Peasgood, T. & White, M. (2008). Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective well-being, *Journal of Economic Psychology*, 29, pp. 94-122.

Easterlin, R. (1974). Does economic growth improve the human lot? Some empirical evidence. In David, P.A. & Reder, M.W. (eds.) *Nations and households in economic growth: Essays in honour of Moses Abramovitz*. New York: Academic Press (pp. 89-125).

Easterlin, R.A. (2001). Editorial: Subjective well-being and economic analysis: a brief introduction. *Journal of Economic Behavior & Organization*, 45, pp. 225–226.

Ebrahim, A., Botha, F. & Snowball, J. (2011). *The determinants of happiness among race groups in South Africa.* Paper presented at the biannual conference of the Economic Society of South Africa (ESSA), University of Stellenbosch, South Africa, 4-7 September 2011.

Ferrer-i-Carbonell, A. & Frijters, P. (2004). How important is methodology for the estimates of the determinants of happiness? *Economic Journal,* 114(July), pp. 641-659.

Frey, B. & Stutzer, A. (2002). What can economists learn from happiness research? *Journal of Economic Literature*, 40, pp. 402-435.

Gao, W. & Smyth, R. (2010). *What keeps China's migrant workers going? Expectations and happiness among China's floating population*. Monash University, Melbourne (Department of Economics Discussion Paper no. 14/10).

Gerdtham, Ulf-G. & Johannesson, M. (1997). *The relationship between happiness, health and socio-economic factors: results based on Swedish micro data.* Department of Economics, Stockholm School of Economics, Stockholm, Sweden. (Working Paper Series in Economics and Finance no. 207).

Greene, W.H. (1993). *Econometric Analysis, 2nd edition*. New York: Macmillan.

Greyling, T. (2011). *Measuring and understanding the well-being of the Gauteng City-region's population.* Paper presented at the biannual conference of the Economic Society of South Africa (ESSA), University of Stellenbosch, South Africa, 4–7 September 2011.

Helliwell, J.F. & Barrington-Leigh, C.P. (2010). *Measuring and understanding subjective well-being.* Cambridge, MA. (NBER Working Paper no. 15887).

Hirata, J. (2011). *Happiness, ethics and economics*. New York: Routledge.

Kahneman, D., Krueger, A.B., Schkade, D., Schwarz, N. & Stone, A.A. (2006). Would you be happier if you were richer? A focusing illusion. *Science,* 2006 Jun 30; 312(5782), pp. 1908-1910.

Knight, J., Song, L. & Gunatilaka, R. (2009). Subjective well-being and its determinants in rural China. *China Economic Review*, 20, pp. 635–649.

Knight, J. & Gunatilaka, R. (2010) Great expectations? The subjective well-being of rural-urban migrants. *World Development*, 38(1), pp. 113-124.

Kingdon, G.G. & Knight, J. (2003). *Well-being poverty versus income poverty and capabilities poverty?* Oxford. (The Centre for the Study of African Economies Working Paper Series, Working Paper no. 199).

Kingdon, G.G. & Knight, J. (2007). Community, comparisons and subjective well-being in a divided society. *Journal of Economic Behaviour and Organisation,* 64(1), pp. 69-90.

Leibbrandt, M., Woolard, I. & de Villiers, L. (2009). *Methodology: Report on NIDS Wave 1, Technical Paper no. 1*. Southern African Labour & Development Research Unit, University of Cape Town.

MacKerron, G. (2012). Happiness economics from 35,000 feet. *Journal of Economic Surveys*, 26(4), pp. 705-735.

NIDS (2008a). *National Income Dynamics Survey*. SALDRU, UCT School of Economics, Cape Town.

NIDS (2008b). *Adult questionnaire, National Income Dynamics Survey.* SALDRU, UCT School of Economics, Cape Town.

Nielsen, I., Paritski, O. & Smyth, R. (2010). Subjective well-being of Beijing taxi drivers. *Journal of Happiness Studies,* 11, pp. 721-733.

Sander, W. (2011). Location and happiness in the United States. *Economics Letters,* 112, pp. 277–279.

Stevenson, B. & Wolfers, J. (2009). The Paradox of Declining Female Happiness. *American Economic Journal: Economic Policy,* 1(2), pp. 190–225.

Tiwari, M. (2009). Poverty and wellbeing at the "grassroots" - How much is visible to researchers? *Social Indicators Research,* 90, pp. 127-140.

Veenhoven, R. (1991). Is happiness relative? *Social Indicators Research*, 24, pp. 1-34.

Winkelmann, R. (2009). Unemployment, social capital, and subjective well-being. *Journal of Happiness Studies,* 10, pp. 421-430.