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Umakrishnan Kollamparambil

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Intergenerational mobility of subjective wellbeing in South Africa

Author:
Umakrishnan Kollamparambil[1]

Affiliation:
[1]Department of Economics and Finance, Faculty of Commerce, University of the Witwatersrand, Johannesburg, South Africa

Corresponding author:
Umakrishnan Kollamparambil, uma.kollamparambil@wits.ac.za

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Background: Intergenerational persistence is an important indicator of poverty trap which has been explored in literature using measures such as income, wealth, education, among others.

Aim: This study aims at expanding the existing literature on intergenerational mobility (IGM) by going beyond conventional measures and adopting subjective wellbeing (SWB) as a more holistic measure of social stratification.

Setting: The study considers the IGM of SWB in South Africa, accounting for possible endogeneity bias caused by simultaneity between parent and child SWB as well as the life-path patterns of SWB.

Method: The study uses waves 1 and 5 of the National Income Dynamics Study panel data for South Africa using a range of regression specifications including fixed effects and Lewbel's internal heteroscedasticity-based identification.

Results: The findings indicate that while positive significant persistence exists between parent and child SWB measured at the same time point, this is much lower compared to persistence measured using income. Mother–child and co-residents record higher intergenerational persistence compared to father–child and non-coresidents respectively. Further, considering the life-cycle dependency of SWB, the persistence reduces considerably. Lastly, the persistence is no longer found to be positive and significant when correcting for possible endogeneity bias in the SWB association of parents and children.

Conclusion: This is the first study on IGM using the measure of SWB and the substantially different findings from other income-based studies points to the value of a more holistic assessment of IGM.

Contribution: Further, it is also indicative of the non-income determinants of SWB trends in South Africa.

Keywords: intergenerational mobility; persistence; subjective wellbeing; South Africa.

Introduction

Intergenerational (IG) persistence is a good indicator of a poverty trap that persists in society. The analysis of IG mobility (IGM) and persistence can play a key role in shaping and designing government policies aimed at reducing children's dependence on their parents' circumstances (Corak 2001).

Although changes in permanent income were the original yardstick to measure IGM, recent times have seen a shift away from income-based studies toward those that incorporate more social and non-income factors that influence one's life circumstances (Abbas, Ali and Batool 2018). Part of the reason for this shift is the unavailability of income data across generations, along with the growing realisation that income-based studies tend to be narrow and limited. Focus on the mobility of income alone, often ignores other observable factors that play a role in income mobility. As a result, IGM has been extended to an analysis of changes in occupational status, and educational attainment between parents and children (Chetty et al. 2014; Hertz 2007; Mazumder & Acosta 2014; Solon 1992). More recently, IGM in health has received increasing attention (Akbulut-Yuksel & Kugler 2016; Corak 2013; Gutiérrez et al. 2019; Halliday, Mazumdar & Wong 2018).

This study expands the existing literature by moving away from single indicator-based measures such as income, occupation, education or health by using a more holistic measure as its central dimension of social stratification. Life satisfaction or subjective wellbeing (SWB) encompasses

Note: Additional supporting information may be found in the online version of this article as Online Appendix 1.

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various dimensions of an individual's personal and social life (Dolan, Peasgood & White 2008). A natural progression therefore from the studies that focus on single dimension measure of IGM, would be the study of IG SWB mobility. The study of life satisfaction or SWB allows for a holistic study of an individual's life circumstance that incorporates income factors (absolute and relative) and also non-income factors such as education, health, social capital variables, gender, race, religiosity, exposure to crime etc. Therefore, it can be argued that the study of SWB enables the interrogation of IGM in a broader sense, as the study of income alone does not help us to understand the impact of other observed (and unobserved) factors that make up one's life.

The channels through which SWB could persist between parents and children are diverse. The pathways of transmission of income, education, wealth etc. between parents and children, also apply to SWB as these variables are considered to be key drivers of SWB (Cummins 2000). This study argues that analysing the persistence of SWB allows us to draw more informative conclusions, as parents and adult children tailor life decisions not solely on considerations of income, but more broadly on their overall wellbeing.

Apart from education and earnings, as Corak (2001) explains, the environment that a child grows up in plays a significant role in influencing their development. As such, we expect the circumstances of parents to be passed down onto their children. Some of these circumstances and factors that are passed down include attitudes to religion, marriage, family, exercise, food habits, alcohol consumption, smoking, life aspirations, health status, among others, all of which can be put forth as contributors to SWB for children later in life as well (Blaauw & Pretorius 2013). Race is another important factor in the SA context that can be an important pathway of transmission of SWB between parent and children (Posel 2014). Subjective wellbeing levels of the black majority have been significantly lower than the white minority in South Africa because of the systemic discrimination against the former under apartheid (Kollamparambil 2020). The race-based privilege was inherited across generations for the white demographic group, while the disadvantages were passed on across generation for others. Thus, persistence in wellbeing across generations is the expected outcome of apartheid legacies of its past (Girdwood & Leibbrandt 2009).

Another motivation to move away from income-only based IGM analysis is the income-happiness paradox – the notion that happiness (or life satisfaction) does not necessarily increase with income in the long run (Easterlin et al. 2001) – which suggests that happiness is not a linear function of income. There is hence good reason to assess IGM in SWB separate to income. It is therefore somewhat surprising that an assessment of IGM of SWB is limited both in the developed as well as developing country contexts. The existing literature on SWB within the framework of IG social mobility is restricted to assessing the role of latter in driving the former (Hadjar & Samuel 2015; Iveson & Deary 2017; Nikolaev & Burns 2014; Zhao et al. 2017). An analysis of IGM of SWB from parents to children itself is missing in literature as far as the author can ascertain.

Further, understanding IGM, is especially important in the context of South Africa which is characterised by past oppression in the form of apartheid against the non-white majority population. Low IG income mobility is touted as one of the reasons why South Africa continues to have one of the highest levels of income inequalities and poverty in the world even after three decades of democracy (Piraino 2015). The two prominent studies on IG earnings mobility in South Africa are restricted among males (Finn, Leibbrandt & Ranchhod 2016; Piraino 2015) and both found high levels of persistence. Finn et al. (2016) found education to play an important interface in explaining IG earning mobility in South Africa. The early literature on educational mobility in South Africa found substantial persistence, especially among black South Africans (Case & Deaton 1999; Girdwood & Leibbrandt 2009; Lam 1999; Nimubona & Vencatachellum 2007; Thomas 1996). More recent studies (Branson et al. 2012; Kwenda, Ntuli & Gwatdizo 2015; Louw, Van Der Berg & Yu 2007) however, indicate a decrease in IG transmission of education over the last five decades in the country.

Analysing IGM in SWB in South Africa is especially interesting because of multiple reasons. Although the country has an average life satisfaction of 4.72 on a scale of 1 to 10 (Helliwell et al. 2019), which may be considered low compared to the average of other middle-income countries, the average level of SWB in the country has been increasing in recent times (Kollamparambil 2020). Further, the finding by Kollamparambil (2020) that the country has experienced declining SWB inequality in recent years despite increasing income inequality underscores the need to look beyond income-related factors in assessing IGM. Kollamparambil & Mathentamo (2020) documents that the increase in average SWB in SA (and decline in SWB inequality) is led by the increase among the majority black population which historically has recorded lower SWB levels compared to the non-black population. Kollamparambil & Mathentamo (2020) attributes it to the contribution of non-income factors like access to public amenities (water, electricity, sanitation, healthcare) and improved political agency of the majority population in the country. Therefore, even though IG earning mobility is low (Piraino 2015), there is a need to investigate whether SWB mobility bucks this trend. This paper enhances IGM literatures by focussing on hitherto ignored aspect of SWB.

Data

The study uses waves 1 and 5 of the National Income Dynamics Study (NIDS) survey, South Africa's first national household panel study, undertaken in approximately 2-year intervals between 2008 and 2017. National Income Dynamics Study is the result of collaboration between the Department

of Planning, Monitoring and Evaluation (DPME) and the Southern Africa Labour and Development Research Unit (SALDRU) based at the University of Cape Town's School of Economics. The first wave of the survey was conducted in 2008 covering 16 872 adults and 7289 households, and the fifth and last wave of the study was conducted in 2017 with a sample of over 30 110 adults and 13 464 households (Brophy et al. 2018). This study uses survey weights to generate population estimates.

The variable of interest for the study is derived from the life satisfaction question of the NIDS, where adults are asked: *Using an ordinals 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?'.

Unlike past studies that use an artificial construct, based on an entirely different survey, to derive the earning of the parent; this study matches biological children and parents from the NIDS longitudinal survey. The SWB of the parent is sourced from the first wave and of the children from the fifth wave. The use of different waves allows for a gap of 10 years between the observations of the parent and child. Further, restricting the age of the children in the sample between 26 and 45 years in the year 2017 (wave 5), and the parents between 31 and 54 years in the year 2008 (wave 1), we create comparable age groups with substantial age overlap between parents and children. This allows the study to effectively meet the challenge posed by the age dependency of SWB, noted in literature by the U-shape through the life course of an individual (Clark & Oswald 2007).

It is important to note that the study uses 'child/children' to describe participants who have at least one parent in the sample, even though the children themselves are all adults (18 or older). The sample of children that are matched with the mother and father is made up of 8240 and 3046 adults respectively for both waves combined. The significantly smaller sample of father and children is expected in the South African context, where literature has noted extensively that it is common for fathers not to share the household of even their minor children (Morrell, Posel & Devey 2003; Posel & Devey 2006; Richter, Chikovore & Makusha 2010). Restricting the sample to children aged 26–45 years in the year 2017 (wave 5), and the parents between 31 and 54 years in the year 2008 (wave 1), allows the study to account for life-course effect of SWB but reduces the sample to 7041 and 2657 for mother and father analysis respectively. Lastly, imposing age restrictions to account for age dependency of SWB brings down the sample size considerably to 1342 and 549 for mother and father respectively.

Further, noting that 48% of the samples are from co-resident households and 52% from children living in separate households from parents, separate estimations are undertaken for co-resident sample in order to get an indication of the selection bias because of the observable and unobservable differences in children who share the household with parents.

The base estimations estimate correlations between parent and child SWB by using a range of control variables adapted from Kollamparambil (2020). These control variables include individual demographic characteristics such as age, gender and race; social measures such as health status, importance of religion and relationship status and income measures such as perceived relative income status, and employment status.

The density plots of the child, mother and father are provided in Figure 1. The average SWB of children are marginally higher than that of both parents (Table 1). The statistics presented are of the age-restricted sample.

The sample of children is made of 53% women, with men making up the other 47%, reflecting the South African population. The sample also provides a close representation of the demographic make-up within South Africa, with 88% of the sample consisting of black African adults, the remaining is made of the white, Asian, Indian and coloured population of South Africa. With high levels of race-based poverty in the country, it is important to assess IGM for the black race separately.

The sample includes a subjective measure for relative income (income step), where participants are asked to imagine a six-step ladder of income where the poorest South Africans stand on the lowest step and the richest stand on the highest step. The distribution of responses is consistent with the low levels of income in South Africa combined with high inequality and high levels of poverty; 81% of the sample consider themselves to be on the lowest three steps. Less than 1% (0.51%) consider themselves to stand on the highest step. We include this measure in the study to capture the role of perceptions of relative income of individuals as opposed to absolute income alone. Perceived income is likely to provide a more insightful look into the effects on income on SWB (Posel & Casale 2011). The mean income-step on a scale of 1 to 6 is 2.72 for children which is marginally higher than the reported income-step of mother (2.53) and father (2.55). The expected income step 2 years ahead is substantially higher at 3.77 for children.

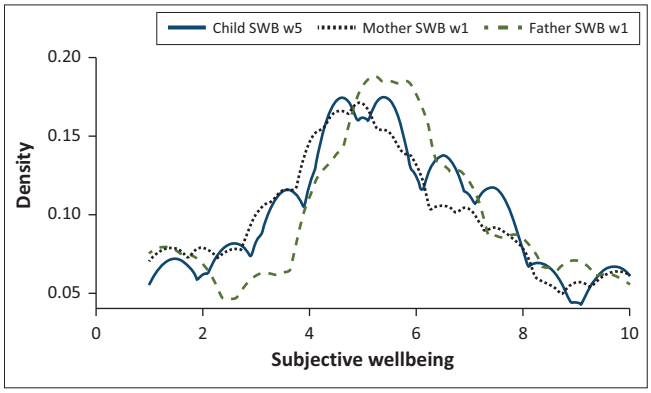

FIGURE 1: Kernel density plots of child (wave 5) and parent (wave 1) subjective wellbeing.

TABLE 1: Summary descriptive statistics (child wave 5, parent wave 1 with age restriction).

Variable	*N*	Weight	Mean	s.d.	Min.	Max.
Child SWB (w5)	1342	2197820.00	5.55	2.40	1.00	10.00
Mother_SWB w1	1342	2197820.00	5.25	2.43	1.00	10.00
Father_SWB w1	462	862064.50	5.44	2.55	1.00	10.00
HH income (rands)	1342	2197820.00	2964.43	4575.22	41.21	38923.02
Age w5 (years)	1342	2197820.00	30.24	3.87	26.00	45.00
Mother_age w1	1342	2197820.00	46.59	5.46	32.00	54.00
Father_age w1	462	862064.50	51.75	6.14	33.00	54.00
African	1342	2197820.00	0.88	0.32	0.00	1.00
Above matriculation	1342	2197820.00	0.35	0.48	0.00	1.00
Employed	1342	2197820.00	0.60	0.49	0.00	1.00
Male	1342	2197820.00	0.47	0.50	0.00	1.00
Urban	1342	2197820.00	0.66	0.48	0.00	1.00
Married	1342	2197820.00	0.17	0.37	0.00	1.00
Healthy	1342	2197820.00	0.92	0.27	0.00	1.00
Religious	1342	2197820.00	0.87	0.34	0.00	1.00
Future expectations	1342	2197820.00	3.77	1.13	1.00	6.00
Flushing toilet	1342	2197820.00	0.64	0.48	0.00	1.00
Mother_co-resident	1342	2197820.00	0.60	0.49	0.00	1.00
Father_ co-resident	1342	2197820.00	0.26	0.34	0.00	1.00
Income step	1342	2197820.00	2.72	0.92	1.00	6.00
Mother_income step	1342	2197820.00	2.53	0.89	1.00	6.00
Father_income step	462	862064.50	2.55	0.87	1.00	6.00

Note: w1 & w5 indicate waves 1 and 5 respectively. Variables are for children unless specified otherwise.
NIDS, National Income Dynamics Study weighted sample; SWB, subjective wellbeing.

The sample also has high levels of reported health, with 92% of the sample reporting that they had good health. Health is invariably linked to SWB and we expect a negative relationship between the two with lower levels of health leading to reporting of a lower SWB.

Over 80% of the children reported that they were not in a married or live-in relationship in Wave 5 (2017). Lastly, a significantly large majority of the sample report that they find religion important to them (87%). Kollamparambil (2020) argues that religious activities tend to provide people with a sense of comfort and belonging which would contribute to reporting a higher level of SWB.

Methods

Existing studies that measure IGM use simple Ordinary Least Squares (OLS) regression to estimate the persistence between child and parent variables. Literature has highlighted a number of concerns in estimating IG mobility, especially in the context of intergenerational earnings (IGE) mobility. The first relates to the measurement error resulting from insufficient information on parental earning. Solon (1992) has pointed out that single observations of parental earnings biases the estimated IGE downward. When it comes to the second problem, the life cycle pattern of earnings implies that the earnings of both parents and offspring would be sensitive to the age at which it is measured (Grawe 2006; Haider & Solon 2006). The third problem relates to selection bias emanating from study of households where parents and children co-reside, because co-resident children may have observed and unobserved characteristics that are systematically different from those who do not live with their parents, leading to biased estimates of the IGE elasticity. A further issue relates to restricting the IGE of earning to parents and sons because of the complications in modelling labour market participation decision of daughters.

The first concern, of a single data point for parents, raised in the context of earning is not as pertinent to IG SWB mobility as SWB data for parents are available for multiple points in the dataset used in this study. Further, the study is extended to both sons and daughters without much trouble as the SWB evaluation is available for all adults within the surveyed households (including parents and adult children). However, the second and third concerns discussed earlier in the text are pertinent to the study at hand, where the age dependency of SWB has been noted in literature. The study deals with this by aligning the SWB of the child in wave 5 with the SWB of the parent in wave 1. This effectively bridges the gap in the age of parent and child by approximately 10 years. Further, using the filter of age of child to restrict the sample to between 25 and 45 years in wave 5 (2016–2017) and parents between 32 and 55 years of age in wave 1 (2008), the study achieves substantial overlap in ages of parents and children for comparison.

An attempt is also made to deal with the issue of selection bias raised in IG earning literature because of the sample restriction to co-resident household members. This is accomplished by estimating the IG SWB mobility for coresident households and others separately to explore the extend of bias and is reported separately.

This study first of all estimates the regression beta using OLS and correlation within a simple model with no other controls (Torche 2013). The study estimates correlations between the dependent variable, SWB of children and the independent variable, SWB of parents (mother or father) as follows (see Equation 1):

$$W_{it}^{C} = \beta_1 W_{it-10}^{P} + \varepsilon_{it} \quad \text{[Eqn 1]}$$

Equation 1 shows the general form of the equation: where W_{it}^{C} captures the SWB of the child and W_{it}^{P} is the SWB of the parent. The parameter of interest is $\beta 1$ which measures the strength of the association between the outcomes of the child and the parent, or persistence in the SWB of parent and child. Intergenerational mobility of well-being is quantified as (1–$\beta 1$). In the second segment of analysis, the strength of the association between parental and child SWB is estimated along with a vector of control variables (see Equation 2):

$$W_{it}^{C} = \beta_1 W_{it-10}^{P} + \beta_2 W_{it}^{C} + \varepsilon_{it} \quad \text{[Eqn 2]}$$

X_{it}^{C} is a vector of variables that are associated in literature as drivers of SWB. The multivariate analysis allows to ascertain the strength of association between parent and child SWB after controlling for the confounding effect of other variables. Further, it also allows the study to address the challenge of endogeneity arising out of reverse causality between the SWB levels of parents and children. The study undertakes an instrumental variable estimation to mitigate the possible bias. While a standard two stage least squares (2SLS) estimation is considered the efficient method to account for possible endogeneity of parent's SWB variable, finding a strictly exogenous instrumental variable is not easy. Therefore, the heteroscedasticity-based internal instrument approach (Lewbel 2012, 2018) is used to address the issue of possible endogenous regressor using the STATA module ivreg2h (Baum et al. 2012). Identification is achieved by having regressors that are uncorrelated with the product of heteroscedastic standard errors (Kollamparambil 2022). The instrumented variable is: parent's SWB. The Hansen J test is used to test the identification restriction. The Lewbel's regression method is implemented for the age-restricted model (where child SWB is measured at wave 5 and parent SWB at wave 1) with the full set of control variables.

Before implementing the Lewbel's method, it is important to conduct the requisite tests for heteroscedasticity. According to Lewbel (2012), the Breusch-Pagan test is enough to test for heteroscedasticity. Therefore, general IV regression was conducted with the external instruments followed by the Breusch-Pagan/Godfrey/Cook-Weisberg test. Under the null hypothesis of homoscedasticity, the null hypothesis is rejected at the 1% level, therefore suggesting that heteroscedasticity is available to be exploited (Kollamparambil 2022). Lastly, given the Lewbel regression also creates internal instruments, this provides the ability to test for the validity of the instruments (i.e. the instrumental validity assumption above). A failure to reject the post-estimation Hansen-J test statistics is indicative of instrumental validity.

Ethical considerations

This article does not contain any studies involving human participants performed by the author.

Results

Table 2 provides the OLS beta and Pearson correlation estimations of IG (mother–child and father–child) SWB persistence. Panel A provides the persistence between SWB of the child and parent, observed at the same point in

TABLE 2: Intergenerational subjective wellbeing persistence estimates.

Variable	Mother		Father	
	OLS beta	Pearson correlation	OLS beta	Pearson correlation
Panel A: No age restrictions (full sample)				
Wave 1 [1999, 742]	0.461***	0.44***	0.414***	0.42***
Wave 5 [6241, 2304]	0.345***	0.44***	0.301***	0.32***
Pooled [8240, 3046]	0.380***	0.38***	0.333***	0.35***
Fixed effects [3680, 1362]	0.354***	0.40***	0.260***	0.34***
Panel B: Same Household, no age restrictions				
Wave 1 [1990, 740]	0.464***	0.45***	0.43***	0.42***
Wave 5 [4401, 1512]	0.530***	0.53***	0.486***	0.52***
Pooled [6391, 2252]	0.500***	0.49***	0.455***	0.47***
Fixed effects [2789, 979]	0.513***	0.52***	0.457***	0.45***
Panel C: Parent wave 1 and child wave 5				
No age restriction [7041, 2657]	0.171***	0.18***	0.216***	0.23***
Age restriction# [1342, 549]	0.079*	0.09***	0.075**	0.083**
Age restriction# and Same Household [771, 251]	0.114**	0.12***	0.088	0.10
Panel D: Black African parent wave 1 and child wave 5				
No age restriction [5845, 2013]	0.144***	0.145***	0.210***	0.216***
Age restriction# [1115, 410]	0.038	0.041	0.075	0.082*
Age restriction# and Same Household [426, 151]	0.044	0.048	0.061	0.069
Panel E: Existing evidence on IGM				
Earnings IG elasticity (Piraino 2015 *N* = 1241, Father-Son)	-	-	0.676***	-
Earnings IG elasticity (Finn et al. 2016 *N* = 1389, Parent-Son)	0.718***	-	0.678***	-
Education IG persistence (Kwenda et al. 2015)	0.207***	-	0.183***	-

Note: The figure in the square parentheses indicates sample size for mother–child and father–child estimations.
IGM, intergenerational mobility; IG, intergenerational; OLS, Ordinary Least Squares.
#, Age restriction in years: 25 < child < 46 and parent < 55.
***, $p < 0.01$; **, $p < 0.05$; *, $p < 0.1$.

time (using both wave 1 and wave 5). Although this entails the fact that the child and parent are at different points on their respective life cycle, it nevertheless provides useful insights to benchmark against the more refined models to follow. The estimations for both wave 1 and wave 5 indicate that there is significant positive relationship between the SWB of parents and children. The association is higher between the child and mother compared to the child and father. However, these associations show substantial decline between 2008 and 2017 (0.46 vs. 0.35 for child–mother and 0.41 vs. 0.30 for child–father). Panel data estimations show that the fixed effects estimation is lower than the pooled estimates for both the child–mother as well as child–father, highlighting the relevance of time invariant individual specific heterogeneity driving SWB. The persistence between child–mother continues to be substantially higher than for child–father in the fixed effects models.

Next, to consider the selection bias emanating from study of households where parents and children co-reside, we estimate the child–parent models for those who are co-resident. It is evident in the panel models that the relationship between the child and parent is stronger for co-resident households, implying a possible selection bias in the earlier estimations that do not account for it (Panel B, Table 2). This is in line with expectations given stronger simultaneity between individuals living together and sharing the same living conditions. The child–mother association continues to be stronger than the child–father association. Further, an increase is noticed between the two waves from 2008 to 2017, with child–mother association increasing from 0.46 to 0.53 and child–father association increasing from 0.42 to 0.52.

The above estimations measure the SWB of parent and child at the same time point (at different stages of their lives) and hence do not account for the life cycle effect on SWB. To control for this, we next estimate persistence between parent SWB in 2008 and child SWB in 2017. We observe that the association between parent and child continues to be positive and significant; however, the beta value has declined significantly (Panel C, Table 1). An even further decline in beta is reported when further age restrictions on sample are enforced such that there is significant overlap in the years of children and parents as explained under the methodology section. While the child–mother beta continues to be significant, the child–father beta is no longer significant. The estimates for co-resident households continue to be insignificant for child–father estimate (the low sample size can be considered to be the reason for the large standard errors). As expected, the child–mother beta is stronger for co-resident households, but the value is nevertheless low at 0.114.

Next, we explore the race-specific beta estimate for the black African majority demographic group. Given the apartheid history and the race-based poverty and inequality in the country, it is important to assess IG mobility along population groups. While race is classified in South African context as black African, coloured, Indian and white population groups, the sample size (over 80% black African) allows to separately analyse only the black African category. It is clear that beta for child–mother is significantly lower among the black African group compared to the population as a whole, implying that the IG SWB mobility (between mother and child) is substantially higher among black Africans in South Africa. The difference is not as noticeable among child–father; however, it needs to be noted that the child–father estimates, are based on much smaller sample size which limits the precision of the estimate.

The results of the analysis stand in stark contrast to our current understanding on IG mobility based on earnings and education. First of all, although significant positive association is observed between child and parent SWB observed at the same point in time, this disappears when accounting for the age difference between children and parents. The results from this study show that IG SWB mobility in South Africa is much higher compared to earnings or education mobility noted in literature. Further, IG SWB mobility is higher among black Africans while mobility literature on earnings indicates otherwise (Piraino 2015). The findings are difficult to benchmark against other recent South African literature as Finn et al. (2016) did not estimate race-specific IG earning mobility, while Kwenda et al. (2015) restricted their analysis on IG education mobility to black South Africans only. However, Hertz (2007) confronts the issue of race-based persistence in the US context and found a significantly higher rate of persistence among poor African-American as opposed to poor white households. Hence, the findings from this study are in contrast to estimates on IG earnings mobility and indicate that there exists a non-linear relationship between income and SWB, although there is little doubt that the latter is a stronger driver of the former.

Multivariate analysis

In this section, we further explore the SWB persistence between parent and child SWB, while controlling for other relevant drivers of SWB. The control variables are broken up into economic (absolute and relative income, employment), individual (education, married, healthy, religious), demographic (age, race and sex) and household (urban, flushing toilet, co-resident) characteristics. The variable definitions are included in Online Appendix Table 1-A1. The results of multivariate analysis broadly indicate that the results of the beta estimations in a simple model hold even with controls included in the regression model. Both pooled OLS as well as fixed effects estimations indicate that the association between child and parent wellbeing is positive and significant when measured at the same time point; in other words at a different point in the life cycle of parent and child (Online Appendix 1, Table 2-A1). The child–mother association is stronger than that of child–father. Also, co-

resident relations are stronger as expected (Online Appendix 1, Table 3-A1). However, these associations are no longer significant when age restrictions are imposed to measure SWB wellbeing of parents and children more or less in a similar phase of the life cycle (Online Appendix 1, Table 4-A1). Lastly, Lewbel regression is estimated to account for endogeneity through reverse causality. The results continue to be insignificant for both child–mother and child–father estimations (Table 3). The other results emerging from the multivariate analysis are in keeping with existing SWB literature. Absolute and relative income have a positive and significant association with SWB. Religiosity, education and access to basic amenities are also key drivers of SWB. Individuals from black African race, on an average have significantly lower SWB compared to the rest of the population.

TABLE 3: Lewbel regression (dependent variable subjective wellbeing of child wave 5, with age-restricted sample).

Variables	(1) Parent (mother)	(2) Parent (father)
Parent SWB w1	-0.0895	-0.149
	(0.0900)	(0.146)
Education	0.195**	0.878**
	(0.048)	(0.441)
Employed	0.172	0.118
	(0.203)	(0.385)
Age	-0.136	-0.179
	(0.353)	(0.521)
Age squared	0.00170	0.000252
	(0.00548)	(0.00801)
African	-0.844**	-0.215**
	(0.366)	(0.059)
Male	0.340	0.231
	(0.211)	(0.387)
Relative income	0.540***	0.301**
	(0.129)	(0.153)
Household income	0.294**	0.715**
	(0.116)	(0.303)
Urban	0.0787	-0.106
	(0.271)	0.586)
Married	0.522*	1.436***
	(0.278)	(0.392)
Healthy	0.571	0.609
	(0.415)	(0.428)
Religious	0.844***	1.129*
	(0.268)	(0.646)
Future expectations	0.0715	-0.00471
	(0.106)	(0.205)
Flushing toilet	0.537*	0.479*
	(0.288)	(0.249)
Co-resident	-0.0452	-0.289
	(0.237)	(0.379)
Constant	4.502	2.409
	(5.539)	(8.241)
Breush-Godfrey LM		
Hansen J	24.345	16.618
Observations	1110.000	215.000
R-squared	0.126	0.329

Note: Robust standard errors in parentheses. Instrumented: Parent SWB w1. Included instruments: Education, Employed, Age, Age squared, African, Male, Relative income, Household income, Urban, Married, Healthy, Religious, Future expectations, Flushing toilet, Co-resident.

SWB, subjective wellbeing.

***, $p < 0.01$; **, $p < 0.05$; *, $p < 0.1$.

Discussion

The analysis started with benchmark estimations of persistence in SWB between parents and child, measured at a single point in time. This revealed persistence ranged between 0.34 and 0.53 for child–mother, with higher limits observed for co-resident households. The child–father range varied from 0.30 and 0.52, with the co-resident households recording higher levels of persistence. These estimates, although not insignificant, are nevertheless much lower than the persistence recorded in IG earnings in South Africa.

Further, the findings of this study point to even lower levels of persistence between parent and child when taking into account the life cycle dependency of SWB. The persistence of SWB is even lower for the African majority population compared to the rest of the population. The persistence is not just substantially lower compared to IG earning mobility, it is also lower than the most recent estimation recorded for education mobility by Kwenda et al. (2015). Increasing SWB mobility across generations means that the transfer of disadvantages across generations is reduced, and the gap in opportunities within generations is ultimately minimised (Molina, Navarro & Walker 2011).

The low levels of SWB persistence, despite high levels of earning persistence point to the non-income factors driving SWB in South Africa. This evidence is in keeping with the findings of Kollamparambil (2020) who notes that despite increasing income inequality, South Africa has been recording declining SWB inequality. Kollamparambil & Mathentamo (2020) identifies the non-income factors driving SWB in South Africa as improved access to amenities, and empowerment of the majority black African population. These also explain the weak IG transmission of SWB despite continued high persistence in IG earning.

The relatively weaker IG persistence of SWB in South Africa is a positive finding, especially given the country's high levels of income inequality. This suggests that social policies implemented by the democratic government over the past three decades have played a significant role in improving well-being across generations, potentially reducing the transmission of inequality through enhanced social support and opportunities.

Conclusion

Intergenerational mobility has been utilised extensively in literature as a useful barometer for measuring the poverty trap across generations. This study goes beyond conventional measures of social stratification (income, occupational status, education, health etc) by using a more holistic measure of individual wellbeing, namely, self-reported life satisfaction or SWB. While income, education and health undoubtedly play a critical role in driving SWB, the latter also imbibes other tangible and intangible factors in life. As such, SWB can

be seen to be an encompassing way to assess the persistence in wellbeing between parent and child.

The study finds persistence in SWB between parent and child in South Africa to be significantly lower than with other indicators like income and education. The persistence is no longer significant when factoring in possible endogeneity bias because of simultaneity between parent and child SWB. The results point to significant difference from existing earning-based studies on IGM that have concluded that children inherit the circumstances of their parents to a large degree in South Africa (Piraino 2015; Finn et al. 2016). While one might expect SWB mobility to align with income mobility, given that income is an important driver of SWB in South Africa, the counter view can be advanced based on the work of Kollamparambil (2020) that despite increasing income inequality in South Africa, SWB inequality has been declining. This is an indication that non-income factors are growing in relevance in determining SWB in South Africa (Mahadea 2012). Kollamparambil (2020) highlights the role of public utilities and returns to race as factors behind the divergence between income and SWB inequality trends in SA. The findings of this study lend support to Mayer and Lopoo (2008) who highlight the role of government investment in increasing IGM.

The results of this study lend hope and highlight the positive outcomes of the wide sweeping policies put in place by the democratic government since 1994, to uplift the previously disadvantaged. Despite the growing income inequality and challenges of high levels of poverty in South Africa, this study shows that progress has been made to weaken the persistence in developmental outcomes observed across generations. Further studies that look at the inter-temporal change in SWB persistence are needed to yield deeper insights on whether South Africa is firmly placed on a trajectory to break the cycle of IG persistence in wellbeing.

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Author's contributions

U.K. declares that they are the sole author of this research article.

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Data availability

Data are available on Datafirst portal: https://www.datafirst.uct.ac.za/dataportal/index.php/catalog/NIDS.

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