

The relationship between marital status and life satisfaction among South African adults

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This article examines the association between marital status and reported life satisfaction in South Africa. Using the 2008 National Income Dynamics Survey, the relationship between marital status and life satisfaction is heterogeneous. In the overall sample, life satisfaction is significantly higher for married compared to widowed individuals, while the former are more satisfied than those from all other marital statuses. In the overall and female samples, married people are more satisfied compared to those from all other marital status groups. Married men are not significantly more satisfied than men from other marital statuses as a whole. Marriage is positively associated with life satisfaction among women, but not among men.

Die verband tussen huwelikstatus en lewensvredeheid onder Suid-Afrikaanse volwassenes

Hierdie artikel bestudeer die verband tussen huwelikstatus en lewensvredeheid in Suid-Afrika. Gebaseer op data uit die 2008 National Income Dynamics Survey is die algemene verhouding tussen huwelikstatus en lewensvredeheid gemeng. In die algehele steekproef is lewensvredeheid beduidend hoër vir getroude persone relatief tot wewenaars of weduwees, terwyl eersgenoemde meer tevrede is as persone van alle ander huwelikstatusse. In die algehele en vroulike steekproewe is getroude persone meer tevrede relatief tot persone van alle ander huwelikstatusgroepe. Getroude mans is nie beduidend meer tevrede as mans van alle ander huwelikstatusse in die geheel nie. Die huwelik is positief verwant aan lewensgeluk vir vroue, maar nie vir mans nie.

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Over the past few decades, a great deal of empirical research has focused on the relationship between marital status and subjective well-being. Marital patterns present various implications for female labour force participation, income inequality and population growth (Becker 1973; Stack & Eshleman 1998). For example, married females are more likely to refrain from participating in the labour force in order to raise children, while the presence (absence) of children also positively (negatively) affects population growth. In addition, married people generally live longer and are less likely to engage in risky behaviour, alcohol abuse and suicidal behaviour (Coombs 1991). Research has also stressed the importance of cohabitation for individual well-being, due to its similarities with marriage (Stack & Eshleman 1998; Soons & Kalmijn 2009; Botha & Booysen 2013).

Previous studies on the relationship between marital status and life satisfaction have mainly focused on developed countries, where marital status has been found to be a major determinant of individual well-being. With respect to developing countries such as South Africa, overt research on the link between life satisfaction and marital status is less common (see Powdthavee 2003 & 2005; Hinks & Gruen 2007). In addition, South African studies have also reported ambiguous results with respect to the relationship between subjective well-being and marital status. Gender differences in the association between marital status and life satisfaction have also remained unexplored. This article aims to determine the relationship between life satisfaction and marital status among adult South Africans in general, and whether life satisfaction differs by marital status across gender groups.

1. Literature review

The finding that married people report higher levels of well-being than those who are divorced, single, widowed, and cohabit is well established.¹ The fact that marriage may provide a life satisfaction increment over other types of relationships is not surprising, given that marriage provides several advantages and incentives, such as

1 See Gove *et al* 1983; Zollar & Williamson 1987; Coombs 1991; Oswald 1997; Stack & Eshleman 1998; Frey & Stutzer 2000a; Peiró 2006; Dolan *et al* 2008; Frey 2008; Stanca 2009.

lower mortality risk, sharing in common household goods, and the possibility of combined accumulation of assets and wealth (Waite 1995). Stutzer & Frey (2006) argue that marriage is positively associated with individual well-being, since marriage provides an additional source of self-esteem. Married people are also less likely to be lonely and have the opportunity of gaining from a supportive relationship (Stutzer & Frey 2006).

Theoretically, this empirical positive relationship between marriage and subjective well-being is attributed to either social selection or social causation. Social selection suggests that more satisfied individuals are more likely to get (and remain) married than less satisfied people, as the former may have more attractive personalities. Social causation proposes that marriage makes people more satisfied due to the protective emotional and relational factors normally associated with marriage (Gove *et al* 1990). In addition, married people are generally healthier (Waite 1995; Stack & Eshleman 1998; Zimmermann & Easterlin 2006) and earn substantially higher incomes compared to people in other marital status groups (Rindfuss & Van den Heuvel 1990; Schoeni 1995; Zimmermann & Easterlin 2006).

A great deal of empirical research has explored the association between marital status and life satisfaction in developed countries. For the purpose of this study, the empirical evidence reviewed only comprises individual level analysis. Since the data used in this study are at the individual level, previous research using similar data on individuals are most able to inform the discussion and interpretation of the empirical results of this study.

Stack & Eshleman (1998) studied the effect of marital status on well-being in seventeen developed countries, using panel data for three years. The relationship between marital status and well-being was significant in sixteen of the seventeen countries, with the results of the association between marriage and well-being being consistent across various countries. The authors reported that marriage is associated with higher levels of financial satisfaction and health, which contributes to higher levels of life satisfaction. In addition, they found evidence in favour of the social causation hypothesis. Married people were more satisfied than cohabiters, while the latter

were more satisfied than single persons. Thus, it appears that getting married or entering a cohabiting relationship increases individual well-being, thereby suggesting that causality runs from marriage or cohabitation to life satisfaction. Stack & Eshleman (1998) also found that divorced, widowed and separated persons had lower levels of well-being relative to single individuals. The fact that only developed countries are analysed is one of the drawbacks of their analysis, since it provides no clear evidence about possible differences between richer and poorer countries regarding the relationship between marital status and life satisfaction.

Stack & Eshleman found no evidence of gender differences in the association between subjective well-being and marital status. Gender differences in life satisfaction across marital status groups are less common in the international literature, and have remained unexplored in South African research. Possible explanations for these gender differences lie primarily in financial gains and healthy behaviour gained from marriage. Men generally benefit more from improved physical health relative to women following marriage. If married women live relatively healthy lifestyles, their spouses are indirectly influenced into living healthier lifestyles themselves (Stack & Eshleman 1998; Zimmermann & Easterlin 2006). This, in turn, makes men more satisfied (Gerdtham & Johannesson 2001). Research has also shown that financial gains from marriage are higher for women than for men; married women are thus more satisfied compared to married men (Gove *et al* 1983).

Peiró (2006) studied the impact of socio-economic conditions on subjective well-being in eight developed countries. With the exception of China, the relationship between marital status and well-being was significant, with married people being the most satisfied. Using survey data on approximately 3 000 individuals from Northern Ireland, Borooah (2006) found no statistically significant relationship between marital status and subjective well-being.

In contrast to international research on marital status and well-being in developed countries, evidence for developing countries and South Africa are limited and mixed. In Peiró's (2006) analysis, the results suggested no significant relationship between well-being and marriage in six of the seven developing countries. Only in Argentina

were married individuals significantly more satisfied than singles, whereas well-being was found to be lower in Chile, Nigeria and Peru for separated individuals when compared to single individuals. Diener *et al* (2000) employed individual level data from the World Values Survey collected between 1990 and 1993, comparing the relationship between subjective well-being and marital status in 42 countries. In collectivist nations, married individuals were found to possess the highest levels of well-being compared to other marital status groups when compared to more individualist countries; thus differences in well-being between married and unmarried persons were highest in collectivist nations.² Hutchinson *et al* (2004) used data for 2 580 Jamaican individuals and found a positive relationship between marriage and well-being. Sarracino (2008) employed data from the World Values Survey and found a significant relationship between well-being and marital status in nine developing countries, with married individuals found to be more satisfied than singles, divorced, and widowed persons.

From the World Values Survey conducted between 1990 and 1993, Diener *et al* (2000) also studied the association between marital status and life satisfaction in South Africa and reported that married people were more satisfied than cohabitants and the divorced, with the latter being the least satisfied. Compared to other primarily collectivist nations, married people in South Africa reported among the highest levels of well-being. However, satisfaction levels of divorced individuals were among the lowest in all collectivist countries, which may suggest that divorce has a greater effect on life satisfaction than in individualist countries, especially given the low level of tolerance of divorce in South Africa (Diener *et al* 2000). Using data from the 1993 South African Integrated Household Survey, Powdthavee (2003) found inconclusive evidence of a relationship between marital status and subjective well-being. However, marital status was statistically significant in another study by Powdthavee (2005) of the 1997 October

2 Individualism and collectivism can also be referred to as independence and interdependence, respectively. Within individualist countries, people focus on their own needs and goals, thus placing emphasis on the individual. In collectivist countries, emphasis is placed on the group rather than the individual, and people focus on the pursuit of the group's needs and goals (Diener *et al* 1995; Diener *et al* 2000). For more detailed information regarding the differences between individualism and collectivism, see Diener *et al* (1995).

Household Survey, which suggested that, in South Africa, married persons are more satisfied than divorced and separated persons. Hinks & Gruen (2007) used the Quality of Life/Needs Assessment Survey conducted in Durban in 1999, 2003 and 2004, and found no statistically significant relationship between marital status and well-being, even when controlling for the different types of marriage in South Africa.

Mahadea & Rawat (2008) conducted a small study in Pietermaritzburg and, using descriptive analysis, found that married individuals reported the highest levels of mean well-being relative to persons from all other marital statuses. However, these differences in well-being were not statistically significant. Mahadea & Rawat's study has limitations, given the small sample used. Finally, Posel & Casale (2011) analysed South African survey data with the primary aim of assessing relative income dynamics and its relation to subjective well-being. Using marital status as a control, the authors found no evidence that married, cohabiting, divorced or widowed individuals are significantly more satisfied than singles. Given the focus of Posel and Casale's study, within-groups differences between marital status groups were not investigated.

The majority of research on developed countries finds that subjective well-being is highest among married persons. Within developing countries, however, such a finding has also been reported, although much less so. In South Africa in particular, the association between marital status and subjective well-being is much more inconclusive. This study employs a data set released in 2008, which is more recent compared to data used in the majority of previous South African research, and is likely to provide further evidence with respect to the relationship between life satisfaction and marital status. In addition, since South African research to date has ignored gender differences in life satisfaction across marital status groups, this study provides some evidence in this regard.

2. Data and method

The data used in the analysis originates from the first wave of the National Income Dynamics Survey (NIDS 2008), conducted by the Southern Africa Labour and Development Research Unit (SALDRU)

based at the University of Cape Town. The first wave of fieldwork started in February 2008 and the data was officially released in July 2009. NIDS aims to collect data every two years, enabling the construction of a nationally representative panel of individuals, and documenting outcomes such as income, expenditure, remittances, health, education, well-being, employment, and access to services over time. The baseline survey aimed to gather information on all resident members, where these members present the base sample that will remain in future NIDS samples. NIDS includes four questionnaires, namely household, adult, child and proxy questionnaires.

This article uses data based on responses to the adult questionnaire, which includes the relevant question regarding life satisfaction. To assess satisfaction with life, respondents were asked: "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?"

For ease of comparison in the descriptive analysis presented in the descriptive tables of this article, the 10-point satisfaction scale was re-coded as follows: 1 to 2 were coded as "very unsatisfied", 3 to 4 as "unsatisfied", 5 as "neutral", 6 to 7 as "satisfied", and 8 to 10 as "very satisfied". This article conducts analysis of variance (ANOVA) to test whether the mean life satisfaction score is significantly different between groups, while a median test is used to compare the equality of median life satisfaction across groups.

In this study, ordered probit models are estimated to assess correlates of subjective well-being, where the latter is assumed to be ordinal in nature. These models have been widely used in the literature and are most appropriate for subjective well-being analyses, where an underlying satisfaction score is estimated as a linear function of the independent variables and a set of cut-off points or threshold parameters.³ The probability of observing outcome i corresponds to the probability that the estimated linear function, plus random error, is within the range of the cut-off points estimated for the outcome.

3 See Frey & Stutzer 2000a & 2000b; Gerdtham & Johannesson 2001; Peiró 2006; Stutzer & Frey 2006; Hinks & Gruen 2007; Frey 2008.

Thus:

$$\Pr(LS = 10) = \Pr(\kappa_{i-1} < \sum_j \beta_j x_j + u \leq \kappa_i) = \Phi(\kappa_i - \sum_j x_j \beta_j) - \Phi(\kappa_{i-1} - \sum_j x_j \beta_j) \quad (1)$$

where $\Phi(\cdot)$ is the standard normal distribution and u is assumed to be normally distributed. The coefficients $\beta_1, \beta_2, \dots, \beta_k$ are estimated together with the cut-off points $\kappa_1, \kappa_2, \dots, \kappa_{i-1}$, where i is the number of possible outcomes. The model is specified as follows:

$$y_i^* = X_i \beta + \varepsilon_i \quad (2)$$

where y_i^* measures reported life satisfaction of the i -th scale, based on the 10-point scale; X_i is a $(k \times 1)$ vector of explanatory variables; β is a $(k \times 1)$ vector of unknown parameters, and ε_i is a normally distributed error term with $(0, \sigma^2)$. The ordering of alternatives increases as y^* crosses a series of increasing thresholds. For an m -alternative ordered model, $y_i = j$ if $\alpha_{j-1} < y_i^* \leq \alpha_j$, where $\alpha_0 = -\infty$ and $\alpha_m = \infty$ (Cameron & Trivedi 2005).

Respondents younger than eighteen were excluded from the analysis, since people older than eighteen are more likely to get married and hence more likely to separate, get a divorce, or lose a partner through death (Waite 1995; Gerdtham & Johannesson 2001; Soons & Kalmijn 2009). In addition, observations were coded as missing where respondents refused to answer any particular question or answered “don’t know”, or where the answer was not applicable to the specific respondent. As such, all missing observations are excluded from the relevant analysis.

The explanatory variables used in the analysis, which were informed by the relevant literature, are marital status (Stack & Eshleman 1998; Diener *et al* 2000; Soons & Kalmijn 2009), age (Frey & Stutzer 2000a; Powdthavee 2003; Frijters & Beaton 2008), gender (Clark & Oswald 1994; Oswald 1997), race (Ball & Robbins 1986; Powdthavee 2003; Dolan *et al* 2008), education (Oswald 1997, Peiró 2006, Frey 2008), absolute income (Easterlin 2001; Ferrer-i-Carbonell 2005; Frey 2008), relative income (Powdthavee 2003; Bookwalter & Dalenberg 2010; Posel & Casale 2011), health status (Gerdtham & Johannesson 2001; Van Praag & Ferrer-i-Carbonell 2004), and religion (Ferriss 2002; Rule 2006; Mochon *et al* 2008). Except for marital status, which is

the main variable of interest, the remaining covariates are included as controls, as these have been identified in the literature as possible correlates of life satisfaction. Addition of such factors also permits comparison of the results with previous research.

Marital status is an independent categorical variable consisting of five categories, namely singles (base), cohabiters, divorced/separated, widowed, and married; age denotes the respondent's age in years and, in order to test for non-linearity in the relationship between age and life satisfaction, the square of age is also included; gender is a dummy variable taking on a value of 0 if the respondent is male (base group) and 1 otherwise; race consists of four groups, namely Blacks (base group), Indians, Coloureds and Whites; health denotes subjective assessment of current health and consists of five categories, including "poor" (base group), "fair", "good", "very good", and "excellent"; religion refers to the importance of religious activities to the respondent, with the answers consisting of "not at all important" (base group), "unimportant", "important" and "very important"; education refers to the respondent's level of education, including no education (base group), primary, secondary, and post-secondary education; absolute income is the logarithm of net income received per month; relative income is a categorical variable which consists of "much below average income" (base group), "below average income", "average income", "above average income", and "much above average income", where relative income reflects the perception of the respondent regarding his/her own income relative to households living in the same neighbourhood.

To determine the association between life satisfaction and marital status in general, a baseline model, which includes only time invariant individual characteristics, is first estimated with the aim of determining the association between marital status and life satisfaction without controlling for additional factors expected to be associated with life satisfaction. Similarly, separate regressions are estimated for the male and female subsamples in order to examine whether the relationship between life satisfaction and marital status differs between men and women. Since the categorical variable on marital status compares singles to all other categories, the nature of such a variable does not allow for comparisons of married individuals with all other categories as a whole. As such, an additional binary variable is constructed

equalling 1 if the person is married, and 0 otherwise. This variable is included in additional distinct specifications of the regression model and aims to determine whether married persons are more satisfied with their lives relative to all other marital status groups. Finally, since the life satisfaction benefit from marriage is likely to depend on income (Rindfuss & Van den Heuvel 1990; Zimmermann & Easterlin 2006), this study adds an interaction term between income and the binary married variable to determine whether this is, in fact, the case.

3. Results

Table 1 shows the percentage of respondents by life satisfaction and marital status. The majority (25.5%) of the respondents are satisfied, while 18.5% are very satisfied, and 23.5% and 13.0% are unsatisfied and very unsatisfied, respectively. Singles constitute approximately 45.6% of the sample, while 31.8% of respondents are married. Only 3.0% of respondents are divorced or separated. Mean life satisfaction is 5.43, suggesting that, on average, South Africans are neither satisfied nor unsatisfied. However, given that average reported level of life satisfaction is above five, South Africans seem to be relatively well off. Table 2 presents reported life satisfaction as a percentage when disaggregated by marital status.⁴ The Pearson *chi*-square test indicates that the relationship between life satisfaction and marital status is statistically significant ($\chi^2 = 207.9, p < 0.001$). Married individuals are more satisfied overall compared to all other groups, with 22.3% being very satisfied and 28.5% satisfied. Only 9.0% of married respondents reported that they were very unsatisfied. About 20.3% and 15.5% of divorced/separated individuals reported being very satisfied and very unsatisfied, respectively. On average, cohabitants (28.0%) and the widowed (28.4%) seem to be the least satisfied when compared to other groups. It is interesting to note that cohabiters seem relatively unsatisfied with their lives. This is in contrast to international studies that find similar levels of life satisfaction between married and

4 It should be noted that Table 2 contains fewer total observations when compared to Table 1. This is due to missing values in responses to either marital status or life satisfaction. For instance, some individuals reported their marital status but not satisfaction with life, while others reported life satisfaction but not their marital status.

cohabiting individuals, provided that the cohabiting relationship is stable (Brown 2000; Dolan *et al* 2008). A possible explanation for this finding may be related to social stigma. Legally, cohabitation has no status in South Africa, although current proposed legislation in the form of the Domestic Partnerships Bill aims to address these issues in future. Many cohabiters have displayed substantial dissatisfaction with the lack of legal protection available to them (Goldblatt 2003; Smith 2009).

The ANOVA suggests that the mean levels of life satisfaction significantly differ among the respective marital status groups ($F = 41.3, p < 0.001$). Mean life satisfaction of married persons is significantly higher than that of singles, cohabitants, and widowed individuals ($p < 0.001$). For instance, the mean life satisfaction score for married persons is on average 0.67 points higher than for cohabitants, which is a large difference. Moreover, divorced/separated individuals reported a mean satisfaction level of 0.38 and 0.44 points higher than cohabitants ($p < 0.10$) and the widowed ($p < 0.05$), respectively. Medians of the respective marital status groups are significantly different from each other, as indicated by the median test ($\chi^2 = 143.45, p < 0.001$).

Table 1: Percentage of respondents, by life satisfaction and marital status

Life satisfaction	(%)	Marital status	(%)
Very unsatisfied	13.0 (n=1547)	Single	45.6 (n=6364)
Unsatisfied	23.5 (n=2798)	Cohabiting	9.6 (n=1331)
Neutral	19.6 (n=2338)	Widow/Widower	10.0 (n=1389)
Satisfied	25.5 (n=3043)	Divorced/Separated	3.0 (n=418)
Very satisfied	18.5 (n=2203)	Married	31.8 (n=4421)
Total:	100.0 (n=11929)	Total:	100.0 (n=13923)

Table 2: Life satisfaction (%), by marital status

Life satisfaction	single	cohabiting	widow/ widower	divorced/ separated	married	Total
Very unsatisfied	15.0 (n=818)	14.2 (n=167)	14.5 (n=167)	15.5 (n=57)	9.00 (n=334)	13.0 (n=1543)
Unsatisfied	24.6 (n=1346)	28.0 (n=330)	28.4 (n=327)	19.5 (n=72)	19.2 (n=716)	23.5 (n=2791)
Neutral	18.5 (n=1013)	20.2 (n=238)	19.7 (n=227)	19.5 (n=72)	20.8 (n=776)	19.6 (n=2326)
Satisfied	24.7 (n=1353)	22.9 (n=269)	22.6 (n=260)	25.2 (n=93)	28.5 (n=1060)	25.5 (n=3035)
Very satisfied	17.2 (n=939)	14.7 (n=173)	14.7 (n=169)	20.3 (n=75)	22.3 (n=837)	18.5 (n=2193)
Total	100.0 (n=5469)	100.0 (n=1177)	100.0 (n=1150)	100.0 (n=369)	100.0 (n=3723)	100.0 (n=11888)
Pearson $\chi^2 = 207.9$ ($p < 0.001$)						

Table 3 presents the overall regression results for an ordered probit model in which reported life satisfaction was regressed on marital status and other relevant covariates. All independent variables jointly explain the variation in reported life satisfaction ($p < 0.001$), with a pseudo R^2 coefficient of approximately 6%. The latter is similar to that obtained in previous South African research on subjective well-being (see Powdthavee 2005; Hinks & Gruen 2007).

In Table 3, the baseline model results in the first column show that married individuals are significantly more satisfied than singles ($p < 0.001$) and that, based on equality tests, life satisfaction is higher for married people relative to those who are cohabiting ($p < 0.001$), widowed ($p < 0.001$) and divorced/separated ($p < 0.01$). In addition, cohabiters are slightly more satisfied compared to widowed people ($p < 0.10$). However, when controlling for the additional individual factors in the overall sample regression (column 2), the relationship between marital status and life satisfaction becomes less pronounced, particularly among married individuals for whom life satisfaction is not significantly higher compared to singles. The results also suggest that divorced/separated individuals are less satisfied than

singles ($p < 0.05$). Compared to single individuals, life satisfaction for married people, cohabitants and the widowed are not significantly different. With respect to differences within the marital status groups, the divorced/separated are more satisfied than the widowed ($p < 0.10$), while the latter are less satisfied than married individuals ($p < 0.01$) (column 2).

The finding that married individuals do not possess significantly higher levels of well-being compared to singles is incompatible with the findings of numerous studies.⁵ Moreover, in the overall sample, married individuals are only more satisfied than the widowed, which implies that marriage does not seem to provide any major additional positive effects on individual well-being. While marriage is significantly associated with greater life satisfaction in the baseline sample relative to singles, this relationship disappears when controlling for the additional factors in the overall sample model (only widowed people are significantly less satisfied than the married ones). Using the binary 'married' variable in the third column of Table 3, however, indicates that married individuals are significantly more satisfied with their lives when compared to those who are not married ($p < 0.001$). This variable also remains statistically significant even after controlling for additional personal characteristics ($p < 0.01$) (column 4). The fact that the marriage coefficient remains significant after controlling for all other variables suggests that marriage provides additional benefits to individual well-being that are not captured by the model.⁶ In the final overall sample regression reported in column 5 of Table 3, the interaction term is significant ($p < 0.05$) and indicates that for those who are not married, a higher level of income decreases the disparity in life satisfaction relative to married people. Therefore, the married are more satisfied than all other marital status groups partly due to higher incomes received among the former. In addition, it is also

5 See Oswald 1997; Stack & Eshleman 1998; Peiró 2006; Stanca 2009.

6 It should be noted that this study compares married individuals to those from all other groups as a whole. A recent study by Botha & Booysen (2013), however, found no significant differences in well-being between those in marriage and cohabitation. Since marriage and cohabitation both imply a time-intensive intimate relationship, Botha & Booysen's (2013) study is more relevant for the assessment of well-being differences among types of romantic relationships, whereas the current study is more concerned with marriage *per se* relative to all other marital status groups.

possible that the marginal well-being benefit from higher income is greater when married.

In the male sample in Table 4, married persons are significantly more satisfied than singles (column 1). However, this significant association disappears when individual controls are added (column 2). Post-estimation *chi*-square tests confirm the absence of any relationship between the various marital status groups and reported life satisfaction. In column 3, the findings indicate that married men are more satisfied than men from all other marital statuses ($p < 0.01$). After controlling for individual factors, the 'married' coefficient becomes insignificant, implying that married men do not report significantly higher levels of well-being compared to men of all other marital statuses (column 4). The interaction term is also not significant, thereby indicating that income does not raise married men's well-being relative to men from other marital status groups. It would thus appear that South African men, at least to some extent, view other factors such as income and social status, rather than marriage, as more important for personal well-being and satisfaction relative to their marital status.

Similar to the results in the male sample, Table 5 shows that married women are more satisfied than single women ($p < 0.001$) (column 1). When controlling for individual characteristics, divorced/separated women are significantly less satisfied than their single counterparts ($p < 0.10$), whereas married women remain significantly more satisfied compared to single women ($p < 0.05$) (column 2). In addition, post-estimation equality tests show that cohabiting women are more satisfied than divorced/separated women ($p < 0.10$), whereas married women are also more satisfied compared to widowed ($p < 0.05$) and divorced/separated ($p < 0.01$) women. Since the 'married' coefficient in column 4 of Table 5 remains statistically significant even after controlling for the additional control variables ($p < 0.01$), marriage, as opposed to all other marital statuses, provides further intrinsic well-being advantages to women in addition to factors such as income and health. Furthermore, the interaction term between income and being married is statistically significant ($p < 0.001$), which shows that married women are more satisfied than all other women partly since the former earn higher levels of absolute income. Overall, these results indicate that, while life satisfaction is not strongly associated with marital status among the male group, divorce or separation seems to

relate particularly negatively for women, whereas marriage serves as a positive state in terms of greater life satisfaction among the female group.

Table 3: Overall sample ordered probit regression results

Dependent variable: Life satisfaction	(1)	(2)	(3)	(4)	(5)
Marital status (omitted = single)					
Cohabitation	-0.046 [0.033]	-0.009 [0.036]			
Widowed	0.037 [0.040]	-0.023 [0.042]			
Divorced/separated	0.022 [0.058]	-0.142 [0.063]**			
Married	0.190 [0.027]***	0.039 [0.029]			
Married (omitted = not married)			0.188 [0.022]***	0.060 [0.023]***	0.088 [0.027]***
Age	-0.018 [0.003]***	-0.012 [0.003]***	-0.018 [0.003]***	-0.013 [0.033]***	-0.014 [0.003]***
Age squared	0.000 [0.000]***	0.000 [0.000]***	0.000 [0.000]***	0.000 [0.000]***	0.000 [0.000]***
Race (omitted = Black)					
Coloured	0.678 [0.027]***	0.557 [0.030]***	0.676 [0.027]***	0.555 [0.030]***	0.556 [0.030]***
Indian	0.599 [0.065]***	0.399 [0.076]***	0.604 [0.064]***	0.391 [0.077]***	0.387 [0.077]***
White	0.834 [0.031]***	0.507 [0.038]***	0.836 [0.031]***	0.499 [0.038]***	0.500 [0.037]***
Female	-0.049 [0.019]***	-0.062 [0.022]***	-0.045 [0.019]**	-0.065 [0.021]***	-0.066 [0.021]***
Absolute income		0.014 [0.003]***		0.014 [0.003]***	0.019 [0.004]***
Relative income (omitted = much below average income)					
Below average income		0.337 [0.030]***		0.337 [0.030]***	0.334 [0.030]***
Average income		0.830 [0.031]***		0.829 [0.031]***	0.827 [0.031]***
Above average income		1.099 [0.047]***		1.098 [0.047]***	1.098 [0.047]***
Much above average income		1.300 [0.085]***		1.298 [0.085]***	1.298 [0.085]***
Education (omitted = none)					

Botha & Booysen/Relationship between life satisfaction and marital status

Dependent variable: Life satisfaction	(1)	(2)	(3)	(4)	(5)
Primary		0.109 [0.034]***		0.107 [0.034]***	0.106 [0.034]***
Secondary		0.177 [0.036]***		0.172 [0.036]***	0.172 [0.036]***
Post-secondary		0.207 [0.041]***		0.203 [0.040]***	0.204 [0.040]***
Health (omitted = poor)					
Fair		0.151 [0.043]***		0.152 [0.043]***	0.152 [0.043]***
Good		0.170 [0.041]***		0.171 [0.041]***	0.171 [0.041]***
Very good		0.309 [0.042]***		0.309 [0.042]***	0.309 [0.042]***
Excellent		0.201 [0.044]***		0.201 [0.044]***	0.201 [0.044]***
Religion (omitted = not at all important)					
Unimportant		-0.021 [0.066]		-0.019 [0.066]	-0.020 [0.066]
Important		0.073 [0.056]		0.073 [0.056]	0.072 [0.055]
Very important		0.334 [0.057]***		0.334 [0.057]***	0.334 [0.056]***
Married* Absolute income					-0.013 [0.006]**
Pseudo R ²	0.022	0.059	0.022	0.058	0.058
Observations	12130	10743	12130	10743	10743
Wald χ^2	1394.7***	2634.0***	1389.8***	2632.5***	2631.9***

Note: Results are obtained from the ordered probit regression model. Robust standard errors are shown in parentheses. $p < 0.001$ ***, $p < 0.05$ **, $p < 0.10$ *.

Table 4: Ordered probit regression results for the male sample

Dependent variable: Life satisfaction	(1)	(2)	(3)	(4)	(5)
Marital status (omitted = single)					
Cohabitation	-0.046 [0.053]	-0.055 [0.058]			
Widowed	0.094 [0.096]	-0.051 [0.104]			
Divorced/separated	0.055 [0.103]	-0.174 [0.113]			
Married	0.197 [0.045]***	-0.011 [0.050]			
Married (omitted = not married)			0.192 [0.037]***	0.028 [0.041]	0.014 [0.052]
Age	-0.020 [0.005]***	-0.011 [0.006]*	-0.020 [0.005]***	-0.014 [0.006]**	-0.014 [0.006]**
Age squared	0.000 [0.000]***	0.000 [0.000]**	0.000 [0.000]***	0.000 [0.000]***	0.000 [0.000]***
Race (omitted = Black)					
Coloured	0.599 [0.042]***	0.493 [0.049]***	0.598 [0.042]***	0.490 [0.049]***	0.489 [0.049]***
Indian	0.481 [0.108]***	0.297 [0.122]**	0.488 [0.108]***	0.286 [0.122]**	0.287 [0.123]**
White	0.756 [0.047]***	0.432 [0.059]***	0.759 [0.047]***	0.425 [0.058]***	0.425 [0.058]***
Absolute income		0.013 [0.005]***		0.012 [0.005]***	0.010 [0.006]*
Relative income (omitted = much below average income)					
Below average income		0.284 [0.049]***		0.284 [0.049]***	0.284 [0.049]***
Average income		0.743 [0.050]***		0.743 [0.050]***	0.743 [0.050]***
Above average income		1.023 [0.073]***		1.020 [0.073]***	1.020 [0.073]***
Much above average income		1.382 [0.137]***		1.382 [0.137]***	1.381 [0.137]***
Education (omitted = none)					
Primary		0.085 [0.057]		0.082 [0.057]	0.081 [0.057]

Botha & Booysen/Relationship between life satisfaction and marital status

Dependent variable: Life satisfaction	(1)	(2)	(3)	(4)	(5)
Secondary		0.161 [0.061]***		0.157 [0.060]***	0.156 [0.060]***
Post-secondary		0.229 [0.065]***		0.227 [0.065]***	0.226 [0.065]***
Health (omitted = poor)					
Fair		0.125 [0.081]		0.128 [0.080]	0.128 [0.080]
Good		0.119 [0.075]		0.122 [0.075]	0.122 [0.075]
Very good		0.317 [0.076]***		0.320 [0.076]***	0.320 [0.076]***
Excellent		0.225 [0.078]***		0.228 [0.078]***	0.228 [0.078]***
Religion (omitted = not at all important)					
Unimportant		0.031 [0.085]		0.036 [0.085]	0.036 [0.085]
Important		0.093 [0.073]		0.096 [0.073]	0.097 [0.073]
Very important		0.332 [0.076]***		0.323 [0.076]***	0.323 [0.076]***
Married*Absolute income					0.004 [0.009]
Pseudo R2	0.018	0.052	0.018	0.052	0.052
Observations	4805	4172	4805	4172	4172
Wald χ^2	459.3***	924.2***	455.4***	922.4***	924.2***

Note: Results are obtained from the ordered probit regression model. Robust standard errors are shown in parentheses. $p < 0.001$ ***, $p < 0.05$ **, $p < 0.10$ *.

Table 5: Ordered probit regression results for the female sample

Dependent variable: Life satisfaction	(1)	(2)	(3)	(4)	(5)
Marital status (omitted = single)					
Cohabitation	-0.034 [0.043]	0.029 [0.047]			
Widowed	0.005 [0.046]	-0.029 [0.048]			
Divorced/separated	-0.002 [0.071]	-0.132 [0.076]*			
Married	0.199 [0.033]***	0.081 [0.036]**			
Married (omitted = not married)			0.203 [0.027]***	0.096 [0.029]***	0.137 [0.033]***
Age	-0.016 [0.004]***	-0.012 [0.004]***	-0.017 [0.004]***	-0.013 [0.004]***	-0.014 [0.004]***
Age squared	0.000 [0.000]***	0.000 [0.000]***	0.000 [0.000]***	0.000 [0.000]***	0.000 [0.000]***
Race (omitted = Black)					
Coloured	0.731 [0.035]***	0.600 [0.039]***	0.730 [0.035]***	0.599 [0.039]***	0.603 [0.039]***
Indian	0.677 [0.079]***	0.470 [0.097]***	0.679 [0.079]***	0.461 [0.098]***	0.454 [0.097]***
White	0.893 [0.041]***	0.563 [0.050]***	0.893 [0.040]***	0.557 [0.050]***	0.560 [0.050]***
Absolute income		0.017 [0.004]***		0.017 [0.004]***	0.025 [0.006]***
Relative income (omitted = much below average income)					
Below average income		0.370 [0.039]***		0.369 [0.039]***	0.366 [0.039]***
Average income		0.882 [0.041]***		0.881 [0.041]***	0.879 [0.041]***
Above average income		1.150 [0.061]***		1.149 [0.061]***	1.149 [0.061]***
Much above average income		1.244 [0.108]***		1.239 [0.109]***	1.239 [0.109]***
Education (omitted = none)					
Primary		0.124 [0.042]***		0.121 [0.042]***	0.119 [0.042]***

Botha & Booysen/Relationship between life satisfaction and marital status

Dependent variable: Life satisfaction	(1)	(2)	(3)	(4)	(5)
Secondary		0.189 [0.045]***		0.182 [0.045]***	0.180 [0.045]***
Post-secondary		0.198 [0.053]***		0.190 [0.053]***	0.191 [0.053]***
Health (omitted = poor)					
Fair		0.158 [0.051]***		0.160 [0.051]***	0.160 [0.051]***
Good		0.195 [0.049]***		0.196 [0.049]***	0.196 [0.049]***
Very good		0.295 [0.052]***		0.295 [0.052]***	0.294 [0.052]***
Excellent		0.169 [0.054]***		0.169 [0.054]***	0.169 [0.054]***
Religion (omitted = not at all important)					
Unimportant		-0.090 [0.105]		-0.092 [0.105]	-0.091 [0.105]
Important		0.079 [0.086]		0.075 [0.085]	0.078 [0.085]
Very important		0.362 [0.086]***		0.358 [0.086]***	0.361 [0.086]***
Married*Absolute income					-0.026 [0.008]***
Pseudo R ²	0.025	0.064	0.025	0.064	0.064
Observations	7325	6571	7325	6571	6571
Wald χ^2	947.2***	1740.5***	946.7***	1735.1***	1732.5***

Note: Results are obtained from the ordered probit regression model. Robust standard errors are shown in parentheses. $p < 0.001$ ***, $p < 0.05$ **, $p < 0.10$ *.

With respect to the additional control variables reported in Tables 3 to 5, there are some interesting findings, and the results for each covariate are roughly the same for both the overall and gender samples. The results indicate a U-shaped relationship between age and life satisfaction in all regressions. In the overall sample, for instance, life satisfaction decreases until the age of 36 ($p < 0.01$), whereafter it increases with age ($p < 0.001$). The U-shaped relationship between age

and life satisfaction is in accordance with the literature on developed countries (Frey & Stutzer 2000; Gerdtham & Johannesson 2001; Frijters & Beaton 2008) and South Africa (Powdthavee 2003 & 2005; Botha & Booysen 2013), but contrary to the findings of Hinks & Gruen (2007), who report no significant relationship between age and well-being in South Africa.

In all samples, Coloureds, Indians and Whites are all significantly more satisfied relative to Blacks ($p < 0.001$). A post-estimation test on the equality of the coefficients also indicates that Coloureds are more satisfied than Indians ($p < 0.05$). These findings are similar to those of Ball & Robbins (1986) and Dolan *et al* (2008), namely that Whites generally report higher levels of satisfaction than Blacks in the US. Oswald (1997) reported similar results for the UK. For South Africa, Powdthavee (2003) and Hinks & Gruen (2007) found that Whites have higher levels of well-being relative to Blacks, Coloureds and Asians. In this study, however, Whites are found to be less satisfied than Coloureds. The result that Blacks are less satisfied relative to the other racial groups is not surprising within the South African context (Ebrahim *et al* 2013), as Whites benefited from apartheid and may still possess higher levels of well-being as a result of the relative affluence they still enjoy, while Blacks, in particular, continue to experience hardships resulting from South Africa's political history.⁷

Men are significantly more satisfied than women in the overall sample ($p < 0.01$) (Table 3). This supports the findings of Clark & Oswald (1994) that men are significantly more satisfied than women. The findings of this article also contrast with the previous South African research of Powdthavee (2003) and Hinks & Gruen (2007), who both found no evidence of differences in life satisfaction among gender groups in South Africa. However, Ebrahim *et al* (2013) reported significant differences in well-being between men and women in South Africa, with the latter being most satisfied.

Absolute income is significantly positively associated with life satisfaction, and holds true in both the overall sample and the gender subsamples. Thus, people with a higher level of income are more

7 Hinks & Gruen (2007: 325) argue that apartheid led to the current "racial hierarchy" in the everyday lives of South Africans, which has a negative impact on the happiness of the Non-White racial groups.

satisfied than those with a lower income. This finding is widely supported in the literature.⁸ Similar to the findings of Powdhavee (2003) and Posel & Casale (2011), based on South African data, individuals who perceive their relative income to be higher, report higher levels of well-being than those who perceive their income to be lower compared to other neighbouring households. Post-estimation tests in the ordered probit regression also indicate that people who perceive their incomes to be 'much above average income' are more satisfied compared to other groups ($p < 0.05$).

Although differences in the measurement scales of absolute and relative income restrain us from making direct comparisons between absolute and relative income, there is reason to suspect that relative income may be more important than absolute income for subjective well-being. Oswald (1997), Clark *et al* (2008) and Frey (2008) share this idea and argue that, due to personal aspirations, it is financial position and status relative to other individuals rather than absolute income that matter most for subjective well-being. In addition, income adaptation may cause individuals to get used to their financial situation. In this instance, any additional changes in income will have small and short-lived effects (Clark *et al* 2008). It is likely that this latter explanation is more true in developed markets, where incomes are on average higher than in developing countries. Thus, although relative income might have a larger influence than absolute income on well-being in South Africa, the developing nature of South Africa's economy coupled with low incomes and high levels of poverty would imply that additional earned income may still contribute significantly to higher levels of life satisfaction.

Across all regressions and samples, adults with higher levels of education are found to be more satisfied relative to those with lower levels of education, whereas people with no education have the lowest levels of well-being. The results are similar with respect to the differences across the other education groups. In the overall sample regressions, for instance, people with secondary ($p < 0.05$) and post-secondary ($p < 0.01$) education are more satisfied compared to those with only primary education. Existing research has reported mixed

8 See Easterlin 2001; Gerdtham & Johannesson 2001; Frey & Stutzer 2002; Ferreri-Carbonell 2005; Luttmer 2005; Hinks & Gruen 2007; Frey 2008.

results, with higher education chiefly being positively related to well-being,⁹ but education, although as an exception rather than the rule, has also been found to be negatively associated with individual well-being (Clark & Oswald 1994).

Powdthavee (2005) and Hinks & Gruen (2007) found weak evidence of a positive relationship between education and well-being in South Africa. Contrary to *a priori* expectations, however, Powdthavee (2003) found a negative association between education and subjective well-being in South Africa, which is ascribed to the failure of high aspirations (due to higher education) to affect current income, as well as the possibility that the return on education in poorer countries might be measured in terms of higher wealth. Since education remains a significant determinant of life satisfaction in this study, even after controlling for absolute income, it may indicate that education provides added unobserved benefits in addition to the value provided by higher income. For example, higher education may lead to greater productivity and social status (Witter *et al* 1984), while education may also enable people to attain personal aspirations and be more appreciative of non-monetary aspects of life (Diener *et al* 2000).

As expected, life satisfaction and self-rated health are strongly positively related. Individuals who reported having poor health are less satisfied compared to all other groups in the overall sample ($p < 0.001$). Health and well-being are also positively associated for both men and women. This is in accordance with the findings of many studies.¹⁰ Health in South Africa is of primary concern, especially in light of the HIV/AIDS pandemic that continues to have a detrimental effect on health and well-being.

With respect to the importance of religion, individuals who view religious activities as very important in their lives report higher levels of well-being compared to those who attach no importance to religion at all ($p < 0.001$), which is also the case in the male and female samples. Post-estimation results on equality of the coefficients in the overall sample also indicate that those who view religion as very important

9 See Oswald 1997; Frey & Stutzer 2000a; Frey 2008; Stanca 2009.

10 See Gerdtham & Johannesson 2001; Perneger *et al* 2004; Van Praag & Ferrer-i-Carbonell 2004; Peiró 2006; Botha & Booysen 2013; Ebrahim *et al* 2013.

are more satisfied than those who view religion as important ($p < 0.001$) and unimportant ($p < 0.001$), whereas individuals who view religion as important are more satisfied relative to those who view religion as unimportant ($p < 0.05$). These results suggest that religious people are more satisfied than less religious people, which are consistent previous research (Ferriss 2002; Rule 2006 and Mochon *et al* 2008).

4. Conclusion

Married individuals reported the highest mean level of life satisfaction overall compared to other marital status groups, while cohabiters and the widowed generally reported the lowest mean satisfaction. For the overall sample regression, results indicate that married people, cohabitants, and the divorced/separated are not statistically significantly more satisfied than singles. Married and divorced/separated people are, however, significantly more satisfied relative to the widowed. However, married individuals are more satisfied than those in other marital status groups as a whole, and this finding is also true for women. When controlling for individual factors in the male sample, however, marriage does not provide significant well-being gains, suggesting that marriage provides well-being benefits for women, whereas non-marriage factors predominantly determine male well-being. In general, the results are in line with existing studies that have found married individuals to be significantly more satisfied than all other marital status groups.

It should be noted that this study has limitations. Since the data used is cross-sectional in nature, this study can only infer associations of marital status with subjective well-being, rather than causality. As such, the social selection and social causation theories cannot be investigated and a study of the extent to which life satisfaction changes over time is not possible. In addition, the data do not allow a distinction between the civil and traditional types of marriage in South Africa. These types of marriages are likely to display different associations with subjective well-being (Hinks & Gruen 2007). Ferrer-i-Carbonell & Frijters (2004) have also shown that allowing for fixed effects such as personality traits could substantially alter regression results. Instead of viewing subjective well-being as ordinal, responses to questions on well-being may indeed depend on each person's personality. Some

people are intrinsically happy, while others are not. Controlling for these traits may cause less bias in estimates of ordered models. The National Income Dynamics Study, however, does not include any information regarding individual personality traits.

The overall results of this study suggest relatively mixed results regarding the relationship between marital status and life satisfaction. When employing marital status as a categorical variable in the overall sample, marriage *per se* does not make people more satisfied when controlling for individual characteristics, except relative to being widowed. The evidence also shows that widowed people are the least satisfied, even more so than the divorced/separated. Comparing married persons to those from all other marital statuses as a whole, however, reveals that the former are significantly more satisfied. Thus, life satisfaction differences are not significant when comparing marriage to a specific marital status (except to widowhood), although the differences are significant if we relate marriage to all other marital statuses.

Married women are more satisfied than single, widowed, and divorced/separated women, while married men are also more satisfied relative to men from all other marital statuses. In the male sample, on the other hand, the married are more satisfied than singles and more satisfied when compared to men from all other marital statuses jointly. However, these differences become insignificant when we control for additional individual characteristics. This study's results for the overall sample and for women are, therefore, generally in line with those of most developed countries where married persons are found to be the most satisfied. This is not the case in the male sample, where married men are not significantly more satisfied than all other men when taking individual factors into account. One interesting area for future research that would extend the present study would be to analyse marital status transitions within a panel data framework to examine how such transitions impact on reported satisfaction with life among South Africans.

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