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Happiness, socioeconomic status, and family functioning in South African households: A structural equation modelling approach

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Abstract

This paper examines how SES relates to individual happiness, while also controlling for family functioning; the latter measured by the Family Attachment and Changeability Index 8 (FACI8). An individual-, household-, and subjective SES index are developed via multiple correspondence analyses (MCA). Using data from the 2012 South African Social Attitudes Survey (SASAS), the paper employs structural equation modelling (SEM) to explore the relationship between happiness, SES, and family functioning. Multiple-group SEM (MGSEM) is employed to examine the association between happiness and family functioning across quartiles of the three SES indices. The results reveal that higher SES is significantly related to greater happiness, with the role of household- and subjective SES being stronger than individual SES. Furthermore, improved levels of family changeability are positively associated with happiness, whereas there is no relationship between happiness and family attachment. Overall, levels of family changeability and individual happiness are likely to benefit from improvements in socioeconomic status.

Keywords: Happiness; socioeconomic status; SES; family functioning; structural equation modelling; South Africa

Introduction

The past few decades have witnessed an enormous expansion in the subjective well-being literature (Diener, 2000; Frey & Stutzer, 2002; Dolan *et al.*, 2008; Diener & Ryan, 2009; MacKerron, 2012; Levinson, 2013). Research has uncovered numerous predictors of subjective well-being across a variety of national and international contexts, expanding the understanding of individual well-being and facilitating the formulation of well-targeted policy. One of the most important determinants of happiness – as reported in the existing literature – is socioeconomic status (SES), displaying a significant, positive association with subjective well-being (Conger & Donnellan, 2007; Kolenikov & Angeles, 2009; Conger *et al.*, 2010).

The existing subjective well-being literature, however, has mainly considered the traditional *individual-level* SES indicators (Fuentes & Rojas, 2001; Subramanian *et al.*, 2005; Conger *et al.*, 2010), in particular education, income, employment status, and occupational status, while an individual's objective and perceived *broader socioeconomic environment* also matters (Powdthavee, 2007; Anderson *et al.*, 2012; Cundiff *et al.*, 2013). The SES environment of the household in which an individual resides is expected to directly impact on a person's well-being. According to the social causation hypothesis, the general socioeconomic environment has a potentially significant effect on individual well-being and development. The broader SES context can also influence family functioning patterns, thereby affecting the well-being of individuals within those families (Botha *et al.*, 2017a) – resulting in an indirect effect of the broader SES context on individual well-being. Factors like household assets and living standards, moreover, can be important contributors to family stress (Rothwell & Han, 2010; Han & Rothwell, 2014; Kabudula *et al.*, 2016; Botha *et al.*, 2017a) as well as individual well-being and family relationships (Botha *et al.*, 2017a). Thus, this paper takes an expansive view of SES, beyond the more traditional individual-level factors of income and education (Conger & Donnellan, 2007; Sheppard *et al.*, 2009; Rothwell & Han, 2010; Han & Rothwell, 2014).

This paper employs three composite SES indices (Phongsavan *et al.*, 2006; Georgiades *et al.*, 2008; Kabudula *et al.*, 2016) originally developed in Botha *et al.* (2017a). These indices reflect the traditional individual SES, household SES, and subjective SES. The advantage of using three different SES measures makes it possible to determine how happiness is associated with various dimensions of SES. Another distinct advantage is that objective SES (i.e. individual- and household SES) as well as subjective SES can be explored simultaneously to determine if objective and subjective SES relate differently to happiness.

To the best of our knowledge, only Guillen-Royo *et al.* (2013) and Feeny *et al.* (2014) have used composite wealth- or asset indices to explore how they relate to individual happiness. Using Taiwanese data, Guillen-Royo *et al.* (2013) used a material wealth index consisting of the number of assets owned by the household. The results revealed that people are happier if they live in households scoring higher

on the wealth index, suggesting that people value material possessions. Feeny *et al.* (2014) explored data from two villages in Melanesia and constructed a wealth index via principal component analysis that included 14 variables reflecting the household assets and dwelling characteristics. The authors reported a significant positive relationship between happiness and household wealth.

Besides the household-level SES indices – measuring its wealth – the current study also incorporates family functioning – i.e. how household members interact – as a predictor of individual well-being. Previous research using South African data has reported a significant positive relationship between happiness and family functioning (Botha & Booysen, 2014) as well as between family functioning and SES (Botha *et al.*, 2017a). Family functioning is a multidimensional concept that reflects the intra-family relational processes by which family members interact and work towards attaining family goals and functions (Morris & Blanton, 1998; Patterson, 2002; Botha & Booysen, 2014). There is an established interplay between the quality of family functioning and socioeconomic conditions (Conger *et al.*, 2010). Another distinctive element of this paper is the consideration of whether the role of family functioning in explaining happiness differs across the SES gradient.

The focus of this paper is on South Africa. South African research investigating happiness in particular is relatively limited (Botha & Booysen, 2014), especially compared to other countries, and thus further research into the determinants of happiness in South Africa is required. South Africa also has an interesting context that makes it worthy of further investigation. There are significant differences in living standards and SES within the population and particularly across racial groups (Møller, 2013; Statistics South Africa, 2015), which still reflect the legacy of apartheid (Møller & Saris, 2001; Leibbrandt *et al.*, 2012). The wide range of cultural differences within the country also affects how individuals view their own well-being, family relationships, and the broader socioeconomic context of families (Amoateng *et al.*, 2007; Nkosi & Daniels, 2007; Møller, 2013; Botha *et al.*, 2017a). This paper, within this context, investigates more broadly the determinants of happiness in South Africa, but in particular focusing on the roles of (objective and subjective) SES and family functioning, thereby integrating the socioeconomic- and family environments into the study of individual happiness.

1. Data and methods

2.1 Data

The 2012 wave of the South African Social Attitudes Survey (SASAS), conducted by the Human Sciences Research Council (HSRC, 2012), is used in this paper. SASAS is a nationally representative survey conducted annually since 2003 as a repeated cross-section, and monitors changes in the attitudes and values of South Africans over time. The 2012 SASAS formed part of the South African module of the International Social Survey Program (ISSP) module on *Family and Changing Gender Roles*. The choice of the 2012 SASAS was based on the fact that it is the only SASAS wave that makes it possible

to address this paper's topic, as it includes the FACI8 instrument, a happiness question and the relevant SES variables. The survey is designed to provide a representative sample of individuals at least 16 years of age within households that are geographically dispersed across South Africa's provinces. Samples are drawn from the HSRC's master sample, which consists of 1 000 Population Census enumeration areas and is stratified by province and population group. For each interview round, a sub-sample of 500 enumeration areas are then drawn from the master sample. The SASAS round used in this paper had 2,547 original respondents, and the data are weighted to ensure that the sample is representative of the broader South African population.

Given the nature of the questions in the family functioning instrument employed in this paper, single-person households are excluded from the analysis since families generally consist of two or more members (Waite, 2000; Patterson, 2002b; Williams *et al.*, 2015). In addition, this paper excludes particular two-person households where such households comprise a single parent with a child younger than 12 years. Research has reported that children younger than 12 do not engage in meaningful bargaining, and the assumption is made that children younger than 12 generally do not make major decisions within the household (Harbaugh *et al.*, 2001; Lundberg *et al.*, 2009; Dauphin *et al.*, 2011). As such, perceptions of family functioning would not apply beyond the one household member. Removing these households resulted in a total sample of 2,126 observations.

2.2 Variables

2.2.1 Happiness

Happiness is measured by a standard 7-point (taking values 1-7) question that asks: "If you were to consider your life in general, how happy or unhappy would you say you are, on the whole?" Response categories include "completely unhappy", "very unhappy", "fairly unhappy", "neither happy nor unhappy", "fairly happy", "very happy", and "completely happy".

2.2.2 Socioeconomic status (SES)

As noted in section 1, the SES indices were initially developed by Botha *et al.* (2017a) and comprise an individual-, household-, and subjective SES index. The SES indices and their components are listed in Table 1A. Index components, emanating from the 2012 SASAS, were selected based on guidelines from previous literature (Barbarin & Khomo, 1997; Yang & Gustafsson, 2004; Fotso & Kuate-Defo, 2005; Howe *et al.*, 2008; Sheppard *et al.*, 2009; Cundiff *et al.*, 2013; Guillen-Royo *et al.*, 2013; Reising *et al.*, 2013; Botha & Booyesen, 2014; Kabadula *et al.*, 2016) and data availability. The individual SES index includes the respondent's income, education, and employment status. The household SES index includes total household income as well as household characteristics such as asset ownership (i.e. whether the household owns certain assets such as a washing machine and stove) and infrastructure (i.e.

electricity access, toilet facilities, and so on). The subjective SES contains items that measure a respondent's perception of the household's SES relative to other households (for example, the perceived income position of the household compared to that of other households in the neighbourhood).

Because all variables in the SES indices are categorical, the SES indices were constructed using multiple correspondence analysis (MCA) (Greenacre, 2006; Sourial *et al.*, 2010; Kabudula *et al.*, 2016), a generalization of principal components analysis in the presence of categorical data. The MCA for the individual SES index explains 86.8% of the total inertia in the first dimension, whereas the household SES MCA explains 91.8% of the principal inertia in the first dimension. For the subjective SES index, the MCA explains 81.6% of the principal inertia in the first dimension. Table A2 contains the MCA weights assigned to each distinct SES component. All weights have the expected sign; that is, positive (negative) weights for items expected to be positively (negatively) related to SES. In order to examine whether the level of SES matters as well as to conduct multiple-group analysis (discussed in section 2.3) across SES groups, the continuous SES indices are also used to construct SES quartiles¹ (e.g. Altman & Bland, 1994; Onwujekwe, 2005; Messer *et al.*, 2006; Niyonsenga *et al.*, 2013).

2.2.3 Family functioning

The Family Attachment and Changeability Index 8 (FACI8) (McCubbin *et al.*, 1996) is used as measure of family functioning. The SASAS 2012 dataset is the most recent nationally representative South African survey that includes the FACI8 instrument. FACI8 is a self-report measure with two sub-scales, Attachment and Changeability, each with eight items. The Attachment scale measures the attachment of family members to each other, whereas the Changeability scale measures the flexibility of family members' relationships with each other. The sub-scales are comparable to the Circumplex Model of Marital and Family System's cohesion and flexibility dimensions (Olson & Gorall, 2003), with family cohesion (or togetherness) defined as "the emotional bonding that [...] family members have toward one another," and family flexibility as "the amount of change in its leadership, role relationships, and relationship rules" (Olson & Gorall, 2003:516, 519). While the FACI8 sub-scales are theoretically related, they should be analysed as distinct dimensions of family functioning (McCubbin *et al.*, 1996).

¹ Although quintiles are often used in applied work, this paper uses quartiles instead. This choice was driven by preliminary analyses that highlighted potential issues in employing quintiles when examining the SES indices, in particular due to the strong relationship between SES and race in South Africa. As an example, it is often the case that the lowest quintiles were made up of only Black and Coloured respondents, whereas the highest quintiles consist mainly of White and Indian respondents. To allow for more meaningful analyses and a more even sample size distribution across SES categories, quartiles were more appropriate. Even when using quartiles, though, race had to be excluded from the multiple-group models, as discussed in section 2.3. This was because only one White person and no Indian/Asian persons fell into the first two SES quartiles, with the majority in the bottom two quartiles being Black and Coloured individuals. Thus, in some instances the bottom two quartiles represent only certain racial groups. The lack of observations in the White- and Indian/Asian samples in the bottom two quartiles also complicated model convergence.

FACI8 has been used in previous South African research (e.g.: Botha & Booysen, 2014; Masquillier *et al.*, 2014; Wouters *et al.*, 2014) and also validated with the SASAS 2012 data (Botha *et al.*, 2016). **Table 3A contains all FACI8 items.** Respondents are required to state how often a certain circumstance currently happens in the family, with responses consisting of “never” = 1, “sometimes” = 2, “half the time” = 3, “more than half the time” = 4, and “always” = 5. To ensure positive scores on both sub-scales, the Attachment sub-scale is reversed (“never” = 5, “sometimes” = 4, “half the time” = 3, “more than half the time” = 2, “always” = 1). Cronbach alpha coefficients are acceptable at 0.78 (Streiner, 2003) for both FACI8 sub-scales.

2.2.4 Control variables

A number of control variables are included, the choice of which are based on previous research from the happiness and family functioning literature (e.g.: Greeff, 2000; Fuentes & Rojas, 2001; Gerdtham & Johannesson, 2001; Tiffin *et al.*, 2007; Dolan *et al.*, 2008; Guillen-Royo *et al.*, 2013; Mansfield *et al.*, 2013; Sarracino, 2013; Botha & Booysen, 2014; Feeny *et al.*, 2014; Hsu *et al.*, 2016). The controls are age and age squared, gender, race, marital status, health status, household size, religion status, geographical area, female-headed household status, and household structure. Gender consists of “male” (comparison group) and “female” categories, whereas race denotes a person’s racial group and consists of “Black” (comparison group), “Coloured” (the official South African classification for people of mixed-race), “Indian or Asian”, and “White”. Marital status includes “never married” (comparison group), “separated/divorced”, “widowed”, and “married”. Health status denotes an individual’s subjective health status and includes “poor/fair”, “good”, and “very good/excellent” perceived health.

Household size reflects the number of persons in the household, whereas religion status equals one if a respondent is religious and zero if not (comparison group). The geographical area denotes whether the household is located in a rural or urban (comparison group) area. A variable is also included to indicate whether the respondent lives in a female-headed household (comparison group) or male-headed household. Household structure includes “skip-generation and multi-generation households” (comparison group), “single-parent households with at least one child”, “a couple without children”, “a couple with at least one child”, and “other households” (including family forms such as mixed families with non-relatives living in the household, and siblings only).

2.3 Data analysis

The data were analysed using Stata version 14.2 and missing values were removed from the analysis via listwise deletion. The SEM model is depicted in Figure 1. Given the many control variables, the “controls” box is shown in Figure 1 to reflect all control variables, as including boxes and paths for each

variable would render the figure very cluttered.² Consistent with theory (McCubbin *et al.*, 1996), the FACI8 sub-scales appear with correlated error terms and reflect the measurement model. For the structural component of the model, the relevant SES index is specified as covariate for happiness, Attachment, and Changeability. In turn, Attachment and Changeability are specified as determinants of happiness. The same controls are included for the Attachment and Changeability equations. Subjective health status is added as control in the happiness equation only, in light of previous research (Gerdtham & Johannesson, 2001; Botha & Booyesen, 2014) that has found health status to be a predictor of happiness.

The SEM models are estimated via maximum likelihood (ML), which assumes multivariate normality. While the happiness variable and FACI8 items can be viewed as ordinal variables and thus not normally distributed, this paper assumes cardinality of the outcomes and uses ML. This assumption is supported by previous research (Johnson & Creech, 1983; Babakus *et al.*, 1987; Dolan, 1994; Hutchinson & Olmos, 1998; Beauducel & Herzberg, 2006; Rhemtulla *et al.*, 2012) arguing that the treatment of ordinal variables with five or more categories as continuous and using ML is unlikely to have a serious impact on the results. To guard against violation of any normality assumptions, the Satorra-Bentler (S-B) scaled χ^2 statistic (Satorra & Bentler, 1994) is also used as diagnostic and models are estimated with S-B standard errors that adjust for non-normality. Goodness-of-fit indices used to assess model fit are the Root Mean Squared Error of Approximation (RMSEA), Comparative Fit Index (CFI), and Standardized Root Mean Square Residual (SRMR). For an acceptable model fit, $RMSEA \leq 0.06$, $SRMR \leq 0.08$ and $CFI \geq 0.90$ (Hu & Bentler, 1999; Schreiber *et al.*, 2006; Aarons *et al.*, 2007).

This paper also uses multiple-group SEM (MGSEM) to examine whether the role of family functioning in explaining happiness differs across SES quartiles.³ In other words, is the relationship between Attachment and happiness as well as between Changeability and happiness similar across SES groups? Because the FACI8 sub-scales form part of the full SEM models, multiple-group confirmatory factor analysis (MGCFA) was first used to determine measurement invariance among the two latent sub-scales. These analyses were originally conducted and reported in Botha *et al.* (2017b) and are thus not discussed fully in this paper. In summary, however, Tables 4A and 5A present the results, which demonstrate measurement invariance of the latent family functioning constructs for all three SES indices.

² The SEM results are also reported in Table format since the graphical results are too cluttered.

³ The MGSEM analyses exclude race as covariate based on the skewed distribution of SES across South Africa's racial groups. For example, in some cases only one White person and no Indian/Asian persons fell into the first two SES quartiles, with the majority in the bottom two quartiles being Black, followed by Coloured individuals. This implies that in some instances the bottom two quartiles represent only certain racial groups. The lack of observations in the White- and Indian/Asian samples in the bottom two quartiles complicated model convergence.

The MGSEM analysis follows the establishment of measurement invariance.⁴ For each SES measure, a multiple-group model without any constraints on the unstandardized structural parameters is first estimated. A second model is then estimated where in the structural component the Attachment coefficients are set equal across SES groups and the Changeability coefficients are set equal across SES groups. A χ^2 difference test determines whether the fit of the constrained model, which is nested within the unconstrained model, is significantly worse than the unconstrained model fit. If the χ^2 difference statistic is not statistically significant, the constrained model does not do significantly worse than the unconstrained version and thus would support the constraints imposed on the structural coefficients.

2. Results and discussion

3.1 Descriptive analysis

Summary statistics are included in Table 1. Some sample characteristics include that the average age of respondents is about 37 years. Just more than half of the sample is female, roughly 72% are Black and 31% are married. The mean household size is five persons, whereas almost a third of respondents reside in rural areas. Finally, a third of people live in female-headed households. The average happiness score of 4.99 is relatively high on a 7-point scale.

Table 2 reports Spearman correlation coefficients, which show that all SES indices are positively correlated with happiness. Happiness is most strongly related to the subjective SES index ($\rho_s = 0.479$, $p < 0.001$), followed by the household SES index ($\rho_s = 0.389$, $p < 0.001$). Furthermore, the relatively high correlation between household SES and subjective SES ($\rho_s = 0.669$, $p < 0.001$) suggests that greater objective (household) SES as expected is related to higher subjective perceptions of household SES.

In Table 3, the results show that, for all three SES indices, average happiness is higher among the higher SES quartiles (except for individual SES, where mean happiness is slightly higher in quartile 1 than in quartile 2), and these differences are statistically significant. For instance, for the individual SES index, the mean happiness score is 4.84 among persons in the first quartile compared to 5.55 for those in the fourth quartile. For subjective SES, persons in the first quartile report a mean happiness score of 3.89 relative to a score of 5.84 among persons in the fourth quartile. For household- and subjective SES, ad-hoc tests showed that the happiness differences between all quartiles are statistically significant (all $p < 0.001$). For individual SES, mean happiness is significantly higher in quartile 3 relative to quartile 1 ($p < 0.01$), whereas happiness among those in quartile four is significantly higher than all other quartiles (all $p < 0.001$).

⁴ Although the S-B scaled χ^2 difference test (Satorra & Bentler, 2001) is generally preferable, the software used in the analysis does not currently allow for estimation of the S-B χ^2 in the examination of group constraints. Thus, the MGSEM analyses employ the default maximum likelihood χ^2 difference test statistic. Although this statistic does not correct for non-normality, its maximum likelihood estimates are nevertheless relatively robust even in the presence of non-normality (Acock, 2013).

Table 4 presents cross-tabulations between happiness and SES. The results clearly indicate that reported happiness is lower among the lower SES quartiles. For instance, within the first individual SES quartile, around 15% of persons reporting being either completely unhappy or very unhappy, compared to only 3.2% among those in the fourth individual SES quartile. Furthermore, while roughly 25% of household SES quartile four respondents are either very happy or completely happy, only about 7% of those in the first household SES quartile are at least very happy. Overall, therefore, greater proportions of individuals report higher (lower) levels of happiness in the higher (lower) SES quartiles.

2.2 SEM results

3.2.1 Happiness and SES

Tables 5-10 present the SEM models. All models demonstrate acceptable goodness-of-fit statistics (RMSEA: 0.027-0.028; CFI: 0.911-0.914; SRMR: 0.026-0.027). There is a significant and positive relationship between happiness and the individual SES index ($b = 0.179, p < 0.001; \beta = 0.120$) (Table 5): People are on average happier the higher their individual SES. Considering the individual SES quartiles (Table 6), those in quartiles three ($b = 0.177, p < 0.05; \beta = 0.049$) and four ($b = 0.448, p < 0.001; \beta = 0.123$) are significantly happier compared to individuals in the first quartile, while people in quartiles two ($\chi^2 = 21.3, p < 0.001$) and three ($\chi^2 = 10.7, p < 0.01$) are also less happy compared to those in quartile four.

Table 7 suggests a strong positive association between reported happiness and household SES ($b = 0.386, p < 0.001; \beta = 0.258$), which implies that people are happier when they live in high-SES households. Table 8's results indicate that all levels of household SES are important in determining happiness, as individuals in the lowest SES quartile are significantly less happy compared to those in the top three quartiles (all $p < 0.001$). In addition, persons in quartile four are significantly happier relative to those in the second ($\chi^2 = 23.4, p < 0.001$) and third ($\chi^2 = 15.7, p < 0.001$) quartiles.

As with the household SES findings of Table 7, there is a strong positive relationship between happiness and a person's perception of their household SES ($b = 0.551, p < 0.001; \beta = 0.356$) (see Table 9). From Table 10, people in the first subjective SES quartile are less happy compared to those in quartiles two to four (all $p < 0.001$). In addition, individuals in the fourth quartile are happier relative to those in the second ($\chi^2 = 32.5, p < 0.001$) and third ($\chi^2 = 16.0, p < 0.001$) quartiles, whereas those in the third quartile are happier compared to those in the second quartile ($\chi^2 = 7.2, p < 0.01$).

In summary, there is a significant positive association between reported happiness and SES. This relationship is most pronounced for household- and subjective SES, suggesting that a person's broader socioeconomic context, objective and perceived, is a stronger predictor of happiness than individual SES only. Moreover, given the composition of the household SES index, factors such as household assets and household infrastructure quality are important predictors of individual happiness.

3.2.2 Happiness, SES, and family functioning

Better family Changeability is positively related to happiness regardless of model specification (all $p < 0.001$), whereas the association between happiness and family Attachment is not statistically significant (Tables 5-10). There is a significant difference between the Attachment and Changeability coefficients in explaining happiness across all specifications (all $p < 0.05$), suggesting that Changeability has a different relationship with happiness than Attachment. There is no difference between how individual SES relates to Attachment and Changeability ($\chi^2 = 1.8, p = 0.185$) (Table 5). The difference in the household SES coefficients across the Attachment and Changeability equations is statistically significant ($\chi^2 = 7.7, p < 0.01$) (Table 7). There is also a significant difference in the subjective SES coefficients across the Attachment and Changeability equations ($\chi^2 = 19.0, p < 0.001$) (Table 9), implying that subjective SES has a different relationship with Attachment than with Changeability. Family functioning, and in particular family Changeability, is related to greater happiness scores. Whereas individual SES does not have much of an association with happiness, both household- and subjective SES exhibit a positive relationship with happiness.

These results suggest that SES and family functioning both have the potential to increase a person's happiness. In particular, better household- and subjective SES are related to greater happiness independent of family functioning, whereas better family functioning (Changeability) is associated with greater happiness independent of SES. As household- and subjective SES are positively related to family Changeability, part of the happiness advantage of higher household- and subjective SES is represented by the positive relationship with family Changeability. Given the association between family functioning and SES, the use of MGSEM can show if the happiness-family functioning association depends on the particular SES gradient.

3.3 Multiple-group analyses

Table 11 reports the MGSEM results with the purpose of investigating whether the relationship between happiness and family functioning differs across SES quartiles. According to the chi-square difference test results, for the individual- ($\chi^2_D = 5.3, p = 0.510$) and household ($\chi^2_D = 6.4, p = 0.376$) SES indices, the constrained models do not fare significantly worse relative to a model without constraints. This implies that the association between happiness and family functioning is similar across individual- and household SES quartiles.

The findings for subjective SES are slightly different. The model with equality constraints on the structural family functioning paths does significantly worse than a model without such constraints ($\chi^2_D = 14.8, p < 0.05$). Examination of the score test results indicate that a constraint of the Changeability \rightarrow happiness path coefficients is valid ($\chi^2 = 3.0, p = 0.390$), suggesting that the association between Changeability and happiness does not differ according to subjective SES quartile. For Attachment,

however, the score test indicates that constraints on the Attachment → happiness path coefficients are not valid ($\chi^2 = 11.6, p < 0.01$). Thus, there is a significant difference across subjective SES groups in how Attachment is associated with happiness. A subsequent model that constrains the Changeability → happiness path coefficients across SES quartiles but not the Attachment → happiness path coefficients does not do significantly worse than a model without any constraints ($\chi^2_D = 3.0, p = 0.388$). In terms of the individual Attachment coefficients for each SES quartile, Attachment is significantly positively associated with reported happiness in the top subjective SES quartile only ($b = 0.157, se = 0.060, p < 0.01$).

The relationship between happiness and family functioning is not significantly different across individual- and household SES quartiles. While the relationship between happiness and family Changeability is similar across subjective SES groups, the association of happiness with family Attachment does differ across subjective SES groups. In particular, there is a significant positive relationship between happiness and Attachment within the highest subjective SES quartile only. This implies that family Attachment matters only for those who perceive themselves as being really well off, whereas this is not the case for those who consider their household SES to be lower.

3. Discussion and conclusion

The primary objective of this paper was to examine the role of SES – as measured by both objective and subjective individual-level and household-level indices – in explaining reported happiness using South African survey data. The findings show a strong positive relationship between household SES and happiness, as well as between subjective SES and happiness. Greater individual-level SES is also related to greater happiness, but the association with happiness does not seem as strong as with household- and subjective SES. In broad terms, the findings are supported by previous research (Guillen-Royo *et al.*, 2013; Feeny *et al.*, 2014) that found that greater happiness is associated with higher household wealth or asset index scores.

Because an individual's family environment is intricately related to SES and individual happiness, the paper also considered family functioning as an important factor in the interplay between happiness and SES. Better household- and subjective SES are positively related to family Changeability, whereas better levels of family Changeability are also associated with better happiness scores. There are no significant associations between SES and family Attachment or between happiness and family Attachment. Thus, persons in higher-SES households generally report higher levels of flexibility in their family relationships, and more family flexibility is related to greater happiness. However, the emotional bonds and attachment of family members are independent of SES, and happiness is not related to family Attachment either.

The multiple-group analysis revealed that the role of family functioning in explaining happiness does not change across individual- and household SES groups. Individual- and household SES gradients

are thus not important predictors of how family functioning relates to happiness. Across subjective SES groups, the relationship between happiness and family Changeability is statistically similar, but the association of family Attachment with happiness is significantly different across subjective SES groups. In particular, among persons who feel their household's SES is much better higher compared to other households' SES, happiness is positively associated with family Attachment. This latter finding could imply that emotional bonding within families only becomes more important as determinant of individual happiness in high-SES families, for whom the more basic needs have been met.

In terms of the additional control variables, there is evidence of a U-shaped relationship between happiness and age, which is consistent with previous research (Alesina & Giuliano, 2013; Frijters & Beatton, 2012). Women are happier than men (Alesina & Giuliano, 2007, 2013), and married individuals are happier compared to the never married (Sarracino, 2013). In accordance with existing literature (Gerdtham & Johannesson, 2001; Botha & Booysen, 2014), improved perceived health status is associated with greater levels of happiness. Happiness is significantly lower among Black persons relative to all the other race groups, which is consistent with previous research on South African data (Botha & Booysen, 2014). There do not seem to be any meaningful relationships of happiness with factors such as household structure and religion.

A limitation of this paper is that no comments can be made about causality since the data are cross-sectional. The availability of panel data would make it possible to control for unobserved heterogeneity and move towards making assertions about causal relationships between happiness and SES. Another limitation stems from the fact that the question measuring happiness is only asked of the respondent and not all other household members, so as to allow happiness to be measured at an individual level, particularly where the focus is on the association of happiness and household-level SES. It is therefore also not possible to consider potential intra-family differences in reported happiness.

In relation to the contribution of this paper's results to the existing literature, the findings have shown that it is important to consider a broad range of SES indicators when studying the role of SES in explaining individual happiness. Notably, the broader family context of an individual is also important, and here better SES is also generally related to better levels of family Changeability. For South African families and the individuals within those families, attaining higher SES is important, as it is positively associated with both happiness and family Changeability, with the latter further contributing to better levels of happiness. Furthermore, the findings suggest that although objective SES is a significant predictor of happiness, a person's subjective perception of SES is also a central determinant of individual happiness. From a policy perspective, in order to improve individual happiness, programmes aimed at improving individual SES but especially household SES factors across all SES gradients – such as the quality of infrastructure and household assets – may be particularly useful. Moreover, family strengthening programmes aimed at fostering better family Changeability patterns are likely to further

enhance individual happiness. Finally, there is evidence to suggest that programmes targeted at building greater Attachment within families should be aimed at high-SES households.

Appendix

Table 1A: Components of SES indices

Variable	Description
Individual SES	
Individual income	Total personal monthly income before tax and other deductions. Consists of four categories: R0–R2 000, R2 001–R5 000, R5 001–R10 000, and R10 001 and above
Education	Highest completed level of education of the respondent Four categories: None or primary education, some secondary education, matric (Grade 12) or equivalent education, and tertiary education
Employment status	Denotes whether a person is employed (equal to 1) or not (equal to 0)
Household SES	
Household income	Total monthly household income of all people in the household before tax and other deductions, from all sources of income. Consists of four categories: R0–R2 000, R2 001–R5 000, R5 001–R10 000, and R10 001 and above
Asset ownership	Whether the household owns any of the following in working order (equals 1 if yes, zero otherwise, for each item): Geyser with hot running water, fridge/freezer, microwave oven, vacuum cleaner/floor polisher, washing machine, desktop or laptop, DVD player or Blu Ray player, electric stove, TV, tumble dryer, landline telephone, radio, kitchen sink, home security service, deep freezer, pay-TV subscription, dishwasher, at least one car, home theatre system, swimming pool, air conditioner, at least one cellphone
Electricity access	Household has access to electricity, or no access to any electricity
Toilet facility	Household has a flush toilet, or a pit latrine, or other toilet facility (such as chemical or bucket toilet), or household has no toilet facility
Dwelling type	Whether a respondent lives in a formal dwelling type such as house or brick structure, flat or apartment, townhouse, retirement village unit, or an informal dwelling such as a hut, flat or room in a backyard, informal shack, caravan, or tent
Source of drinking water	Whether household has access to piped water, public water via a communal tap, or water from another source (includes getting water from a neighbour, borehole, rainwater tank, river or stream, dam or pool, stagnant pond, well, spring)
Subjective SES	
Perceived family wealth	Captures a respondent’s subjective assessment of family wealth, measured by the question: “Would you say that you and your family are ‘very poor’, ‘poor’, ‘just getting along’, ‘reasonably comfortable’, ‘very comfortable’, or ‘wealthy’?”
Perceived relative income	Reflects a respondent’s judgment about the income position of the household compared to the income of households in the same neighbourhood. Much above average, above average, average, below average, much below average
Actual income vs. required income	A respondent’s assessment of the actual income of the household relative to what the respondent considers to be the minimum required income to sustain the household. Categories include that the actual income is “more than required”, “same as required”, or “less than required”

Table 2A: Summary statistics and MCA weights of SES index components

Variable	Mean (S.D.)	MCA Weight	Variable	Mean (S.D.)	MCA Weight
Individual SES			<i>Home security service</i>		
<i>Individual income</i>			Yes	0.111 (0.314)	2.572
R0–R2000	0.751 (0.432)	-0.647	No		-0.361
R2001–R5000	0.124 (0.330)	1.015	<i>Deep freezer</i>		
R5001–R10000	0.069 (0.254)	1.924	Yes	0.319 (0.466)	1.584
R10001+	0.055 (0.229)	2.714	No		-0.737
<i>Education</i>			<i>Pay-TV subscription</i>		
None/Primary	0.121 (0.326)	-0.803	Yes	0.367 (0.482)	1.570
Some secondary	0.406 (0.491)	-0.560	No		-0.866
Matric or equivalent	0.322 (0.467)	0.568	<i>Dishwasher</i>		
Tertiary	0.096 (0.294)	2.279	Yes	0.069 (0.253)	2.642
<i>Employment status</i>			No		-0.173
Employed	0.347 (0.476)	1.322	<i>At least one car</i>		
Unemployed		-0.705	Yes	0.395 (0.489)	1.634
Household SES			No		-0.953
<i>Household income</i>			<i>Home theatre system</i>		
R0–R2000	0.372 (0.484)	-1.145	Yes	0.248 (0.432)	1.596
R2001–R5000	0.294 (0.456)	-0.450	No		-0.541
R5001–R10000	0.153 (0.360)	0.926	<i>Swimming pool</i>		
R10000+	0.180 (0.385)	2.160	Yes	0.069 (0.254)	3.007
<i>Asset ownership</i>			No		-0.165
<i>Geysers with hot running water</i>			<i>Air conditioner</i>		
Yes	0.364 (0.481)	1.717	Yes	0.075 (0.263)	2.781
No		-1.016	No		-0.256
<i>Fridge/freezer</i>			<i>At least one cellphone</i>		
Yes	0.831 (0.375)	0.483	Yes	0.964 (0.186)	0.107
No		-2.061	No		-1.527
<i>Microwave oven</i>			<i>Electricity access</i>		
Yes	0.622 (0.485)	0.997	Yes	0.921 (0.271)	0.251
No		-1.506	No		-2.550
<i>Vacuum cleaner/floor polisher</i>			<i>Toilet facility</i>		
Yes	0.215 (0.411)	2.179	None	0.026 (0.160)	-2.253
No		-0.563	Other	0.034 (0.182)	-1.777
<i>Washing machine</i>			Pit latrine	0.291 (0.455)	-1.408
Yes	0.452 (0.498)	1.397	Flush	0.648 (0.478)	0.803
No		-1.103	<i>Dwelling type</i>		
<i>Desktop/laptop</i>			Formal	0.814 (0.389)	0.397
Yes	0.339 (0.473)	1.790	Informal		-1.679
No		-0.743	<i>Source of drinking water</i>		
<i>DVD player/Blu Ray player</i>			Piped	0.748 (0.434)	0.555
Yes	0.680 (0.467)	0.715	Public	0.123 (0.328)	-1.775
No		-1.307	Other	0.129 (0.336)	-1.554
<i>Electric stove</i>			Subjective SES		
Yes	0.834 (0.372)	0.424	<i>Perceived family wealth</i>		
No		-1.934	Very poor/poor	0.199 (0.399)	-1.717
<i>TV</i>			Just getting along	0.337 (0.473)	-0.241
Yes	0.851 (0.356)	0.378	Reasonably comfortable	0.288 (0.453)	0.843
No		-1.813	Very comfortable/wealthy	0.177 (0.382)	1.334
<i>Tumble dryer</i>			<i>Perceived relative income</i>		
Yes	0.153 (0.360)	2.217	Much below/below average income	0.431 (0.495)	-1.187
No		-0.296	Average income	0.452 (0.498)	0.725
<i>Landline telephone</i>			Above/much above average income	0.118 (0.322)	1.623
Yes	0.191 (0.393)	1.768	<i>Actual income vs. required income</i>		
No		-0.512	Less than required	0.462 (0.499)	-0.923
<i>Radio</i>			Same as required	0.320 (0.466)	0.572
Yes	0.596 (0.491)	0.500	More than required	0.219 (0.413)	1.033
No		-0.805			

<i>Kitchen sink</i>		
Yes	0.486 (0.500)	1.262
No		-1.219

Table 3A: Family Attachment and Changeability (FACI8) item averages

Item	In my family...	Mean (s.d)	% stating...					Total
			Never	Sometimes	Half the time	More than half the time	Always	
Attachment								
2	It is easier to discuss problems with people outside the family than with other family members.	3.74 (1.40)	40.33	27.49	11.88	6.63	13.68	100.0
5	In my family everyone goes his/her own way.	4.21 (1.15)	56.40	24.29	9.21	4.18	5.92	100.0
7	We have difficulty thinking of things to do as family.	3.84 (1.19)	35.76	34.32	14.82	8.26	6.84	100.0
9	Family members feel closer to people outside the family than to other family members.	4.04 (1.25)	50.09	25.91	10.12	5.66	8.23	100.0
12	It is difficult to get a rule changed in my family.	3.41 (1.46)	28.01	31.87	12.40	8.39	19.34	100.0
13	Family members avoid each other at home.	4.42 (1.05)	69.40	15.29	7.16	4.38	3.78	100.0
15	Family members are afraid to say what is on their minds.	4.06 (1.19)	48.43	27.30	11.81	6.31	6.14	100.0
16	Family members pair up rather than do things as a total family.	3.97 (1.30)	50.30	21.69	11.59	7.97	8.46	100.0
Changeability								
1	In my family it is easy for everyone to express his/her opinion	3.94 (1.37)	4.21	22.11	5.47	11.80	56.41	100.0
3	Each family member has input in major family decisions.	3.55 (1.36)	5.51	25.71	14.46	17.12	37.21	100.0
4	Family members discuss problems and feel good about the solutions.	3.84 (1.24)	3.22	17.69	14.43	21.48	43.18	100.0
6	Family members consult other family members on their decisions.	3.03 (1.42)	14.12	32.48	14.11	14.67	24.61	100.0
8	Discipline is fair in our family.	4.10 (1.24)	4.72	10.79	10.89	16.62	56.97	100.0
10	My family tries new ways of dealing with problems.	3.35 (1.36)	7.74	27.74	16.02	18.73	29.77	100.0
11	In my family, everyone shares responsibilities.	3.92 (1.29)	4.18	17.03	10.66	18.47	49.66	100.0
14	When problems arise, we compromise.	3.72 (1.35)	6.45	19.08	13.30	18.84	42.33	100.0

Source: HSRC (2012) and own calculations. Data are weighted. For mean scores, Attachment scores are reversed, with a higher (lower) score indicating a lower (higher) frequency of an item occurring.

Table 4A: Goodness-of-fit results for SES group CFA models

	S-B χ^2	df	p	CFI	SRMR	RMSEA
Individual SES						
Quartile 1	272.4	103	0.000	0.914	0.054	0.048
Quartile 2	174.1	103	0.000	0.916	0.058	0.046
Quartile 3	193.7	103	0.000	0.938	0.056	0.043
Quartile 4	139.8	103	0.009	0.976	0.048	0.028
Household SES						
Quartile 1	174.3	103	0.000	0.944	0.055	0.038
Quartile 2	198.4	103	0.000	0.916	0.058	0.045
Quartile 3	224.0	103	0.000	0.902	0.059	0.050
Quartile 4	198.3	103	0.000	0.955	0.056	0.040
Subjective SES						
Quartile 1	251.7	103	0.000	0.888	0.065	0.055
Quartile 2	184.4	103	0.000	0.930	0.051	0.041
Quartile 3	215.8	103	0.000	0.929	0.049	0.045
Quartile 4	185.0	103	0.000	0.952	0.058	0.039

Note: Table originally reported and discussed in Botha et al. (2017b).

Table 5A: Measurement invariance results

Hypothesis	χ^2	df	p	Mc	CFI	SRMR	RMSEA	χ^2 difference			ΔMc	ΔCFI
								χ^2	df	p		
Individual SES												
H_{form}	894.9	412	0.000	0.866	0.927	0.054	0.049				NA	NA
H_{Λ}	946.2	454	0.000	0.884	0.926	0.057	0.047	51.3	42	0.155	0.018	0.001
$H_{\Lambda,v}$	1008.6	496	0.000	0.879	0.923	0.057	0.046	62.4	42	0.022	0.005	0.003
Household SES												
H_{form}	903.5	412	0.000	0.884	0.925	0.057	0.049				NA	NA
H_{Λ}	973.0	454	0.000	0.878	0.921	0.060	0.048	69.6	42	0.005	0.006	0.004
$H_{\Lambda,v}$	1097.8	496	0.000	0.860	0.909	0.060	0.049	124.8	42	0.000	0.018	0.012
Subjective SES												
H_{form}	962.0	412	0.000	0.871	0.918	0.056	0.052				NA	NA
H_{Λ}	1012.4	454	0.000	0.870	0.916	0.058	0.050	50.4	42	0.174	0.001	0.002
$H_{\Lambda,v}$	1107.4	496	0.000	0.858	0.908	0.058	0.050	95.0	42	0.000	0.012	0.008

Note: Table originally reported and discussed in Botha et al. (2017b). H_{form} = configural invariance, H_{Λ} = metric invariance, $H_{\Lambda,v}$ = scalar invariance. For ΔMc and ΔCFI , the null hypothesis of invariance is not rejected for $\Delta Mc \leq 0.02$ and $\Delta CFI \leq 0.01$.

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Table 1: Summary statistics

Variable	Obs	Mean	S.D	Min	Max
Happiness	2111	4.992	1.582	1	7
Attachment	2126	-0.004	0.615	-2.363	0.817
Changeability	2126	-0.013	0.736	-2.360	1.135
Individual SES index	2110	0.008	1.003	-1.060	3.359
Household SES index	2126	0.113	0.982	-2.040	2.519
Subjective SES index	2122	0.056	0.988	-2.141	1.596
Age	2125	37.142	16.379	16	95
Gender (female=1)	2126	0.531	0.499	0	1
Race: Black	2126	0.724	0.447	0	1
Race: Coloured	2126	0.113	0.316	0	1
Race: Indian/Asian	2126	0.035	0.185	0	1
Race: White	2126	0.128	0.334	0	1
Household size	2126	5.050	2.633	2	16
Never married	2547	0.524	0.500	0	1
Separated/Divorced	2547	0.036	0.185	0	1
Widowed	2547	0.049	0.216	0	1
Married	2547	0.314	0.464	0	1
Health status: Poor/fair	2114	0.186	0.390	0	1
Health status: Good	2114	0.271	0.445	0	1
Health status: Very good/excellent	2114	0.543	0.498	0	1
Religious	2049	0.848	0.359	0	1
Rural	2126	0.322	0.467	0	1
Skip-generation/multi-generation household	2547	0.379	0.485	0	1
Other household structure	2547	0.246	0.431	0	1
Single-parent household with at least one child	2547	0.047	0.212	0	1
Couple with no children	2547	0.073	0.260	0	1
Couple with at least one child	2547	0.172	0.378	0	1
Female-headed household	2126	0.337	0.473	0	1

Note: Data are weighted.

Table 2: Spearman correlation coefficients

	Happiness	Individual SES index	Household SES index	Subjective SES index
Happiness	1.000			
Individual SES index	0.188***	1.000		
Household SES index	0.389***	0.483***	1.000	
Subjective SES index	0.479***	0.412***	0.669***	1.000

Note: $p < 0.001$ ***.

Table 3: Average happiness across SES quartiles

	Quartile 1	Quartile 2	Quartile 3	Quartile 4
Individual SES	4.84 (764)	4.61 (342)	4.99 (501)	5.55 (492)***
Household SES	4.22 (518)	4.79 (484)	5.12 (497)	5.84 (612)***
Subjective SES	3.89 (510)	4.92 (508)	5.36 (553)	5.84 (540)***

Note: Data are weighted. Sample size shown in brackets. $p < 0.001$ *** and corresponds to the hypothesis that average happiness is equal across quartiles.

Table 4: Happiness and SES quartiles

	Individual SES Quartile				Total
	1	2	3	4	
Completely unhappy	4.6	2.7	2.7	0.8	2.9 (n = 62)
Very unhappy	10.5	11.5	7.3	2.4	8.1 (n = 171)
Fairly unhappy	8.5	15.8	8.2	3.2	8.7 (n = 182)
Neither happy nor unhappy	8.3	12.3	8.4	3.7	8.1 (n = 169)
Fairly happy	21.6	18.3	27.9	33.1	24.9 (n = 523)
Very happy	34.4	28.5	34.3	37.8	34.0 (n = 713)
Completely happy	12.2	10.9	11.1	19.0	13.3 (n = 279)
Total	100.0	100.0	100.0	100.0	100.0 (n = 2099)
Pearson $\chi^2 = 134.2, p < 0.001$					
	Household SES Quartile				Total
	1	2	3	4	
Completely unhappy	7.2	3.2	1.1	0.2	2.9 (n = 62)
Very unhappy	14.8	8.7	8.0	0.9	8.1 (n = 171)
Fairly unhappy	15.2	13.4	5.5	0.6	8.7 (n = 183)
Neither happy nor unhappy	13.4	8.2	6.7	3.9	8.1 (n = 170)
Fairly happy	17.4	23.2	31.8	27.3	24.9 (n = 526)
Very happy	24.8	34.0	35.2	42.1	34.0 (n = 717)
Completely happy	7.2	9.3	11.7	25.1	13.4 (n = 282)
Total	100.0	100.0	100.0	100.0	100.0 (n = 2111)
Pearson $\chi^2 = 372.7, p < 0.001$					
	Subjective SES Quartile				Total
	1	2	3	4	
Completely unhappy	8.3	2.9	0.4	0.0	2.9 (n = 62)
Very unhappy	20.3	5.4	5.2	1.2	8.1 (n = 171)
Fairly unhappy	16.7	11.2	5.2	1.3	8.7 (n = 183)
Neither happy nor unhappy	11.4	10.4	6.0	4.4	8.1 (n = 170)
Fairly happy	20.2	28.1	28.9	22.4	24.9 (n = 526)
Very happy	18.7	31.3	39.7	46.7	34.0 (n = 717)
Completely happy	4.4	10.8	14.7	24.0	13.4 (n = 282)
Total	100.0	100.0	100.0	100.0	100.0 (n = 2111)
Pearson $\chi^2 = 516.9, p < 0.001$					

Table 5: SEM results – individual SES

	Happiness	Attachment	Changeability
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	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Structural model						
Attachment	-0.048 (0.051)	-0.021				
Changeability	0.224 (0.047)***	0.122				
Individual SES index	0.179 (0.030)***	0.120	0.016 (0.020)	0.024	0.051 (0.023)*	0.062
Log(age)	-8.559 (1.433)***	-2.398	-1.201 (0.750)	-0.760	1.291 (0.972)	0.663
Log(age squared)	1.193 (0.198)***	2.411	0.175 (0.104)	0.799	-0.158 (0.135)	-0.584
Female	0.256 (0.067)***	0.081	0.024 (0.039)	0.017	0.000 (0.047)	0.000
Coloured	0.714 (0.077)***	0.176	0.120 (0.043)**	0.066	0.041 (0.056)	0.018
Asian/Indian	0.629 (0.084)***	0.121	0.025 (0.073)	0.011	0.265 (0.074)***	0.094
White	0.553 (0.092)***	0.120	0.109 (0.061)	0.053	0.251 (0.069)***	0.100
Separated/divorced	0.191 (0.156)	0.029	0.083 (0.078)	0.028	0.031 (0.096)	0.008
Widowed	-0.091 (0.153)	-0.017	0.053 (0.081)	0.022	0.096 (0.097)	0.032
Married	0.306 (0.103)**	0.099	0.080 (0.053)	0.059	0.141 (0.065)*	0.083
Good health	0.559 (0.097)***	0.162				
Very good/excellent health	1.037 (0.092)***	0.339				
Household size	-0.015 (0.017)	-0.021	-0.012 (0.008)	-0.041	-0.028 (0.011)**	-0.073
Religious	0.102 (0.104)	0.021	0.178 (0.055)***	0.085	0.093 (0.064)	0.036
Female-headed household	-0.097 (0.080)	-0.030	-0.028 (0.042)	-0.020	0.093 (0.053)	0.053
Rural	-0.010 (0.067)	-0.003	0.028 (0.037)	0.019	0.027 (0.045)	0.015
Other household structure	-0.056 (0.090)	-0.015	-0.087 (0.048)	-0.051	-0.053 (0.062)	-0.025
Single parent with child	-0.143 (0.142)	-0.025	-0.049 (0.074)	-0.025	-0.066 (0.091)	-0.021
Couple with no children	-0.033 (0.120)	-0.007	-0.014 (0.069)	-0.007	0.065 (0.086)	0.026
Couple with at least one child	0.010 (0.099)	0.003	0.044 (0.056)	0.028	0.098 (0.066)	0.050
Measurement model						
Item 1					1.000 (fixed)	0.630
Item 3					1.072 (0.044)***	0.664
Item 4					0.988 (0.043)***	0.663
Item 6					0.675 (0.044)***	0.386
Item 8					0.784 (0.040)***	0.542
Item 10					0.610 (0.041)***	0.371
Item 11					0.895 (0.049)***	0.586
Item 14					0.755 (0.043)***	0.473
Item 2			1.000 (fixed)	0.484		
Item 5			0.908 (0.060)***	0.532		
Item 7			0.951 (0.059)***	0.546		
Item 9			1.159 (0.064)***	0.641		
Item 12			0.805 (0.059)***	0.377		
Item 13			0.958 (0.057)***	0.619		
Item 15			1.188 (0.063)***	0.687		
Item 16			1.169 (0.065)***	0.612		
Error variances		<u>Unstandardized</u>			<u>Standardized</u>	
Satisfaction with family life		1.793 (0.064)			0.767 (0.017)	
Attachment		0.438 (0.043)			0.955 (0.010)	
Changeability		0.633 (0.044)			0.910 (0.013)	
Error covariance						
Attachment and Changeability		0.123 (0.016)***			0.233 (0.028)***	
Goodness of fit						
S-B χ^2			1002.6, $p < 0.001$			
RMSEA			0.028			
CFI			0.913			
SRMR			0.027			

Note: Satorra-Bentler standard errors shown in parentheses. $p < 0.001$ ***, $p < 0.01$ ** , $p < 0.05$ *. $N = 1920$.

Table 6: SEM results – individual SES quartiles

	Happiness		Attachment		Changeability	
	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized

Structural model							
Attachment	-0.043 (0.051)	-0.019					
Changeability	0.226 (0.047)***	0.123					
Individual SES index: Quartile 2	0.002 (0.100)	0.000	-0.019 (0.052)	-0.010	0.039 (0.064)	0.017	
Individual SES index: Quartile 3	0.177 (0.086)*	0.049	-0.020 (0.045)	-0.012	0.000 (0.058)	0.000	
Individual SES index: Quartile 4	0.448 (0.088)***	0.123	-0.013 (0.055)	-0.008	0.114 (0.062)	0.058	
Log(age)	-8.386 (1.423)***	-2.349	-0.918 (0.755)	-0.581	1.491 (0.670)	0.766	
Log(age squared)	1.167 (0.197)***	2.357	0.135 (0.105)	0.616	-0.185 (0.134)	-0.684	
Female	0.254 (0.067)***	0.080	0.014 (0.039)	0.010	-0.006 (0.047)	-0.003	
Coloured	0.709 (0.077)***	0.174	0.123 (0.044)**	0.068	0.045 (0.056)	0.020	
Asian/Indian	0.640 (0.084)***	0.123	0.035 (0.073)	0.015	0.267 (0.074)***	0.094	
White	0.563 (0.093)***	0.122	0.128 (0.062)*	0.062	0.254 (0.070)***	0.101	
Separated/divorced	0.203 (0.156)	0.030	0.084 (0.078)	0.028	0.036 (0.096)	0.010	
Widowed	-0.089 (0.153)	-0.016	0.055 (0.081)	0.023	0.096 (0.098)	0.032	
Married	0.309 (0.103)**	0.010	0.084 (0.052)	0.061	0.142 (0.065)*	0.084	
Good health	0.558 (0.097)***	0.162					
Very good/excellent health	1.034 (0.092)***	0.338					
Household size	-0.015 (0.017)	-0.022	-0.013 (0.008)	-0.042	-0.028 (0.011)**	-0.074	
Religious	0.111 (0.104)	0.023	0.181 (0.055)***	0.086	0.095 (0.064)	0.036	
Female-headed household	-0.094 (0.080)	-0.029	-0.030 (0.042)	-0.021	0.092 (0.053)	0.052	
Rural	-0.009 (0.067)	-0.003	0.029 (0.037)	0.020	0.026 (0.045)	0.014	
Other household structure	-0.056 (0.089)	-0.015	-0.088 (0.048)	-0.051	-0.05 (4.062)	-0.026	
Single parent with child	-0.145 (0.142)	-0.026	-0.048 (0.073)	-0.019	-0.06 (1.091)	-0.020	
Couple with no children	-0.034 (0.120)	-0.007	-0.012 (0.069)	-0.006	0.067 (0.086)	0.026	
Couple with at least one child	0.010 (0.099)	0.003	0.045 (0.056)	0.028	0.098 (0.067)	0.050	
Measurement model							
Item 1					1.000 (fixed)	0.630	
Item 3					1.071 (0.044)***	0.663	
Item 4					0.989 (0.043)***	0.662	
Item 6					0.675 (0.044)***	0.386	
Item 8					0.784 (0.040)***	0.543	
Item 10					0.610 (0.041)***	0.371	
Item 11					0.895 (0.045)***	0.586	
Item 14					0.756 (0.043)***	0.473	
Item 2			1.000 (fixed)	0.484			
Item 5			0.908 (0.060)***	0.532			
Item 7			0.951 (0.059)***	0.546			
Item 9			1.159 (0.064)***	0.641			
Item 12			0.804 (0.058)***	0.377			
Item 13			0.959 (0.057)***	0.620			
Item 15			1.188 (0.063)***	0.687			
Item 16			1.169 (0.063)***	0.612			
Error variances		<u>Unstandardized</u>		<u>Standardized</u>			
Satisfaction with family life		1.793 (0.043)			0.767 (0.017)		
Attachment		0.438 (0.043)			0.955 (0.010)		
Changeability		0.633 (0.044)			0.910 (0.013)		
Error covariance		0.124 (0.016)***		0.235 (0.028)***			
Goodness of fit							
S-B χ^2			1027.0, $p < 0.001$				
RMSEA			0.027				
CFI			0.913				
SRMR			0.026				

Note: Satorra-Bentler standard errors shown in parentheses. $p < 0.001$ ***, $p < 0.01$ **, $p < 0.05$ *. $N = 1920$.

Table 7: SEM results – household SES

	Happiness		Attachment		Changeability	
	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized

Structural model							
Attachment	-0.053 (0.051)	-0.023					
Changeability	0.195 (0.047)***	0.106					
Household SES index	0.386 (0.039)***	0.258	0.034 (0.023)	0.052	0.124 (0.028)***	0.152	
Log(age)	-6.121 (1.139)***	-1.714	-0.982 (0.069)	-0.621	1.968 (0.921)*	1.012	
Log(age squared)	0.855 (0.183)***	1.726	0.145 (0.096)	0.660	-0.251 (0.127)*	-0.931	
Female	0.222 (0.064)***	0.070	0.023 (0.037)	0.016	-0.004 (0.046)	-0.003	
Coloured	0.540 (0.077)***	0.133	0.101 (0.045)*	0.056	-0.023 (0.057)	-0.010	
Asian/Indian	0.207 (0.089)*	0.040	-0.014 (0.078)	-0.006	0.124 (0.082)	0.044	
White	0.088 (0.102)	0.019	0.066 (0.070)	0.032	0.089 (0.081)	0.035	
Separated/divorced	0.153 (0.152)	0.023	0.080 (0.078)	0.027	0.019 (0.095)	0.005	
Widowed	-0.092 (0.149)	-0.017	0.047 (0.081)	0.019	0.087 (0.096)	0.029	
Married	0.246 (0.103)*	0.080	0.075 (0.053)	0.054	0.118 (0.064)	0.070	
Good health	0.537 (0.094)***	0.156					
Very good/excellent health	0.976 (0.090)***	0.319					
Household size	-0.017 (0.017)	-0.025	-0.012 (0.008)	-0.041	-0.028 (0.011)***	-0.074	
Religious	0.023 (0.105)	0.005	0.170 (0.055)**	0.081	0.064 (0.064)	0.025	
Female-headed household	-0.089 (0.079)	-0.028	-0.026 (0.042)	-0.018	0.097 (0.052)	0.055	
Rural	-0.008 (0.066)	-0.002	0.029 (0.037)	0.019	0.028 (0.045)	0.015	
Other household structure	-0.059 (0.088)	-0.015	-0.086 (0.048)	-0.050	-0.051 (0.062)	-0.024	
Single parent with child	-0.118 (0.137)	-0.021	-0.045 (0.074)	-0.018	-0.057 (0.091)	-0.018	
Couple with no children	0.078 (0.119)	0.004	-0.008 (0.069)	-0.004	0.084 (0.085)	0.033	
Couple with at least one child	0.014 (0.098)	0.004	0.045 (0.056)	0.028	0.099 (0.066)	0.050	
Measurement model							
Item 1					1.000 (fixed)	0.629	
Item 3					1.071 (0.044)***	0.663	
Item 4					0.989 (0.043)***	0.662	
Item 6					0.674 (0.044)***	0.385	
Item 8					0.786 (0.040)***	0.543	
Item 10					0.610 (0.041)***	0.371	
Item 11					0.897 (0.045)***	0.586	
Item 14					0.756 (0.043)***	0.473	
Item 2			1.000 (fixed)	0.484			
Item 5			0.907 (0.060)***	0.532			
Item 7			0.951 (0.059)***	0.546			
Item 9			1.158 (0.064)***	0.641			
Item 12			0.803 (0.058)***	0.377			
Item 13			0.958 (0.057)***	0.619			
Item 15			1.187 (0.063)***	0.687			
Item 16			1.167 (0.065)***	0.611			
Error variances		<u>Unstandardized</u>		<u>Standardized</u>			
Satisfaction with family life		1.735 (0.062)		0.742 (0.017)			
Attachment		0.438 (0.043)		0.954 (0.010)			
Changeability		0.625 (0.044)		0.900 (0.014)			
Error covariance		Attachment and Changeability		0.121 (0.016)***	0.232 (0.028)***		
Goodness of fit							
S-B χ^2				1011.7, $p < 0.001$			
RMSEA				0.028			
CFI				0.912			
SRMR				0.027			

Note: Satorra-Bentler standard errors shown in parentheses. $p < 0.001$ ***, $p < 0.01$ ** , $p < 0.05$ *. $N = 1921$.

Table 8: SEM results – household SES quartiles

	Happiness		Attachment		Changeability	
	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Structural model						

Attachment	-0.048 (0.051)	-0.021				
Changeability	0.192 (0.047)***	0.105				
Household SES index: Quartile 2	0.519 (0.104)***	0.143	-0.002 (0.047)	-0.001	0.124 (0.060)*	0.063
Household SES index: Quartile 3	0.656 (0.102)***	0.182	0.035 (0.047)	0.022	0.165 (0.065)*	0.084
Household SES index: Quartile 4	0.952 (0.102)***	0.282	0.087 (0.059)	0.058	0.371 (0.074)***	0.202
Log(age)	-6.254 (1.320)***	-1.752	-0.977 (0.694)	-0.618	1.948 (0.916)*	1.002
Log(age squared)	0.873 (0.183)***	1.764	0.144 (0.096)	0.657	-0.248 (0.126)*	-0.921
Female	0.234 (0.064)***	0.074	0.022 (0.037)	0.016	0.000 (0.045)	0.000
Coloured	0.540 (0.079)***	0.133	0.102 (0.045)*	0.057	-0.027 (0.057)	-0.012
Asian/Indian	0.309 (0.086)***	0.059	-0.016 (0.076)	-0.007	0.115 (0.081)	0.041
White	0.253 (0.097)**	0.055	0.064 (0.069)	0.031	0.081 (0.078)	0.032
Separated/divorced	0.178 (0.153)	0.027	0.082 (0.077)	0.028	0.029 (0.095)	0.008
Widowed	-0.104 (0.149)	-0.019	0.047 (0.081)	0.019	0.082 (0.096)	0.027
Married	0.246 (0.104)*	0.080	0.074 (0.053)	0.054	0.113 (0.064)	0.067
Good health	0.533 (0.095)***	0.155				
Very good/excellent health	0.998 (0.090)***	0.326				
Household size	-0.017 (0.017)	-0.025	-0.012 (0.008)	-0.040	-0.027 (0.011)*	-0.072
Religious	0.044 (0.105)	0.009	0.171 (0.055)**	0.081	0.064 (0.064)	0.025
Female-headed household	-0.106 (0.079)	-0.033	-0.024 (0.042)	-0.017	0.098 (0.053)	0.056
Rural	-0.017 (0.066)	-0.005	0.029 (0.037)	0.019	0.024 (0.045)	0.013
Other household structure	-0.066 (0.088)	-0.017	-0.085 (0.048)	-0.050	-0.053 (0.062)	-0.025
Single parent with child	-0.151 (0.138)	-0.027	-0.047 (0.074)	-0.019	-0.064 (0.090)	-0.021
Couple with no children	0.026 (0.119)	0.006	-0.008 (0.069)	-0.004	0.085 (0.085)	0.034
Couple with at least one child	0.018 (0.099)	0.005	0.046 (0.057)	0.029	0.097 (0.066)	0.049
Measurement model						
Item 1					1.000 (fixed)	0.629
Item 3					1.071 (0.044)***	0.662
Item 4					0.991 (0.043)***	0.662
Item 6					0.675 (0.044)***	0.386
Item 8					0.786 (0.040)***	0.544
Item 10					0.610 (0.041)***	0.371
Item 11					0.897 (0.045)***	0.586
Item 14					0.756 (0.043)***	0.472
Item 2			1.000 (fixed)	0.484		
Item 5			0.907 (0.060)***	0.532		
Item 7			0.951 (0.059)***	0.546		
Item 9			1.158 (0.064)***	0.641		
Item 12			0.804 (0.058)***	0.377		
Item 13			0.958 (0.057)***	0.619		
Item 15			1.187 (0.063)***	0.687		
Item 16			1.168 (0.064)***	0.612		
Error variances		<u>Unstandardized</u>			<u>Standardized</u>	
Satisfaction with family life		1.738 (0.062)			0.743 (0.018)	
Attachment		0.438 (0.043)			0.954 (0.010)	
Changeability		0.622 (0.044)			0.897 (0.015)	
Error covariance						
Attachment and Changeability		0.121 (0.016)***			0.232 (0.029)***	
Goodness of fit						
S-B χ^2			1052.6, $p < 0.001$			
RMSEA			0.028			
CFI			0.911			
SRMR			0.026			

Note: Satorra-Bentler standard errors shown in parentheses. $p < 0.001$ ***, $p < 0.01$ ** , $p < 0.05$ *. $N = 1921$.

Table 9: SEM results – subjective SES

	Happiness		Attachment		Changeability	
	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Structural model						

Attachment	-0.013 (0.049)	-0.006				
Changeability	0.173 (0.045)***	0.094				
Subjective SES index	0.551 (0.038)***	0.356	-0.015 (0.019)	-0.022	0.101 (0.025)***	0.120
Log(age)	-5.923 (1.262)***	-1.658	-0.978 (0.697)	-0.618	1.941 (0.924)*	0.997
Log(age squared)	0.837 (0.175)***	1.689	0.143 (0.097)	0.651	-0.245 (0.128)	-0.907
Female	0.197 (0.061)***	0.062	0.016 (0.037)	0.011	-0.014 (0.045)	-0.008
Coloured	0.490 (0.073)***	0.121	0.128 (0.044)**	0.071	-0.006 (0.056)	-0.003
Asian/Indian	0.243 (0.080)**	0.047	0.046 (0.074)	0.020	0.197 (0.076)**	0.070
White	0.206 (0.091)*	0.045	0.140 (0.063)*	0.068	0.191 (0.070)**	0.076
Separated/divorced	0.171 (0.150)	0.026	0.085 (0.078)	0.029	0.032 (0.095)	0.009
Widowed	-0.084 (0.143)	-0.015	0.052 (0.081)	0.021	0.095 (0.097)	0.032
Married	0.189 (0.099)	0.061	0.089 (0.053)	0.065	0.120 (0.065)	0.071
Good health	0.388 (0.091)***	0.113				
Very good/excellent health	0.752 (0.089)***	0.246				
Household size	-0.014 (0.016)	-0.020	-0.013 (0.008)	-0.042	-0.028 (0.011)**	-0.074
Religious	0.055 (0.098)	0.012	0.183 (0.055)***	0.087	0.085 (0.063)	0.033
Female-headed household	-0.089 (0.076)	-0.028	-0.029 (0.042)	-0.020	0.096 (0.053)	0.055
Rural	-0.040 (0.063)	-0.012	0.031 (0.037)	0.021	0.024 (0.045)	0.013
Other household structure	-0.089 (0.085)	-0.023	-0.087 (0.048)	-0.051	-0.059 (0.062)	-0.028
Single parent with child	-0.117 (0.131)	-0.021	-0.048 (0.074)	-0.019	-0.065 (0.091)	-0.021
Couple with no children	-0.018 (0.115)	-0.004	-0.013 (0.069)	-0.006	0.070 (0.085)	0.028
Couple with at least one child	-0.004 (0.095)	-0.001	0.046 (0.056)	0.029	0.095 (0.066)	0.049
Measurement model						
Item 1					1.000 (fixed)	0.630
Item 3					1.070 (0.044)***	0.663
Item 4					0.989 (0.043)***	0.662
Item 6					0.674 (0.044)***	0.385
Item 8					0.785 (0.040)***	0.544
Item 10					0.608 (0.041)***	0.370
Item 11					0.897 (0.045)***	0.587
Item 14					0.755 (0.043)***	0.472
Item 2			1.000 (fixed)	0.484		
Item 5			0.907 (0.060)***	0.532		
Item 7			0.948 (0.059)***	0.545		
Item 9			1.157 (0.064)***	0.641		
Item 12			0.803 (0.059)***	0.377		
Item 13			0.959 (0.057)***	0.620		
Item 15			1.186 (0.062)***	0.687		
Item 16			1.167 (0.065)***	0.612		
Error variances		<u>Unstandardized</u>			<u>Standardized</u>	
Satisfaction with family life		1.608 (0.053)			0.687 (0.018)	
Attachment		0.439 (0.043)			0.955 (0.010)	
Changeability		0.627 (0.044)			0.902 (0.014)	
Error covariance						
Attachment and Changeability		0.125 (0.016)***			0.239 (0.028)***	
Goodness of fit						
S-B χ^2			1017.3, $p < 0.001$			
RMSEA			0.028			
CFI			0.913			
SRMR			0.027			

Note: Satorra-Bentler standard errors shown in parentheses. $p < 0.001$ ***, $p < 0.01$ **, $p < 0.05$ *. $N = 1921$.

Table 10: SEM results – subjective SES quartiles

	Happiness		Attachment		Changeability	
	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Structural model						

Attachment	-0.025 (0.050)	-0.011				
Changeability	0.179 (0.046)***	0.098				
Subjective SES index: Quartile 2	0.823 (0.102)***	0.229	-0.007 (0.045)	-0.005	0.118 (0.062)	0.060
Subjective SES index: Quartile 3	1.044 (0.097)***	0.301	-0.008 (0.049)	-0.005	0.215 (0.064)***	0.114
Subjective SES index: Quartile 4	1.300 (0.099)***	0.370	-0.016 (0.054)	-0.010	0.273 (0.067)***	0.143
Log(age)	-5.774 (1.277)***	-1.616	-0.983 (0.697)	-0.621	1.978 (0.923)*	1.016
Log(age squared)	0.811 (0.177)***	1.638	0.144 (0.097)	0.657	-0.250 (0.128)*	-0.926
Female	0.188 (0.062)**	0.059	0.017 (0.037)	0.012	-0.016 (0.045)	-0.009
Coloured	0.543 (0.074)***	0.134	0.123 (0.045)**	0.068	-0.004 (0.056)	-0.002
Asian/Indian	0.333 (0.080)***	0.064	0.036 (0.074)	0.016	0.197 (0.076)**	0.069
White	0.314 (0.091)***	0.068	0.129 (0.064)*	0.063	0.190 (0.071)**	0.075
Separated/divorced	0.205 (0.152)	0.031	0.085 (0.078)	0.029	0.037 (0.095)	0.010
Widowed	-0.054 (0.144)	-0.010	0.051 (0.081)	0.021	0.094 (0.097)	0.032
Married	0.213 (0.100)*	0.069	0.086 (0.053)	0.063	0.119 (0.064)	0.070
Good health	0.413 (0.093)***	0.120				
Very good/excellent health	0.790 (0.090)***	0.258				
Household size	-0.011 (0.017)	-0.017	-0.013 (0.008)	-0.042	-0.027 (0.011)*	-0.072
Religious	0.087 (0.010)	0.018	0.181 (0.055)***	0.086	0.089 (0.063)	0.034
Female-headed household	-0.095 (0.077)	-0.029	-0.028 (0.042)	-0.020	0.098 (0.053)	0.056
Rural	-0.047 (0.064)	-0.014	0.030 (0.037)	0.020	0.034 (0.045)	0.013
Other household structure	-0.099 (0.086)	-0.026	-0.087 (0.048)	-0.051	-0.060 (0.062)	-0.028
Single parent with child	-0.132 (0.132)	-0.023	-0.048 (0.074)	-0.019	-0.065 (0.091)	-0.021
Couple with no children	-0.017 (0.116)	-0.004	-0.013 (0.069)	-0.006	0.072 (0.085)	0.028
Couple with at least one child	-0.005 (0.096)	-0.001	0.046 (0.057)	0.029	0.097 (0.066)	0.049
Measurement model						
Item 1					1.000 (fixed)	0.630
Item 3					1.071 (0.044)***	0.663
Item 4					0.988 (0.043)***	0.661
Item 6					0.674 (0.044)***	0.386
Item 8					0.786 (0.040)***	0.544
Item 10					0.608 (0.041)***	0.370
Item 11					0.898 (0.045)***	0.587
Item 14					0.755 (0.043)***	0.472
Item 2			1.000 (fixed)	0.484		
Item 5			0.907 (0.060)***	0.532		
Item 7			0.949 (0.059)***	0.545		
Item 9			1.158 (0.064)***	0.641		
Item 12			0.803 (0.058)***	0.376		
Item 13			0.959 (0.057)***	0.620		
Item 15			1.186 (0.063)***	0.687		
Item 16			1.167 (0.065)***	0.612		
Error variances		<u>Unstandardized</u>			<u>Standardized</u>	
Satisfaction with family life		1.642 (0.059)			0.701 (0.018)	
Attachment		0.439 (0.043)			0.955 (0.010)	
Changeability		0.626 (0.047)			0.901 (0.014)	
Error covariance						
Attachment and Changeability		0.124 (0.016)***			0.237 (0.028)***	
Goodness of fit						
S-B χ^2			1038.5, $p < 0.001$			
RMSEA			0.027			
CFI			0.914			
SRMR			0.026			

Note: Satorra-Bentler standard errors shown in parentheses. $p < 0.001$ ***, $p < 0.01$ ** , $p < 0.05$ *. $N = 1921$.

Table 11: Multiple-group results

	χ^2	<i>df</i>	<i>p</i>	CFI	SRMR	RMSEA	χ^2_D	<i>df</i>	<i>p</i>
Individual SES									
1. No constraints on structural coefficients	2183.7	1470	0.000	0.898	0.041	0.032			
2. Attachment → happiness path coefficients set equal across SES groups, and Changeability → happiness path coefficients set equal across SES groups	2189.0	1476	0.000	0.899	0.041	0.032	5.3	6	0.510
Household SES									
1. No constraints on structural coefficients	2103.0	1422	0.000	0.900	0.041	0.032			
2. Attachment → happiness path coefficients set equal across SES groups, and Changeability → happiness path coefficients set equal across SES groups	2109.5	1428	0.000	0.900	0.041	0.032	6.4	6	0.376
Subjective SES									
1. No constraints on structural coefficients	2271.8	1470	0.000	0.884	0.041	0.034			
2. Attachment → happiness path coefficients set equal across SES groups, and Changeability → happiness path coefficients set equal across SES groups	2286.7	1476	0.000	0.883	0.041	0.034	14.8	6	0.022
Attachment → happiness, score tests: $\chi^2(3) = 11.6, p < 0.01$									
Changeability → happiness, score tests: $\chi^2(3) = 3.0, p = 0.390$									
3. Attachment → happiness path coefficients vary across SES groups, and Changeability → happiness path coefficients set equal across SES groups	2274.9	1473	0.000	0.884	0.041	0.034	3.0	3	0.388
Attachment → happiness path coefficient for Quartile 1: $b = -0.2959, se = 0.1613, p = 0.067$									
Attachment → happiness path coefficient for Quartile 2: $b = 0.1106, se = 0.1203, p = 0.358$									
Attachment → happiness path coefficient for Quartile 3: $b = -0.0953, se = 0.0783, p = 0.223$									
Attachment → happiness path coefficient for Quartile 4: $b = 0.1569, se = 0.0604, p < 0.01$									

Note: Chi-square difference test is based on a model with no constraints compared to a constrained model. MGSEM models for the individual- and subjective SES indices are estimated under the assumption of scalar invariance in the measurement model, and the models for the household SES index are estimated under the assumption of metric invariance in the measurement model (see Table 5A).

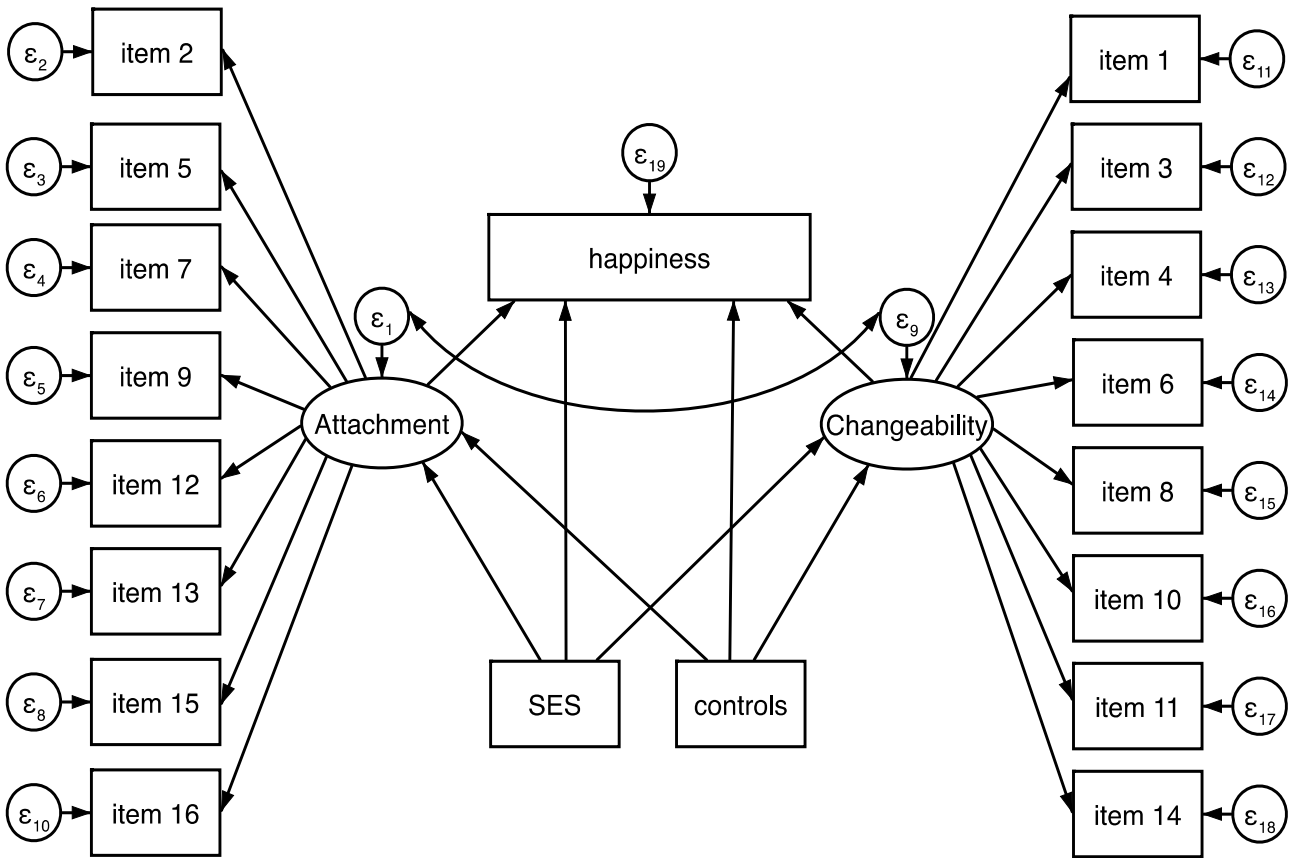


Figure 1: SEM model specification

Note: Controls include: Age, gender, race, marital status, health status (for the happiness equation), household size, religion status, whether the household is in a rural or urban area, whether the respondent lives in a female-headed household, and household structure.