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Family Functioning and Socioeconomic Status in South African Families: A Test of the Social Causation Hypothesis

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Abstract Optimal family relationships are central to individual well-being. The focus of this paper is on family functioning and how socioeconomic status (SES) explains family functioning. Ecological theory states that a family's socioeconomic context is determined by macro-systemic factors, thereby influencing individuals' perceptions of family functioning. Within this context, the social causation hypothesis asserts that social conditions influence family functioning. This paper uses the Family Attachment and Changeability Index as measure of family functioning. SES is viewed as multidimensional and individual-, household-, and subjective SES indices are developed using multiple correspondence analysis. Multivariate regression models suggest that household- and subjective SES are associated with higher levels of perceived flexibility in the family. There is no association between SES and family members' attachment to each other. In general, the findings support the social causation hypothesis.

1 Introduction

Interest in the study of family functioning has grown significantly during the past decades (Gorman-Smith et al. 2000; McCreary and Dancy 2004; Tiffin et al. 2007; Georgiades et al. 2008; Mansfield et al. 2013; Shek et al. 2014; Walsh 2016). This interest stems from the

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widely acknowledged importance of the family as a fundamental societal unit (Waite 2000; Patterson 2002a; Alesina and Giuliano 2010; Bogenschneider et al. 2012). Moreover, families and family relationships are important predictors of human development as well as individual health and well-being (Conger and Donnellan 2007; Alesina and Giuliano 2013; Botha and Booysen 2014). As such, exploring the determinants of family functioning is essential to understanding how to enhance human development and well-being via improved family functioning.

Among the many potential predictors of family functioning, the economic environment and economic circumstances are central for all families (Tiffin et al. 2007; Barnett 2008; Denny et al. 2014). The understanding of economic influences on perceptions of family functioning is essential for the provision of family support (Tiffin et al. 2007; Walsh 2016). In this context, a key factor that can impact on family functioning is socioeconomic status (SES). According to ecological theory, a family's socioeconomic context influences individuals' perceptions of family functioning (Meyers et al. 2002; McCreary and Dancy 2004; Tiffin et al. 2007; Rothwell and Han 2010; Schofield et al. 2011; Rawatlal et al. 2015).

The social causation perspective asserts that social conditions influence family well-being and functioning (Conger et al. 2002; Conger and Conger 2008; Tiffin et al. 2007; Warren 2009; Conger et al. 2010; Schofield et al. 2011).[1] In particular, the negative impact of economic adversity on family functioning is widely accepted (Conger et al. 1994; Georgiades et al. 2008; Donnellan et al. 2009; Stepleman et al. 2009; Denny et al. 2014), with low levels of SES often leading to negative psychological and health outcomes (Wilhelm et al. 2000; Seccombe 2002). In addition, since low SES exposes families to greater levels of stress and internal conflict (Conger and Conger 2002; Orthner et al. 2004; Mansfield et al. 2013; Han and Rothwell 2014; Williams et al. 2015), low SES may negatively influence family functioning (Rawatlal et al. 2015).

These mechanisms underlying the social causation perspective are consistent with the Family Stress Model (FSM) of economic hardship (Conger and Conger 2002; Conger et al. 2002; Wadsworth and Achenbach 2005; Conger and Donnellan 2007; Barnett 2008; Aytaç and Rankin 2009; Conger et al. 2010; Schofield et al. 2011). According to the FSM, economic hardship (such as low SES) increases economic pressures within the family, which in turn exacerbate stress and conflict, thereby negatively impacting family functioning. These intra-family conflict and stress ultimately have a negative effect on child development.[2] The social causation perspective and FSM therefore point to SES as a potentially important determinant of family functioning.

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[1] Related but contrasting to the social causation perspective is the social selection perspective, which states that individual personality traits and characteristics influence the family's SES (Conger and Donnellan 2007; Conger et al. 2010; Schofield et al. 2011). It is highly likely that both social causation and social selection may apply to any specific family context. The possibility of this interplay led to the development of the interactionist perspective (Conger et al. 2010; Schofield et al. 2011), which takes both the social causation and social selection perspectives into account when considering the relationship between family functioning and SES. As the data used in this paper do not contain sufficient data to examine the social selection perspective and hence also the interactionist approach, which also requires longitudinal data over a long time period, this paper focuses solely on the social causation perspective.

[2] Another framework consistent with the social causation perspective is the Family Investment Model (FIM), which posits that since higher-SES families have more resources than lower-SES families, higher-SES families will invest more in the development of their children than lower-SES families (Wadsworth and Achenbach 2005; Conger et al. 2010; Schofield et al. 2011). These investments will ultimately benefit the emotional and cognitive well-being of the children of higher-SES families more than lower-SES families.

The aim of this paper is to test the social causation hypothesis by examining the role of SES, broadly defined, in explaining self-reported family functioning in South African families. Relatively little is known about general family functioning in South Africa and there is no family functioning instrument specifically designed for use in the South African population (Taliep et al. 2014). While quite a number of studies (e.g.: Greeff 2000; Greeff and Holtzkamp 2007; Greeff and de Villiers 2008; Jonker and Greeff 2009; Brown and Robinson 2012; Rawatlal et al. 2015) have been conducted on family functioning as an outcome in South Africa, most employ univariate correlation analysis only and all are based on small convenience samples that restrict the generalizability of the results to tiny and very specific sections of the population. Furthermore, no research has been conducted on the association between SES and family functioning in South African families and also not with a nationally representative survey of the South African population. South Africa's Apartheid policies had immense effects on family life for many individuals, especially in terms of household living arrangements and marital patterns due to forced migration (Budlender and Lund 2011; Møller 2013), while also leading to large discrepancies in SES across the population. The result was thus substantial differences in family life contexts across the country coupled with severely unequal SES distributions across households (Amoateng et al. 2007; Nkosi and Daniels 2007; Møller 2013). South Africa therefore provides an interesting case study to examine how SES relates to family functioning.

2 Literature Review

Findings regarding the relationship between SES and family functioning have been somewhat mixed. Of note as well is that most previous research has employed income and education as markers of SES. Most studies have reported a positive association between family functioning and SES, thus implying that family functioning is generally better in higher SES families than in lower SES families. This result has been reported in, for example, Australia (Roelofse and Middleton 1985), Canada (Byles et al. 1988; Georgiades et al. 2008), Hong Kong (Ma et al. 2009a; Ma et al. 2011), US (Mansfield et al. 2013), and China (Li et al. 2014).

In a study of 143 families in England's Newcastle-upon-Tyne, Clark et al. (2000) found that greater dependence on social welfare (a proxy for insufficient income) was associated with an increase in family dysfunction. Educational disadvantage, on the other hand, had no significant relationship with family functioning. For a female sample in the US, however, Latham et al. (2001) reported a positive relationship between education and family functioning but no association between family functioning and household income. Insignificant relationships between SES and family functioning have also been noted in the US (Meyers et al. 2002; Philbrick and Fitzgerald 2007) and China (Li et al. 2009).

Some research stress the importance of considering gender differences in the association between family functioning and SES. Tiffin et al. (2007) focused specifically on gender differences in Northeast England and, in general, found stronger relationships between SES and family functioning among men compared to women. Greater levels of household income were significantly associated with improved perceptions of family functioning among men, although this finding was not that pronounced for women. Using data on Hong

Footnote 2 continued
For the purposes and context of this paper, the FSM is clearly the more relevant theory related to the social causation perspective.

Kong families, Ma et al. (2009b) and Ma et al. (2011) found no significant gender differences in the effect of household income on perceived family functioning.

Rawatlal et al. (2015) is to date the only study that has to some extent examined the relationship between family functioning and SES using South African data. The authors investigated a sample of 206 mainly low-SES families in the city of Durban. The Self-report of Family Inventory (SFI) was used as measure of family functioning, and household income and parental education as measures of SES. The results showed no significant relationship between either SES indicator and reported family functioning. Some limitations of the Rawatlal et al. (2015) study, however, are the relatively small sample size and a sample that is not entirely representative of the broader South African population.

In summary, existing empirical research suggests that poorer family functioning is generally associated with lower SES. However, there is no clear consensus on the existence of such a relationship (Tiffin et al. 2007; Li et al. 2014). Previous studies have also tended to use relatively narrow indicators of SES, whereas in a developing country such as South Africa broader SES measures or indices are often desirable (Howe et al. 2008). Research on South African families in particular has been scarce, moreover, which warrants further research. As noted in the introductory section of this paper, this study is the first to investigate the relationship between family functioning and SES in South Africa, and to use nationally representative data to investigate family functioning in South African families.

3 Data and Methods

3.1 The Data

This paper employs the 2012 round of the South African Social Attitudes Survey (SASAS), conducted by the Human Sciences Research Council (HSRC 2012). SASAS is a nationally representative survey conducted annually since 2003 as a repeated cross-section. SASAS monitors changes in the attitudes and values of South Africans over time. 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 nine provinces. Samples are drawn from the HSRC's master sample, which consists of 1000 Population Census enumeration areas and is stratified by province and majority 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 2547 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. After removing the relevant households, the final sample included 2 124 observations.

3.2 Family Functioning

McCubbin et al.'s (1996) Family Attachment and Changeability Index 8 (FACI8) is used as measure of family functioning, with the 2012 SASAS being the most recent South African household survey to include FACI8. Previously employed in South African research (Greeff and Holtzkamp 2007; Wouters et al. 2014; Masquillier et al. 2014, 2015) with different data sets, FACI8 is a self-report measure with two sub-scales, Attachment and Changeability, which each has 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. These sub-scales are analogous to the cohesion and flexibility dimensions of the Circumplex Model of Marital and Family Systems (Olson and Gorall 2003), where family cohesion (or togetherness) is 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 and Gorall 2003:516, 519). The FACI8 sub-scales are theoretically related but should be analysed as distinct components of family functioning (McCubbin et al. 1996). Cronbach's α is acceptable at 0.78 for both Attachment and Changeability.

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. In order to ensure positive scores on both sub-scales, the Attachment sub-scale is first reversed ("never" = 5, "sometimes" = 4, "half the time" = 3, "more than half the time" = 2, "always" = 1) prior to analysis. Table 1 presents the FACI8 items and their summary statistics.

To obtain the two sub-scale scores, McCubbin et al. (1996) developed specific scoring procedures designed to be applicable mainly in the US context and for African Americans and Caucasians.[3] However, South Africa has a vastly different family life context (Amoateng et al. 2007) and four main racial group classifications (Black, Coloured [referring to mixed-race individuals], Indian/Asian, and White), each with their own unique characteristics. As such, using McCubbin et al.'s (1996) original cutoff points to obtain family functioning scales would most likely not be appropriate within the South African context. The predicted latent factor scores derived from a two-factor confirmatory factor analysis (CFA) model[4] initially developed in Botha et al. (2016), where FACI8 was validated for use in South Africa using the SASAS 2012 data, are therefore used as measures of the Attachment and Changeability scales. These scores are based on a CFA that reflects the factor structure of FACI8 in South Africa and specifically in the SASAS 2012 data and therefore pre-existing cut-off scores are not imposed on the data.

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[3] For each respondent, the item responses are summed for each sub-scale. To derive the Attachment score in the African American scale, for instance, summed Attachment scores are recoded as follows: 0–10 = 1, 11–16 = 2, 17–22 = 3, 23–27 = 4, 28–33 = 5, and 34–40 = 6. Following summation of the Changeability scores, they are recoded as follows: 0–9 = 1, 10–12 = 2, 13–16 = 3, 17–20 = 4, 21–24 = 5, and 25–40 = 6. As an example, if the sum of a respondent's answers to the Attachment scale equals 13, a value of 2 is assigned to that respondent. Assuming that the sum of that respondent's answers on the Changeability scale equals 13, a value of 3 is assigned. For that specific respondent, the Attachment score is 2, the Changeability score is 3, and the overall FACI8 score is $(2 + 3)/2 = 2.5$. The overall FACI8 score is used mainly to classify families into four family functioning types (balanced, midrange, moderate, extreme), but for the purposes of this paper these family types are not applicable.

[4] The CFA from which the Attachment and Changeability factor scores are derived displayed very good overall fit indices (S-B $\chi^2(103) = 460.1$, $p < 0.001$; RMSEA = 0.042; CFI = 0.938; SRMR = 0.043). See Botha et al. (2016) for more information.

Table 1 Family Attachment and Changeability (FACI8) item averages

Item	In my family…	Mean (s.d)	% Stating…					
			Never	Sometimes	Half the time	More than half the time	Always	Total
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

Table 1 continued

Item	In my family…	Mean (s.d)	% Stating…					
			Never	Sometimes	Half the time	More than half the time	Always	Total
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

3.3 SES Indices

Though most studies primarily use education and income (and to a lesser extent occupational status) as indicators of SES (Tiffin et al. 2007; Conger et al. 2010), these variables are highly positively correlated in the current data. Although it is often preferable to include SES indicators separately in order to estimate their individual contributions to the specific outcome (Conger and Donnellan 2007; Conger et al. 2010; Diemer et al. 2013), the high correlations between SES measures in the SASAS data make such an approach undesirable. In addition, while income is often assumed to be the major contributor to family stress, other factors such as assets may also be important (Rothwell and Han 2010; Han and Rothwell 2014), especially in a developing country context (Kabudula et al. 2016).

Based on the idea that an individual's perceptions of family functioning are partly a function of the wider SES context in which the family finds itself rather than only a few individual-specific factors, this paper takes a broader view of SES, beyond education and income only, by constructing composite SES indices (Fotso and Kuate-Defo 2005; Phongsavan et al. 2006; Georgiades et al. 2008; Aytaç and Rankin 2009; Reising et al. 2013; Kabudula et al. 2016). From the data available, three SES indices were constructed, namely an individual-, household-, and subjective SES index. Using these specific indices allows for an examination of whether the classification or nature of SES matters for respondents' perceptions of family functioning. Another advantage is that objective as well as subjective SES components can be explored to determine if objective and subjective SES measures relate differently to perceived family functioning.

Since all variables in the SES indices are categorical, the SES indices were constructed via multiple correspondence analysis (MCA; Greenacre 2006; Howe et al. 2008; Sourial et al. 2010; Kabudula et al. 2016). The SES indices and their components are reported in Table 2. Index components were selected based on guidelines from previous literature (Barbarin and Khomo 1997; Bradley and Corwyn 2002; Yang and Gustafsson 2004; Fotso and Kuate-Defo 2005; Howe et al. 2008; Blakemore et al. 2009; Sheppard et al. 2009; Reising et al. 2013; Kabudula 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

Table 2 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. Note that the categories are the same as the household income categories (below), but the distributions differ, i.e. R0–R2 000 (73.4%, n = 1 316), R2 001–R5 000 (12.6%, n = 226), R5 001–R10 000 (6.8%, n = 123), and R10 001 and above (7.2%, n = 129)
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. Note that the categories are the same as the individual income categories (above), but the distributions differ, i.e. R0–R2 000 (36.6%, n = 591), R2 001–R5 000 (30.6%, n = 494), R5 001–R10 000 (14.2%, n = 229), and R10 001 and above (18.6%, n = 300)
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, or 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 versus 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"

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). 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. The MCA weights assigned to each SES component are presented in Table 12, which shows that all weights have the expected sign; that is, positive (negative) weights for items expected to be positively (negatively) related to SES.

3.4 Control Variables

The choice of control variables included in the analysis was based on previous research (Greeff 2000; Mansfield et al. 2013; Botha and Booysen 2014) as well as some intuition about factors that might be important predictors of family functioning within the South African context. These include the age, gender, racial group and marital status of the respondent, as well as household size, whether the respondent is religious, whether the particular household is in a rural or urban area, whether the respondent lives in a female-headed household, and household structure. The household structure categories consist of single-parent households with at least one child, a couple household without children, a couple with at least one child, skip-generation and multi-generation households, as well as households classified as "other" (these include mixed families with non-relatives living in the household, siblings only, and so on). Table 3 contains summary statistics of all variables used in the paper.

3.5 Regression Approach

As the Attachment and Changeability scales are distinct but theoretically related components of family functioning within FACI8 (McCubbin et al. 1996), this paper employs multivariate regression in order to model the two sub-scales jointly. Multivariate regression allows for the simultaneous estimation of regressions for Attachment and Changeability with the same covariates, while allowing for correlated error terms. The idea is thus that Attachment and Changeability are related, but they are conceptually different and should be modeled as such. The multivariate regression model is specified as:

$$A_i = \alpha_1 + \beta_i SES_i + \gamma_i X_i + \varepsilon_{i1} \tag{1}$$

$$C_i = \alpha_2 + \beta_i SES_i + \gamma_i X_i + \varepsilon_{i2} \tag{2}$$

where A_i and C_i denote the Attachment and Changeability factor scores referred to in Sect. 3.2, respectively, SES_i is the particular SES index (individual, household, or subjective), X_i is a vector of control variables, and ε_{i1} and ε_{i2} are error terms with corr (ε_{i1}, ε_{i2}) $\neq 0$. Support for the social causation hypothesis would be reflected by a statistically significant and positive relationship between SES and reported family functioning. A Breusch-Pagan χ^2 independence test is also reported, where rejecting the null hypothesis of independence implies that Attachment and Changeability are not independent and would support the estimation of multivariate regression.

Table 3 Summary statistics

Variable	Mean	S.D.	Min	Max
Attachment	0.036	0.581	−2.363	0.817
Changeability	0.047	0.678	−2.360	1.135
Individual SES index	0.008	1.003	−1.060	3.359
Household SES index	0.113	0.982	−2.040	2.519
Subjective SES index	0.056	0.988	−2.141	1.596
Age	37.142	16.379	16	95
Gender (female = 1)	0.531	0.499	0	1
Race: black	0.724	0.447	0	1
Race: coloured	0.113	0.316	0	1
Race: Indian/Asian	0.035	0.185	0	1
Race: white	0.128	0.334	0	1
Household size	5.050	2.633	2	16
Never married	0.524	0.500	0	1
Separated/divorced	0.036	0.185	0	1
Widowed	0.049	0.216	0	1
Married	0.314	0.464	0	1
Religious	0.848	0.359	0	1
Rural	0.322	0.467	0	1
Skip-generation/multi-generation household	0.379	0.485	0	1
Other household structure	0.246	0.431	0	1
Single-parent household with at least one child	0.047	0.212	0	1
Couple with no children	0.073	0.260	0	1
Couple with at least one child	0.172	0.378	0	1
Female-headed household	0.337	0.473	0	1

4 Results and Discussion

Table 4 shows correlation coefficients between the FACI8 sub-scales and the SES indices. There is a significant positive correlation between a respondent's reported level of Attachment and level of Changeability. The correlations between the FACI8 sub-scales and SES indices reveal interesting patterns. Firstly, for each SES index, the (positive) correlation with Changeability is higher than the correlation with Attachment. Secondly, the correlations between Attachment and the individual SES (0.068) and subjective SES (0.036, which is also not significant) indices are much lower than other reported correlations. These correlations therefore suggest that Changeability may have a stronger relationship with the various SES indices than Attachment.

Table 5 reports mean levels of Attachment and Changeability across SES quartiles for each SES index. The relationship between Attachment and individual SES quartiles is not statistically significant, whereas there is a significant relationship between the individual SES quartiles and Changeability. There is a significant positive association of both Attachment and Changeability with household SES, as mean Attachment and Changeability increases as the household SES quartiles increase. In addition, there is a positive and

significant relationship between Changeability and subjective SES quartiles, but not between the latter and mean Attachment scores.

The Attachment and Changeability factor scores were converted into quartiles and tabulated against the quartiles of the three SES indices, with the results reported in Tables 6, 7 and 8. The relationship between the Attachment quartiles ($\chi^2 = 19.2$, $p = 0.291$) and Changeability quartiles $\chi^2 = 25.4$, $p = 0.141$) with individual SES quartiles is not statistically significant. However, all other relationships between the FACI sub-scale quartiles and SES quartiles are significant. In general, the findings reveal a strong positive association between the family functioning quartiles and SES index quartiles. For example, roughly 35.3% of people in the top household SES quartile are also in the top Attachment quartile, relative to 22.8% of respondents in the bottom household SES quartile.

The multivariate regression results are reported in Tables 9, 10 and 11. For all models, the Breusch-Pagan χ^2 independence test indicates that Attachment and Changeability are not independent (all $p < 0.001$) and that they indeed should be modeled within a multivariate regression framework. Notably, the R^2 statistics vary from 4.5 to 4.6% for the Attachment equations and from 7.9 to 9.0% for the Changeability equations. This suggests that family functioning is explained in large part by factors that could not be captured in these regression models, and that there are many dimensions of family functioning that this

Table 4 Correlations between FACI8 scales and SES indices

	Attachment	Changeability	Individual SES	Household SES	Subjective SES
Attachment	1.000				
Changeability	0.286***	1.000			
Individual SES index	0.068**	0.108***	1.000		
Household SES index	0.119***	0.183***	0.483***	1.000	
Subjective SES index	0.036	0.134***	0.412***	0.669***	1.000

*** $p < 0.001$; ** $p < 0.01$

Table 5 Means and standard deviations of family functioning, by SES quartile

	Quartile 1	Quartile 2	Quartile 3	Quartile 4
Individual SES				
Attachment	−0.017 (0.031)	−0.024 (0.041)	−0.013 (0.039)	0.037 (0.037)
Changeability	−0.037 (0.037)	−0.114 (0.055)	−0.002 (0.043)	0.104 (0.046)***
Household SES				
Attachment	−0.079 (0.036)	−0.035 (0.041)	−0.012 (0.037)	0.108 (0.039)***
Changeability	−0.171 (0.040)	−0.080 (0.043)	−0.013 (0.044)	0.214 (0.045)***
Subjective SES				
Attachment	−0.029 (0.032)	−0.024 (0.038)	−0.008 (0.036)	0.045 (0.044)
Changeability	−0.148 (0.041)	−0.049 (0.039)	0.012 (0.045)	0.141 (0.043)***

Standard errors shown in brackets

*** $p < 0.001$ and corresponds to the hypothesis that the mean family functioning sub-scale scores are equal across quartiles

Table 6 Distribution of family functioning across individual SES index quartiles

	SES quartile				Total
	1	2	3	4	
Attachment quartile					
1	27.6	27.7	25.0	27.9	27.1 (n = 572)
2	19.9	17.5	21.6	15.2	18.7 (n = 394)
3	27.6	31.2	24.8	25.1	27.2 (n = 574)
4	24.9	23.5	28.6	31.8	27.0 (n = 570)
Total	100.0 (n = 750)	100.0 (n = 427)	100.0 (n = 444)	100.0 (n = 489)	100.0 (n = 2110)
Pearson $\chi^2 = 19.2$, $p = 0.291$					
Changeability quartile					
1	26.6	31.7	26.9	24.0	27.1 (n = 571)
2	22.3	19.3	18.0	16.3	19.4 (n = 409)
3	26.3	27.5	24.6	27.3	26.4 (n = 558)
4	24.9	21.5	30.4	32.4	27.1 (n = 572)
Total	100.0 (n = 750)	100.0 (n = 427)	100.0 (n = 444)	100.0 (n = 489)	100.0 (n = 2110)
Pearson $\chi^2 = 25.4$, $p = 0.141$					

Table 7 Distribution of family functioning across household SES index quartiles

	SES quartile				Total
	1	2	3	4	
Attachment quartile					
1	31.9	28.0	25.1	22.8	27.0 (n = 573)
2	22.9	18.5	21.8	13.5	19.2 (n = 408)
3	23.4	29.5	26.6	28.4	27.0 (n = 573)
4	21.8	24.1	26.5	35.3	26.9 (n = 572)
Total	100.0 (n = 532)	100.0 (n = 533)	100.0 (n = 531)	100.0 (n = 530)	100.0 (n = 2126)
Pearson $\chi^2 = 48.5$, $p < 0.01$					
Changeability quartile					
1	33.4	29.5	25.4	19.6	27.0 (n = 573)
2	23.2	20.8	21.9	13.4	19.9 (n = 422)
3	24.2	27.8	25.4	27.9	26.3 (n = 559)
4	19.3	21.9	27.3	39.1	26.9 (n = 572)
Total	100.0 (n = 532)	100.0 (n = 533)	100.0 (n = 531)	100.0 (n = 530)	100.0 (n = 2126)
Pearson $\chi^2 = 84.2$, $p < 0.001$					

study does not explain. It is also well known that R^2 is often very low in cross-sectional data sets.

While the individual SES index is positively related to family functioning, the parameters are not significant for either FACI8 sub-scales (Table 9). A cross-equation

Table 8 Distribution of family functioning across subjective SES index quartiles

	SES quartile				Total
	1	2	3	4	
Attachment quartile					
1	27.3	27.1	28.7	25.2	27.1 (n = 574)
2	25.4	19.9	11.8	18.3	18.9 (n = 400)
3	25.3	26.1	33.4	23.3	27.1 (n = 575)
4	22.0	26.9	26.1	33.3	27.0 (n = 573)
Total	100.0 (n = 543)	100.0 (n = 526)	100.0 (n = 540)	100.0 (n = 513)	100.0 (n = 2122)
Pearson $\chi^2 = 52.3$, $p < 0.001$					
Changeability quartile					
1	32.9	26.8	26.5	21.7	27.1 (n = 574)
2	20.3	23.7	18.8	15.3	19.6 (n = 415)
3	26.4	24.7	24.7	29.9	26.4 (n = 560)
4	20.3	24.8	30.0	33.2	27.0 (n = 573)
Total	100.0 (n = 543)	100.0 (n = 526)	100.0 (n = 540)	100.0 (n = 513)	100.0 (n = 2122)
Pearson $\chi^2 = 84.2$, $p < 0.001$					

hypothesis test suggests that the individual SES index coefficients are not different for Attachment and Changeability ($F = 1.7$, $p = 0.187$), thus individual SES has a similar association with Attachment and Changeability. There is also no evidence of any association between the individual SES quartiles and either Attachment or Changeability scores (Table 9). There is therefore no substantive relationship of individual SES with Attachment and Changeability.

Model 3 in Table 10 indicates a significant positive association between household SES and Changeability but not between household SES and Attachment. The household SES index coefficients across the Attachment and Changeability equations are not equal ($F = 11.6$, $p < 0.001$), and suggest that household SES has a different relationship with Changeability than with Attachment. Model 4 shows no significant difference in Attachment scores between the first household SES quartile and all other quartiles. For Attachment, there are no intra-group coefficient differences from quartiles 2–4. In contrast, the relationship between household SES quartiles and Changeability is quite strong, with persons in quartile 1 reporting significantly lower Changeability scores than persons in quartiles 2–4. Furthermore, reported Changeability is significantly higher among respondents in quartile 4 of the household SES index when compared to those in quartile 2 ($F = 11.3$, $p < 0.001$) and quartile 3 ($F = 4.4$, $p < 0.05$).

Turning to the subjective SES results, Model 5 in Table 11 shows that there is no significant association between the subjective SES index and Attachment, but a higher subjective SES index is strongly related to higher levels of Changeability. As with the household SES index, the subjective SES index coefficients are not equal across the two equations ($F = 23.1$, $p < 0.001$), implying that subjective SES relates differently to Attachment and Changeability. There is no evidence of any association between Attachment and subjective SES quartiles (Model 6). Persons in subjective SES quartiles 3–5, in contrast, report significantly greater levels of Changeability than those in subjective SES quartile 1. Changeability is also higher among those in quartile 4 ($F = 7.7$, $p < 0.01$) compared to persons in quartile 2.

Table 9 Multivariate regression results for individual SES index

Variable	Model 1		Model 2	
	Attachment	Changeability	Attachment	Changeability
Individual SES index	0.006 (0.016)	0.034 (0.019)		
Individual SES index: quartile 2			0.005 (0.039)	−0.014 (0.045)
Individual SES index: quartile 3			−0.022 (0.038)	−0.033 (0.045)
Individual SES index: quartile 4			−0.028 (0.042)	0.055 (0.050)
Log (age)	−0.709 (0.583)	−0.255 (0.685)	−0.477 (0.584)	−0.009 (0.686)
Log (age squared)	0.113 (0.082)	0.055 (0.097)	0.081 (0.082)	0.021 (0.097)
Female	0.035 (0.030)	0.027 (0.035)	0.028 (0.030)	0.020 (0.035)
Coloured	0.118 (0.043)**	0.010 (0.051)	0.123 (0.044)**	0.012 (0.051)
Indian/Asian	0.039 (0.077)	0.083 (0.091)	0.049 (0.077)	0.092 (0.091)
White	0.152 (0.049)**	0.208 (0.058)***	0.166 (0.049)**	0.218 (0.058)***
Household size	−0.012 (0.006)*	−0.020 (0.007)**	−0.012 (0.006)*	−0.021 (0.007)**
Separated/divorced	−0.043 (0.075)	0.167 (0.088)	−0.042 (0.075)	0.168 (0.088)
Widowed	−0.098 (0.073)	0.175 (0.086)*	−0.098 (0.073)	0.170 (0.086)*
Married	−0.011 (0.044)	0.111 (0.052)*	−0.008 (0.044)	0.110 (0.052)*
Religious	0.147 (0.038)***	0.064 (0.045)	0.149 (0.038)***	0.067 (0.045)
Rural	−0.009 (0.029)	0.012 (0.035)	−0.008 (0.029)	0.011 (0.035)
Household structure: other	−0.103 (0.034)**	−0.102 (0.040)*	−0.104 (0.034)**	−0.104 (0.040)**
Household structure: single parent with children	−0.023 (0.067)	−0.040 (0.079)	−0.021 (0.067)	−0.036 (0.079)
Household structure: couple without children	−0.052 (0.063)	−0.009 (0.074)	−0.049 (0.063)	−0.004 (0.074)
Household structure: couple with children	0.014 (0.046)	0.032 (0.054)	0.016 (0.046)	0.035 (0.054)
Female-headed household	−0.033 (0.032)	−0.030 (0.037)	−0.033 (0.032)	−0.030 (0.037)
Constant	0.975 (1.015)	0.163 (1.193)	0.580 (1.010)	−0.273 (1.186)
Observations	2037	2037	2037	2037
R^2	0.045	0.079	0.046	0.079
F-statistic	5.3***	9.6***	4.8***	8.6***
Breusch-Pagan χ^2 independence test	$\chi^2 = 132.3$ ($p < 0.001$)		$\chi^2 = 133.0$ ($p < 0.001$)	
Residual correlation	0.255		0.256	

Standard errors are reported in brackets

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

The findings on the relationship between SES and family functioning as reported in Tables 9, 10 and 11 highlight some interesting observations. As expected, the relationship of family functioning with individual-level SES factors is much weaker than with

Table 10 Multivariate regression results for household SES index

Variable	Model 3		Model 4	
	Attachment	Changeability	Attachment	Changeability
Household SES index	0.022 (0.018)	0.105 (0.021)***		
Household SES index: quartile 2			0.039 (0.038)	0.107 (0.044)*
Household SES index: quartile 3			0.021 (0.039)	0.183 (0.046)***
Household SES index: quartile 4			0.070 (0.049)	0.294 (0.057)***
Log (age)	−0.613 (0.543)	0.257 (0.635)	−0.607 (0.544)	0.271 (0.635)
Log (age squared)	0.100 (0.077)	−0.016 (0.635)	0.100 (0.077)	−0.017 (0.090)
Female	0.037 (0.029)	0.031 (0.034)	0.039 (0.029)	0.037 (0.034)
Coloured	0.103 (0.045)*	−0.056 (0.053)	0.104 (0.045)*	−0.063 (0.053)
Indian/Asian	0.012 (0.081)	−0.040 (0.094)	0.014 (0.081)	−0.032 (0.094)
White	0.121 (0.056)*	0.067 (0.065)	0.121 (0.056)*	0.079 (0.066)
Household size	−0.012 (0.006)*	−0.020 (0.007)**	−0.011 (0.006)*	−0.020 (0.007)**
Separated/divorced	−0.044 (0.075)	0.163 (0.087)	−0.040 (0.075)	0.161 (0.088)
Widowed	−0.103 (0.073)	0.159 (0.085)	−0.107 (0.073)	0.149 (0.085)
Married	−0.014 (0.044)	0.096 (0.052)	−0.016 (0.044)	0.092 (0.052)
Religious	0.143 (0.038)***	0.050 (0.045)	0.144 (0.038)***	0.052 (0.045)
Rural	−0.010 (0.029)	0.009 (0.034)	−0.011 (0.029)	0.009 (0.034)
Household structure: other	−0.101 (0.034)**	−0.094 (0.040)*	−0.102 (0.034)**	−0.096 (0.040)*
Household structure: single parent with children	−0.020 (0.067)	−0.028 (0.078)	−0.021 (0.067)	−0.035 (0.078)
Household structure: couple without children	−0.049 (0.063)	0.008 (0.0673)	−0.050 (0.063)	0.011 (0.073)
Household structure: couple with children	0.014 (0.046)	0.033 (0.054)	0.012 (0.046)	0.034 (0.054)
Female-headed household	−0.031 (0.032)	−0.025 (0.037)	−0.033 (0.032)	−0.025 (0.037)
Constant	0.807 (0.948)	−0.731 (1.108)	0.762 (0.950)	−0.899 (1.109)
Observations	2038	2038	2038	2038
R^2	0.046	0.088	0.046	0.090
F-statistic	5.4***	10.8***	4.9***	10.0***
Breusch-Pagan χ^2 independence test	$\chi^2 = 131.2$ ($p < 0.001$)		$\chi^2 = 131.2$ ($p < 0.001$)	
Residual correlation	0.254		0.254	

Standard errors are reported in brackets

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

household SES and subjective SES. One possible explanation for this finding is that an individual's own socioeconomic circumstances are unlikely to have much relation to that person's perceptions of the family relationship; socioeconomic factors that impact the family more broadly are likely to play a larger role in explaining reported family functioning. In addition, from a conceptual standpoint we would expect family functioning to

Table 11 Multivariate regression results for subjective SES index

Variable	Model 5		Model 6	
	Attachment	Changeability	Attachment	Changeability
Subjective SES index	−0.018 (0.015)	0.078 (0.018)***		
Subjective SES index: quartile 2			−0.028 (0.037)	0.090 (0.044)*
Subjective SES index: quartile 3			−0.034 (0.039)	0.141 (0.046)**
Subjective SES index: quartile 4			−0.038 (0.042)	0.224 (0.049)***
Log (age)	−0.642 (0.544)	0.276 (0.636)	−0.641 (0.545)	0.328 (0.637)
Log (age squared)	0.103 (0.077)	−0.016 (0.090)	0.103 (0.077)	−0.023 (0.090)
Female	0.031 (0.029)	0.022 (0.034)	0.032 (0.029)	0.020 (0.034)
Coloured	0.129 (0.044)**	−0.029 (0.042)	0.127 (0.044)**	−0.025 (0.052)
Indian/Asian	0.060 (0.078)	0.033 (0.091)	0.055 (0.078)	0.038 (0.091)
White	0.178 (0.049)***	0.161 (0.058)**	0.171 (0.050)***	0.158 (0.058)**
Household size	−0.012 (0.006)*	−0.021 (0.007)**	−0.012 (0.006)*	−0.020 (0.007)**
Separated/divorced	−0.042 (0.075)	0.169 (0.088)	−0.043 (0.075)	0.173 (0.088)*
Widowed	−0.098 (0.073)	0.166 (0.085)	−0.099 (0.073)	0.170 (0.085)*
Married	−0.005 (0.044)	0.097 (0.052)	−0.006 (0.045)	0.093 (0.052)
Religious	0.150 (0.038)***	0.059 (0.045)	0.149 (0.038)***	0.061 (0.045)
Rural	−0.008 (0.029)	0.008 (0.034)	−0.008 (0.029)	0.007 (0.034)
Household structure: other	−0.105 (0.034)**	−0.098 (0.040)*	−0.104 (0.034)**	−0.096 (0.040)*
Household structure: single parent with children	−0.024 (0.067)	−0.034 (0.078)	−0.023 (0.067)	−0.039 (0.078)
Household structure: couple without children	−0.050 (0.062)	−0.012 (0.073)	−0.051 (0.063)	−0.009 (0.073)
Household structure: couple with children	0.015 (0.046)	0.031 (0.054)	0.015 (0.046)	0.033 (0.054)
Female-headed household	−0.033 (0.032)	−0.026 (0.037)	−0.033 (0.032)	−0.024 (0.037)
Constant	0.868 (0.948)	-0.787 (1.110)	0.888 (0.952)	−0.996 (1.123)
Observations	2038	2038	2038	2038
R^2	0.046	0.086	0.046	0.087
F-statistic	4.6***	10.5***	4.8***	9.6***
Breusch-Pagan χ^2 independence test	$\chi^2 = 136.8$ ($p < 0.001$)		$\chi^2 = 136.4$ ($p < 0.001$)	
Residual correlation	0.259		0.259	

Standard errors are reported in brackets

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

be related differently to individual SES and household SES, as these encompass different concepts: The individual SES index includes the more traditional SES measures whereas the household SES index reflects a household's assets and quality of infrastructure.

Another noteworthy result is that the role of the household- and subjective SES indices in explaining family functioning is different for Attachment than it is for Changeability. Thus, the relationship between Attachment and SES is not the same as the relationship between Changeability and SES, as there is a significant difference between the (household and subjective) SES coefficients across the Attachment and Changeability equations.

Household SES and subjective SES are much more pronounced in predicting family Changeability than they are in explaining family Attachment. In fact, SES relates little, if at all, to Attachment. Perceptions of family Attachment are therefore independent of the family's socioeconomic circumstances, suggesting that emotional bonds and attachment between family members are determined by factors other than family SES (Patterson 2002b; Olson and Gorall 2003; Lebow and Stroud 2012). Theoretically, Attachment and Changeability are protective factors that may facilitate greater family resilience (Patterson 2002a, b). In this paper, however, only Changeability is strongly related to SES. Thus, families of higher SES will also likely be more resilient in the face of adversity via the improved flexibility within the family (Seccombe 2002) that is associated with better SES.

The findings support the social causation hypothesis, as greater (household and subjective) SES is related to improved family functioning (Wadsworth and Achenbach 2005; Tiffin et al. 2007; Conger et al. 2010; Schofield et al. 2011). However, support for the social causation hypothesis is applicable specifically to family Changeability as opposed to Attachment. The findings imply that persons living in higher-SES families on average have better perceptions of their family's functioning—in particular flexibility of the relation-ships between family members—than individuals residing in families of lower SES. In addition, those who perceive their household SES as above that of other households also report better levels of family Changeability compared to respondents who perceive their household SES as being below that of other households.

In broad terms, the finding of a positive relationship between SES and family func-tioning is consistent with previous studies such as Mansfield et al. (2013) and Li et al. (2014), but differs from Rawatlal et al.'s (2015) study of a sample of Durban-based families, where no significant association between family functioning and SES was reported. It should be noted, however, that these studies are not directly comparable given the different family functioning instruments and SES measures used compared to this paper.

Briefly considering some of the control variables across all estimated equations, regarding household size respondents living in larger households tend to report poorer levels of family functioning. A possible explanation for this observation is that more people in the household place greater physical and emotional demands on the individual members, which may negatively impact overall family functioning. There are no gender differences in family functioning in any of the models, which is supported by previous research (Ma et al. 2009b, 2011). Coloured respondents report significantly greater Attachment compared to Black respondents, while relative to Black persons White respondents report better levels of Attachment and Changeability. What may explain these racial differences is not clear, and will be an interesting avenue for future research. Persons who describe themselves as being religious report significantly better family Attachment relative to those who are not religious: perhaps those who are more religious place greater importance on emotional bonds within the family. Household structure also matters: Persons in "other" household types report poorer family functioning than those in multi-

generation or skip-generation households. Couples with children report higher Attachment ($F = 5.4$, $p < 0.05$) and Changeability ($F = 5.1$, $p < 0.05$) than those in "other" household types. This finding is also true in the household SES and subjective SES models.

5 Conclusion

Using South African data, the purpose of this paper was to investigate the social causation hypothesis in the relationship between family functioning and SES, namely that social conditions are related to family functioning and family relationships. The results demonstrate support for the social causation hypothesis. There is a strong positive association between SES and family Changeability, suggesting that persons in higher-SES families tend to report better levels of flexibility in their relationships with other family members. Subjective SES also matters, as persons who feel that their family's SES is higher compared to that of other families report higher levels of Changeability. Family Attachment, on the other hand, is not related to SES, possibly suggesting that the emotional bonds within the family are not dependent on the family's SES. Overall, the findings highlight the potential importance of promoting improvements in especially household-level SES among South African families, as it may potentially facilitate better family functioning which, via better Changeability, are likely to assist families in being more resilient (Patterson 2002a) when faced with adverse conditions.

This paper has limitations. The cross-sectional nature of the data set implies that comments about causality cannot be made. Unfortunately, there is no existing South African panel data set that contains FACI8. Another limitation is that the SASAS data only include a single respondent per household, meaning that intra-family differences in family functioning cannot be investigated. Also, since there are no data on individual personality traits, it is only possible to examine the social causation hypothesis, although the social selection and interactionist perspectives could also potentially be at play.

Nevertheless, this paper was the first to explore the relationship between family functioning and SES in a nationally representative South African sample. Moreover, within the context of South Africa's fragmented family life setting due largely to Apartheid policies, this paper shows that sustained improvements in individual and especially household living standards are likely to benefit family life as well, specifically by potentially improving the flexibility of relationships within the family that in turn may make families more resilient in the long term. Assuming the availability of sufficiently detailed panel data, future research would be able to investigate the causal relationships in the social causation and social selection hypotheses, and interactionist perspective.

Appendix

See Table 12.

Table 12 MCA index weights

Variable	Weight	Variable	Weight
Individual SES		*Home security service*	
Individual income		Yes	2.572
R0–R2000	−0.647	No	−0.361
R2001–R5000	1.015	*Deep freezer*	
R5001–R10000	1.924	Yes	1.584
R10001+	2.714	No	−0.737
Education		*Pay-TV subscription*	
None/primary	−0.803	Yes	1.570
Some secondary	−0.560	No	−0.866
Matric or equivalent	0.568	*Dishwasher*	
Tertiary	2.279	Yes	2.642
Employment status		No	−0.173
Employed	1.322	*At least one car*	
Unemployed	−0.705	Yes	1.634
Household SES		No	−0.953
Household income		*Home theatre system*	
R0–R2000	−1.145	Yes	1.596
R2001–R5000	−0.450	No	−0.541
R5001–R10000	0.926	*Swimming pool*	
R10000+	2.160	Yes	3.007
Asset ownership Geyser with hot running water		No	−0.165
		Air conditioner	
Yes	1.717	Yes	2.781
No	−1.016	No	−0.256
Fridge/freezer		*At least one cellphone*	
Yes	0.483	Yes	0.107
No	−2.061	No	−1.527
Microwave oven		*Electricity access*	
Yes	0.997	Yes	0.251
No	−1.506	No	−2.550
Vacuum cleaner/floor polisher		*Toilet facility*	
Yes	2.179	None	−2.253
No	−0.563	Other	−1.777
Washing machine		Pit latrine	−1.408
Yes	1.397	Flush	0.803
No	−1.103	*Dwelling type*	
Desktop/laptop		Formal	0.397
Yes	1.790	Informal	−1.679
No	−0.743	*Source of drinking water*	
DVD player/Blu Ray player		Piped	0.555
Yes	0.715	Public	−1.775
No	−1.307	Other	−1.554
Electric stove		**Subjective SES**	

Table 12 continued

Variable	Weight	Variable	Weight
Yes	0.424	*Perceived family wealth*	
No	−1.934	Very poor/poor	−1.717
TV		Just getting along	−0.241
Yes	0.378	Reasonably comfortable	0.843
No	−1.813	Very comfortable/wealthy	1.334
Tumble dryer		*Perceived relative income*	
Yes	2.217	Much below/below average income	−1.187
No	−0.296	Average income	0.725
Landline telephone		Above/much above average income	1.623
Yes	1.768	*Actual income versus required income*	
No	−0.512	Less than required	−0.923
Radio		Same as required	0.572
Yes	0.500	More than required	1.033
No	−0.805		
Kitchen sink			
Yes	1.262		
No	−1.219		

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