

# CONSUMING KIDS: TESTING A DICHOTOMOUS SCALE FOR MEASURING CHILDREN'S MATERIAL VALUES

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## Abstract

This study aims to test a dichotomous scale for measuring children's material values. Research into childhood consumer behaviour has taken a keen interest into the materialism values of children. Studies have sought to understand how materialism develops in children, the material values that children hold and the effects of materialism on children's well-being. Other studies have sought to investigate the ways in which childhood materialism can be measured. Many of the studies investing children's materialism have adopted the Material Values Scale for children (MVS-c), which is in a Likert scale format. However, studies on child consumers have shown that younger children struggle to express their attitudes using Likert type questions. This research examines the material values of tween consumers using an adapted Material Values Scale. The aim of the study was to assess the validity and reliability of a dichotomised version of the MVS-c. The dichotomised scale was generated by collapsing the four response categories into a binary response scale. This methodological study uses a 12-item, yes/no response instrument to obtain data from 192 school children. The data was subjected to factor analysis, Kuder-Richardson (KR) 20, item total correlation and structural equation modelling. Factor loadings for the items varied between 0.24 and 0.69, with an acceptable KR-20 value of 0.708 for the scale. While the study confirmed the second-order material values structure, the weak factor loadings, compared to those obtained using Likert scales, suggest that dichotomous questions are not the most reliable for measuring children's material values. The findings of this study have implications for research with children.

**Keywords:** materialism; dichotomous scale; material values; child consumers.

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## INTRODUCTION

The importance of adolescents as actors in the consumer market has increased exponentially in the last few decades (Ozgen & Esiyok, 2020). Children's participation in consumer culture has seen them become a lucrative market for commercial organisations as both purchasers and influencers of household consumer purchases (Chaudhury & Hyman, 2019; Shrum, Chaplin & Lowrey, 2022). Children's access to financial resources, their ability to influence family decision-making and their position as future consumers has made them an important consumer group to marketing practitioners. Consequently, over the last few decades, the amount of marketing directed at children has increased exponentially (Roach, Goodwin & Nelson, 2019; Van der Meulen, Kühne & Oprea, 2018).

Children's active role as consumers and the incessant commercial messages aimed at them, have led to an increase in the commercial pressures of modern childhood and compulsive consumption. As such, children's consumer behaviour and involvement in consumer culture have attracted considerable research interest (Sigirci, Gegez, Aytimur & Gegez, 2022). One of the research streams that has attracted sustained interest in child consumer research has been materialism and the development of material values. Research has shown that materialism has become a prominent ideology among adolescents, with wealth being one of the top aspirations of young people's lives (Zawadzka, Lewandowska-Walter, Borchet, & Iwanowska 2022). Compulsive consumption and materialistic behaviour are global phenomena, which have led to adverse effects on children (Oprea, Buijzen, Reijmersdal, & Valkenburg 2011; Roach et al., 2019; Baker & Chan, 2020).

A review of the childhood materialism literature revealed that materialism in young children is often measured using the Material Values Scale for children (MVS-c), developed by Oprea et al. (2011). This scale was developed based on the adult Material Values Scale by Richins and Dawson (1992). In a systematic review of adult materialism, these authors found that existing definitions of materialism generally entail one of three ideas: material happiness (the degree to which a person believes that owning material possessions is key to their happiness and life satisfaction); material success (the degree to which material possessions are used to measure one's success and that of others) and material centrality (the degree to which one holds the ownership and acquisitions of material possessions as being central to life).

Consequently, the authors developed and validated a material values scale. Inspired by this work, Oprea et al. (2011) determined that adult materialism scales are not suitable for use among child consumers, hence their development of the MVS-c. This is an 18-item, Likert scale developed for children's material values. Research with children has suggested that they may sometimes struggle to respond to Likert scale questions regarding their judgements, attitudes or values (Mellor & Moore, 2014). The aim of this study is, therefore, to assess whether dichotomising a Likert-type, material values scale for children will still be valid and reliable for measuring childhood materialism.

Two main considerations motivate this study. The first is that while child consumer researchers agree that Western children are growing up in a consumer culture, where their frequent exposure to incessant marketing activities aimed at them results in materialistic attitudes, the same conclusions cannot be made about African children, as childhood consumer research has largely excluded them (Senooane, 2023; Senooane & Phiri, 2020). Much of the childhood research on materialism has largely focused on Western children and, thus, children from emerging economic and developing nations are excluded (Nairn & Oprea, 2021). The second is that the importance of children as a consumer segment has increased the need for research that involves their own authentic voices (Cooper, 2022).

Research on younger demographic segments is necessary because consumption orientations typically develop during the formative years (Baker & Chan, 2020). Consequently, research methodologies that are most appropriate for children need to be investigated. From a marketing perspective, children have become a major market for commercial organisations, hence insight into their consumer behaviour can help shape our understanding of consumer culture. Additionally, the findings from studies on children not only have implications for the current marketing environment, but also on the future marketing environment (Sigirci et al., 2022). As such, marketing research can benefit from insights gleaned from these young consumers.

## **LITERATURE REVIEW**

### **What is materialism?**

Materialism has a long history in consumer research (Shrum et al., 2022). It has attracted considerable research interest from a variety of disciplines; hence it has been defined in different ways. Materialism has drawn scholarly attention because of the negative consequences attached to it (Manchiraju & Krizan, 2015). Consumer researchers define materialism as “the importance that consumers attach to possessions and the central role that these possessions play, most notably as sources of satisfaction or dissatisfaction in life” (Lim, Phang & Lim, 2020). People who are materialistic feel pressure to own possessions in order to be happy (Ozgen & Esiyok, 2020). Materialistic individuals place the consumption and acquisition of material possessions at the centre of their lives, seeing possessions as essential to their life satisfaction and well-being, while judging the success of others and themselves by the quantity and quality of possessions accumulated (Richins & Dawson, 1992).

Consumer researchers have conceptualised materialism as either a personality trait (Maison & Adamczyk, 2020), a lifestyle (Rasmussen et al., 2021) or a value orientation (Dittmar & Isham, 2022). For the purposes of this study, materialism is regarded as a material values orientation (MVO). In this research tradition, materialism is regarded as a permanent characteristic that defines a person's values (Lim et al., 2020). People with a material values orientation believe that if they acquire more money and material possessions that are expensive, then their well-being and social standing will improve (Górník-Durose & Pilch, 2016; Dittmar & Isham, 2022). People who value material possessions will see possessions as an extension of who they are and will try to use those possessions to signal their success.

### **How childhood materialism develops**

Children begin to desire material possessions at an early age (Chaplin & John, 2007). While consumption itself is neither good or bad for well-being, the motives driving the desire to acquire and possess material goods may lead to a materialistic outlook if one starts to believe that such ownership will serve to improve one's image, increase their happiness or help them achieve certain social status (Dittmar & Isham, 2022). Research has shown that children in both early and middle childhood value the possession of material goods (Richins, 2017; Van de Meulen et al., 2018). Researchers have shown that materialism in children has a variety of pathways from which it emanates.

Influences on childhood materialism include life events (Baker & Chan, 2020; Richins, 2017), parental materialism (Allsop et al., 2021; Russell & Shrum, 2021), peer influence (Shrum et al. 2022; Zawadzka et al., 2022), self-esteem (Jiang et al., 2015; Nairn & Oprea, 2021), advertising and marketing (Nairn & Oprea, 2021; Oprea et al., 2020), and income inequality (Nairn & Oprea, 2021; Richins & Chaplin, 2021). Most of these studies indicate that the development of materialism is the result of either psychological or sociological factors (Chaplin et al. 2019). Ultimately, most of these studies suggest that childhood materialism develops when children are exposed to social models or socialisation agents that encourage or cultivate materialistic values.

### **Research on childhood materialism**

Scholars have had a long-standing interest in the development of material values and materialistic attitudes (Allsop et al., 2021; Baker & Chan, 2020; Dittmar & Isham, 2022). Research on childhood materialism has focused on four major areas. The first research stream is concerned with the conceptualisation and measurement of materialism (Baker & Chan, 2020; Oprea et al., 2011; Schor, 2004). Materialism is conceptualised as a value orientation and measured with scales such as the Youth Materialism Scale (Goldberg et al., 2003) and the Material Values Scale for children (Oprea et al., 2011). Scholars in the second research tradition consider individual factors affecting materialism (Chaplin et al., 2014; Dittmar & Isham, 2022; Ozgen & Esiyok, 2020). Research in this stream focuses on the relationship between personal/individual factors such as age, gender, socio-economic status, and materialism. For instance, Ozgen and Esiyok (2020) investigated the role of age, gender, and social class on children's materialism.

The third research stream investigates interpersonal influences on materialism (Allsop et al., 2021; Casabayo et al., 2020; Zawadzka et al., 2022). Scholars of this tradition have considered the influence of interpersonal influences such as parental materialism, peer relations and religious norms on children's materialism. For instance, Allsop et al. (2021) investigated the association between parental materialism and parental-child relationship quality, while Zawadzka et al. (2022) investigated environmental correlates of adolescent materialism, with a particular emphasis on the role of role models such as parents, siblings, and peers. The last research tradition considers the influence of advertising and media exposure on the development of materialistic attitudes in children (Nairn & Oprea, 2021; Oprea et al., 2020; Russell & Shrum, 2021). For instance, Nairn and Oprea (2021) investigated the susceptibility to the effect of television advertising exposure on materialism between children from deprived and affluent backgrounds. Table 1 below presents of some of the studies that have been conducted by various researchers in the first research tradition, from material values research emanates.

**Table 1**  
Research on Children's Material Values

<i>Author(s)</i>	<i>Sample</i>	<i>Methodology</i>	<i>Findings</i>
<b>Oprea et al. (2011)</b>	8-10 yrs (n=1001)	Material Values Scale for children (MVS-c)	Presumed second-order structure of the MVS-c was confirmed. 3, 6 and 18-item versions valid and reliable for children.
<b>Jiang et al. (2015)</b>	12-16 yrs (n=91)	Negative experience recall and MVS-c	Short MVS-c valid and reliable, revealing a causal relationship between peer rejection and adolescent materialism.
<b>Oprea &amp; Kühne (2016)</b>	15-17 (n=264)	Online questionnaire, including the MVS-c	Increased reality TV exposure leads to greater materialism, entitlement and narcissism.
<b>Van Der Meulen et al. (2018)</b>	6-8 yrs (n=125)	Questionnaire (MVS-c)	Material centrality, material success and material happiness are first-order constructs for material values.
<b>Kühne &amp; Oprea (2019)</b>	8-12 yrs (n=2995)	Material Values Scale for Children (MVS-c)	The material values scale is valid and reliable to study the predictors and outcomes of materialism across all age groups.
<b>Ozgen &amp; Esiyok (2020)</b>	14-16 yrs (n=208)	Consumer Values Orientation Scale	Consumer ethics, materialistic attitudes and material satisfaction vary according to socio-economic level.
<b>Nairn &amp; Oprea (2021)</b>	9-13 yrs (n=557)	Questionnaire	Deprived children are more materialistic than affluent children, due to higher exposure to advertising and greater belief in advertisement credibility.

Source: Research data.

### The Material Values Scale for children (MVS-c)

Childhood materialism is often measured using the Material Values Scale for children (MVS-c) developed by Oprea et al. (2011). The authors intended to develop a scale for measuring childhood materialism using insights gleaned from adult materialism research. Their work was inspired by the Material Values Scale (MVS) by Richins and Dawson (1992), whose review of adult materialism research revealed that materialism is a second-order construct with three underlying factors (i.e., "material centrality", "material happiness" and "material success"). Oprea et al. (2011) discovered that existing scales that had been used to measure materialism in children up to then, included only one or two of the aforementioned factors. Consequently, they adapted the items of the Material Values Scale

(MVS) by Richins and Dawson (1992) to make them more appropriate for research with children, given that scales for adults typically have low content validity for children, are difficult for them to understand because of the language used and, typically, have 5 or more options, when 4 options have been shown to be optimal for children (Opree et al., 2011). Structural equation modelling (SEM) was used to confirm the second-order structure of the MVS-c. Based on the findings, a full length 18-item MVS-c was created as well as 6 and 3-item versions, which also performed well in terms of reliability and construct validity. The MVS-c has been used in a variety of disciplines including developmental psychology, communication studies, sociology and marketing (Kühne & Opree, 2019).

### **Research using the Material Values Scale for children (MVS-c)**

Various authors have used the MVS-c to measure materialism in children. Jiang et al. (2015) used the 6-item version on a sample of Chinese children aged 12-16, to measure the mediating role of self-esteem on peer rejection and adolescent materialism. The authors found high levels of internal consistency in the scale. The short version of the scale was also adopted by Opree and Kühne (2016) to measure materialism in Dutch children aged 15-17. The study sought to link children's watching of reality TV to materialism, entitlement, and narcissism. The 6 items of the scale were found to form a reliable measure. Van de Meulen et al. (2018) sought to validate the scale among children in early childhood. The authors administered the scale to elementary school children aged 6-8. They examined the factorial structure of the 3, 6 and 18-item versions of the scale, using structural equation modelling, and found that the 6 and 18-item versions are both reliable and valid for assessing materialism among 6-8-year-olds. Kühne and Opree (2019) validated the scale for use across the lifespan. They administered it to different populations, including children aged 8-12 (n=2995). The authors found that the scale can be reliably and validly used across the lifespan to study the predictors and outcomes of materialism.

### **The current study**

The initial purpose of the study was to investigate the material values of South African children using the Material Values Scale for children (MVS-c). This scale has been used in different contexts for children, primarily in Western contexts. The questionnaire contains 3, 6 or 18 items using a 4-point Likert scale. The researchers engaged in a pilot study with 60 South African children to determine where the scale could be applied to African children. The results revealed that some of them, particularly the younger ones, struggled with understanding Likert scale questions. For instance, the children struggled to express their choices between "no, not at all" and "no, a little", as some could not quantify the difference between the two. The children expressed a preference for yes/no questions, as these types of questions could help them respond as to whether they are materialistic or not. The researchers then opted to modify some of the items in the scale to a binary response, to which the children faced no challenges with responding. The dichotomised scale was generated by collapsing the four response categories into two: YES ("yes, very much" and "yes, a little") and NO ("no, not at all" and "no, not really").

### **Research with children using YES/NO questions (Y/N-Q responding)**

Child researchers have postulated that the type of questions asked to children, in investigative settings, are of great importance in any attempt to elicit precise information from them (Behzadnia & Mehrani Rad, 2020; Mellor & Moore, 2014). Despite researchers' misgivings about their suggestive nature and inhibiting influence on children's responses, different reviews of child research indicate the predominance of yes/no questions in interviewing children (Behzadnia & Mehrani Rad, 2020). There are two primary advantages of using binary response questions for research with children. The first is that they are easy to answer, thereby placing less of a burden on respondents. Dichotomous response questions reduce the chances of misinterpreting the response options and they elicit direct answers from respondents, with little chance for ambiguity (Capik & Gozum, 2015). Unlike multiple response formats, they are cognitively less demanding, which would make them more ideal for children. Secondly, binary response formats require relatively smaller sample sizes to fit measurement models,



because fewer parameters need to be estimated (Chan, 2014). This is an important consideration in research with younger demographic segments, because studies involving children typically have smaller sample sizes due to the number of permissions and levels of consent required to conduct research with child respondents (Gross-Manos et al., 2021).

## METHOD

The objective of this study was to test the efficacy of a material values scale for children when administered in a dichotomous format. The first step was to review literature to ascertain how childhood materialism has been measured by other researchers. The literature survey resulted in the development of a survey instrument for the collection of data. Data for the study was collected using an in-class, self-administered questionnaire from school children in South Africa. An adapted material values scale for children (MVS-c) was administered to a sample of 192 children (male  $n=69$ ; female,  $n=123$ ), aged 10 to 14 years ( $M=11.40$ ,  $SD=1.31$ ) and drawn from tween consumers in Gauteng, South Africa. Tweenagers are children between the ages of 8-13 (Rasmussen, Rigg & Sauermilch, 2022). They have been defined as “the most brand-oriented, consumer-involved and materialistic generation in history” (Schor, 2004). As such, they were considered the most appropriate target population for a materialism study.

The significant number of permissions required to conduct research with children adversely affected the sample size. Given the ethical issues that may arise from research with vulnerable groups such as children, multiple levels of consent are required. With consent required from the department of education, the school, the parents, and the children themselves, the numerous levels of consent resulted in fewer children being allowed to participate in the study. Table 2 below presents a summary of the respondents' demographics. The age, gender and socio-economic status variables were selected because these three variables are key in the study of childhood materialism (Oprea et al., 2011; Van de Meluen et al., 2018; Chaplin, John, Reindfleisch & Froh, 2019).

**Table 2**  
Demographic Summary

<i>Variable</i>	<i>Characteristic</i>	<i>Frequency (N)</i>	<i>Percentage (%)</i>
Gender	Female	122	64.1
	Male	69	35.9
Age	10 years	49	25.5
	11 years	50	26.0
	12 years	32	16.7
	13 years	45	23.4
	14 years	16	8.3
Socio-economic Class	Upper-middle class	45	23.4
	Lower-middle class	38	19.8
	Emerging middle class	44	22.9
	Low emerging middle	33	17.2
	Second-lowest class	32	16.7

Source: Research data.

## Measures

*Material Values Scale:* The material values scale contained 12 dichotomous items with YES/NO response categories. A pilot study of the original Material Values Scale for children (MVS-c) found that some of the younger tweens struggled with Likert scale questions and expressed a preference for yes/no questions, thus the binary response scale was created. Additionally, the children struggled with the long version of the scale hence the researchers limited it to 12 questions. The reliability of these items was measured using Kuder-Richardson 20 (KR-20) formula. According to Anselmi et al. (2019), the KR-20 is the most appropriate measure of internal consistency for dichotomous scale items and

the KR-20 coefficient should be between 0 and 1. Values closer to 1 indicate that the measure is more likely to correlate with alternative forms of the measure. Material happiness was measured using 4 items, which had a questionable KR-20 value of 0.641. The 4 items used to measure material centrality revealed a poor KR-20 value of 0.510. Given that the original scale, which was validated by several authors, used Likert scale type questions, it is likely that the use of dichotomous variables conversely affected the KR-20 values. Material success, which was measured using 4 items, was the only variable with an acceptable KR-20 value of 0.705. The complete 12-item scale had an acceptable KR-20 value of 0.708, which is above the minimum threshold.

Other researchers have attempted to test dichotomous versions of existing Likert scale measurement items or vice versa. Capik and Gozum (2015) used a 15-item instrument to assess the psychometric features of an assessment instrument after altering the responses to a dichotomous format. The authors found that the binary response instrument yielded results that were equally valid as the Likert-formatted instrument. Similarly, Jeong and Lee (2016) found that dichotomising a 5-point Likert scale by collapsing it to a 2-point scale did not negatively affect the results. In a review of data from three General Social Survey (GSS) panel studies conducted between 2006 and 2014, assessing the impact of the number of response categories on the reliability of measurements of attitudes or subjective phenomena, Alwin, Baumgartner and Beattie (2018) found that the less response categories used, the more reliable the measurement instruments. In their study on the use of Likert scales for children aged 6-13, Mellor and Moore (2014) attempted to ascertain the consistency of children's responses to questions using yes/no formats and a 5-point Likert-type questions. The authors found that scales using yes/no formats for children produce data that is similar or consistent to those using dichotomous versions. The examples from each of these studies demonstrate that reducing the number of response categories does not negatively impact the results of a study.

**Materialism:** Materialism was measured using items adapted from Buijzen and Valkenburg's (2003) materialism scale and the youth materialism scale by Goldberg et al. (2003). A few items were taken from the two scales and adapted to make the materialism measure contextually relevant. The scale consisted of six items: (i) "Do you think it's really true that money can buy happiness?" (ii) "Do you believe that people are much happier if they can buy a lot of things?" (iii) "My friends like me because I have cool clothes" (iv) "Do think it's important to own expensive things?" (v) "Do you think it's important to own expensive clothes?" (vi) "Do you think it's important to own expensive brands?". The response options for the items were (1) No, not at all (2) No, not really (3) Yes, a little and (4) Yes, very much. Cronbach Alpha was computed to determine whether the scale was reliable and internally consistent. According to Ab Hamid, Sami & Sidek (2017), Cronbach Alpha values  $>.70$  are acceptable for advanced stages of research. The adapted materialism scale met the minimum threshold of 0.7 with a Cronbach's Alpha value of 0.772.

## FINDINGS AND DISCUSSION

Data was analysed using the Statistical Package for Social Sciences (SPSS) version 28. To test for demographic differences, composite variables were created for material happiness, material centrality and material success, with the assumption that each item under the three constructs had an equal contributory weighting on the overall score per factor. Chi square analysis for the frequency of responses between gender, age and socio-economic status, and each of the three factors revealed no association between these demographic variables and the children's response pattern. This finding suggests that children from both genders, of different ages and from different socio-economic status' responded to the material values items in a similar way. Additionally, correlations between the three demographic variables and the three material values factors revealed that there were no significant positive correlations between these factors. The instrument's reliability was evaluated using Kuder-Richardson 20, whose value was 0.708, which was above the minimum threshold ( $>0.70$ ), therefore, the composite scale can be considered reliable for measuring material values. The inter-item correlations were also inspected to determine the scale's internal consistency. Values should fall between .15 and .50 (Hair et al., 2019). The results in table 3 indicate that the values ranged between

.254 and .40, indicating that the values were well within the acceptable range. The results taken together suggest that the dichotomous scale was internally consistent and, thus, reliable.

The structure of the material values scale was explored using factor analysis. Factor analysis is one the simplest ways of estimating the construct validity of a research instrument (Watkins, 2018). While previous versions of the material values scale used 3, 6 and 18 Likert-scale items, the current study adopted 12 dichotomous items, thus it was necessary to conduct factor analysis despite using an existing scale. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett’s Test of Sphericity were used to examine the dataset’s suitability for factor analysis. The KMO coefficient was 0.741 and Bartlett’s test of sphericity was  $\chi^2(66) = 373.19$  ( $p < 0.001$ ), which indicated that factor analysis was useful for the dichotomous data. A KMO value over 0.5 with a significance level below 0.5 for Bartlett’s test suggests that there is significant correlation in the data to proceed with factor analysis (Hair et al., 2019; Watkins, 2018). Principal components analysis (PCA) with Promax rotation was used as the extraction method. Factor loadings ranged between 0.411 and 0.833. The model’s three factor structure was confirmed. The results of the factor analysis can be seen in Table 3 below.

**Table 3**  
Factor Analysis

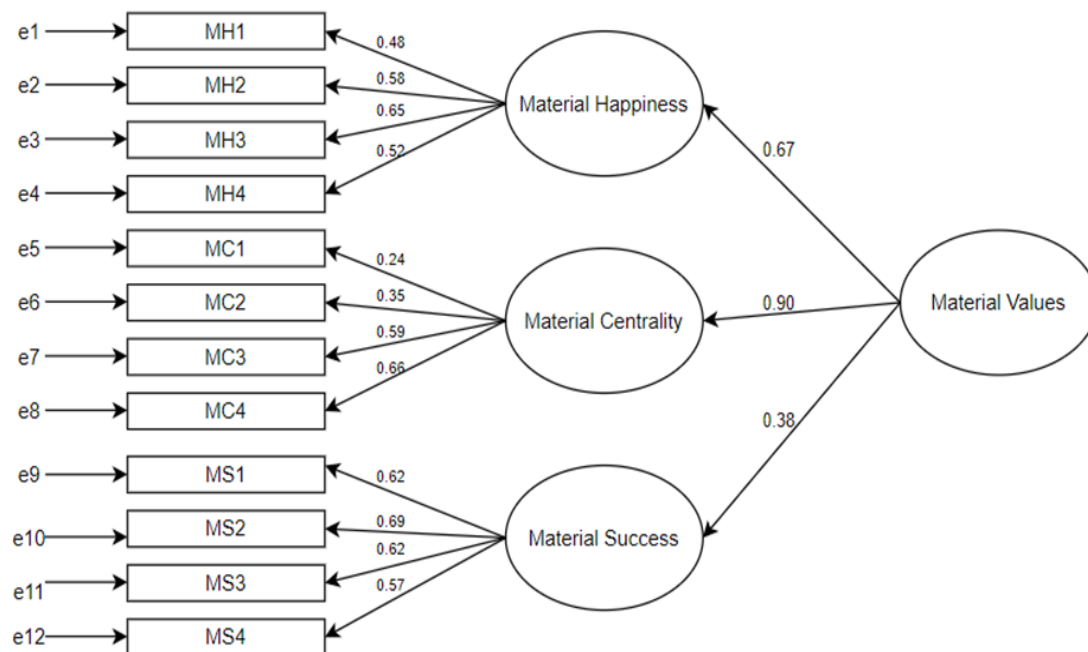
<i>Variable</i>		<i>Item</i>	<i>Factor Loading</i>	<i>Item/Total Correlation</i>
<b>Material Happiness</b>	MH1	Does buying expensive things make you happy?	.528	.332
	MH2	“Does having a lot of money make you happy”?	.555	.391
	MH3	“Would you be happier if you owned more clothes that are expensive”?	.715	.438
	MH4	“Would you be happier if you could buy more brands that are expensive”?	.721	.355
<b>Material Centrality</b>	MC1	“Do you think it’s important to get a lot of presents for your birthday”?	.661	.338
	MC2	“Do you think it’s important for you to have the latest fashion”?	.411	.254
	MC3	“Do you think other children like you more if you have expensive brands”?	.785	.369
	MC4	“Do you think other children like you more if you have many expensive things”?	.833	.400
<b>Material Success</b>	MS1	“Do you like children who have expensive things more than you like other children”?	.753	.273
	MS2	“Do you like children who have a lot of money more than you like other children”?	.795	.272
	MS3	“Do you like children who have expensive clothes more than you like other children”?	.710	.315
	MS4	“Do you like children who have a lot of things more than you like other children”?	.642	.347

Source: Research data.

Confirmatory factor analysis (CFA) using the maximum likelihood (ML) estimation technique was performed to assess how well the 3-factor material values model captured the covariances between the measures in the model (Hair et al., 2019). SPSS Amos was used to test the assumption that materialism is a second-order construct with material happiness, material centrality and material success as first-order factors. The fit of the model was evaluated using the normed Chi square ( $X^2/\text{degrees of freedom}$ ), the Comparative Fit Index (CFI), Goodness of Fit Index (GFI), Tucker Lewis Index (TLI), together with the Root Mean Square Error of Approximation (RMSEA) and its accompanying p-close. Normed Chi square values  $<2$  are considered to be indicative of a good model fit (Van de Meulen et al., 2018). GFI, GFI and TLI values greater than .90 with a Cmin/df  $<0.5$  and a non-significant p-value ( $p \geq .05$ ) indicate a good fit. Additionally, a RMSEA that is  $<0.8$  with a non-



significant p-close also indicates acceptable fit (Ab Hamid et al., 2017, Watkins, 2018). The test of the model revealed the following indices:  $\chi^2/df = 1.273$  ( $p < 0.091$ ), CFI = .956, GFI = .947, TLI = .943, RMSEA = .038 and p-close = .762. Figure 1 below shows the second-order material values model.



**Figure 1.** Second-Order Material Values Model.

Source: Research data.

Factor loadings for the material happiness, material success and material centrality constructs ranged between 0.24 and 0.69 using standardised estimates. These were compared with factor loadings for two studies using Likert scale items. Opree et al. (2011) had factor loadings ranging between 0.48 and 0.81, while Van De Meulen et al. (2018) had factor loadings that ranged between 0.39 and 0.73. While the factor loadings for the two studies were higher than those of the current study, the differences were not very high. For material happiness and material success, all the factor loadings were above the recommended cut-off  $< .4$ , indicating sufficient relationships between the manifest indicator variables and the first-order factors. This was consistent with Opree et al. (2011). However, for the material happiness variable, Van De Meulen et al. (2018) had two factors that were less than the recommended cut-off (0.39 and 0.12). This suggests that there may be instances in which a dichotomous item may perform better than when it is in a Likert format.

Two of the indicators for material centrality were below the cut-off  $< .4$  (0.24 and 0.35), suggesting a poor relationship between those two factors and material centrality as a first-order factor. This was contrary to the two comparison studies as the factor loadings for this variable were all above the recommended cut-off. The study then sought to test the second-order factorial structure for childhood materialism. This was done to determine the factor loadings of the first-order factors on the second-order factors. A visual inspection of figure 1 reveals that material happiness and material centrality had a positive effect on the second-order factor materialism.

This study explored whether using a dichotomous, yes/no response material values scale would provide a reliable alternative to the commonly used Likert format material values scale for children (MCS-c). To this effect, the study administered a 12-item material values scale for children adapted from Opree et al. (2011). Capik and Gozum (2014) postulated that reducing the number of response categories or instrument items does not impact the results. Thus, the current study sought to test this claim using a shorter, less response categories MVS-c. A comprehensive review of marketing literature relating to child consumers by Sigirci et al. (2022) revealed that materialism is one of the

important research domains in marketing literature related to children. Similarly, Shrum et al. (2022) argue that materialism is one of the central concepts in consumer research that is more central to marketing and consumer behaviour than any other construct. As such, this methodological study sought to test an alternative method of measuring childhood materialism. Other researchers have validated the MVS-c in different contexts and across different age groups. However, none of these studies have attempted to validate a binary response version of the scale, which was the objective of the present study.

Analysis of the data by gender, age and socio-economic status revealed that there were no statistically significant differences for each of these demographic variables, so the data was combined for subsequent analyses. It was clear that when the children in the sample respond to questions concerning their material values, there was no association between gender, age, socio-economic status and the children's response patterns. Previous studies on children and materialism, using the material values scale, have shown similar findings regarding the influence of demographics on children's responses. For instance, similar to the current study, Kuhne and Oprea (2018) also found little or no gender differences in the children's responses. The same authors also found no age differences. Likewise, Van de Meulen et al. (2018) also found no statistically significant correlations between gender and the MVS-c. The other studies, with which the current study was compared, did not seek to investigate the socio-economic class differences. This is unlike other studies that investigate childhood materialism using other scales, which consider socio-economic class as one of the key drivers of materialism (Nairn & Oprea, 2021; Zawadzka et al., 2022).

The presumed second-order structure of the scale was tested using confirmatory factor analysis, and the reliability and validity of the scale were examined. The results regarding the internal consistency of the scale demonstrate that the 12-item dichotomous scale is reliable and, hence, appropriate for measuring children's material values. The study attempted to validate a 6-item version of the scale in line with Oprea et al. (2011) and Van de Meulen et al. (2018). Contrary to these authors, the study found that a 6-item dichotomous scale was not as useful as the 12-item versions. The results showed that the factorial structure of the MVS-c is confirmed. The confirmatory factor analysis indicated that children's materialism is a second-order construct with material happiness, material centrality and material success being first-order factors. However, material success had a weak factor loading. This is contrary to all the studies discussed in the literature survey that adopted the material values scale for children. This suggests that the dichotomous scale may not be very effective for measuring childhood materialism.

An important finding of the study is that the shorter version of the dichotomous material values scale had very low reliability (i.e., KR-20 = 0.478). This result was contrary to other researchers who found a 6-item Likert scale to be reliable and appropriate for use among children (Oprea et al., 2011; Van de Meulen et al., 2018). Kühne and Oprea (2019) determined that while the 6-item version was originally validated among 8-12 year-olds, it is increasingly being implemented among adolescents and emerging adults. This points to the importance of this shorter version of the scale. The authors tested the 6-item version's factorial structure, reliability and validity to verify whether it can be used across the lifespan. The authors found that the 6-item version of the MVS-c can be validly and reliably used across the lifespan, including on tween consumers. Internal consistency was high across the age groups (between  $\alpha = 0.88$  and  $\alpha = 0.93$ ). The results of the current study then suggest that dichotomising the 6-item version of the scale was not appropriate, as it produced unreliable results.

## CONCLUSIONS

Materialism is a central concept in consumer research which has received considerable attention from scholars. However, much of the extant research on children's materialism has largely excluded African children. Similarly, much of the existing research has been conducted in economically developed nations, with research on developing and emerging markets lagging. The current study sought to bring South African children into the discussion on childhood materialism, by investigating whether a binary response material values scale would be suitable for measuring their material values. The study confirmed that materialism is indeed a second-order factor with material happiness,

material success and material centrality being first-order factors. While the model fit indices suggested a good fit between the model and the data, the weak factor loadings suggest that a dichotomous scale is not very effective for measuring children's material values. The study, therefore, concludes that a dichotomised version of the material values scale for children (MVS=c) is not very reliable for measuring children's materialism. Secondly, the study did not find any statistically significant differences in the children's responses based on gender, age and socio-economic status. Thus, the study concludes that these demographic variables do not influence children's material values.

### **Theoretical and practitioner implications**

Child consumer researchers have always been interested in finding the best ways to conduct research with children. Understanding whether a dichotomous scale produces valid and reliable results is necessary not only for childhood materialism research but for child consumer research in general. The results of this study revealed that a longer dichotomized version of this scale is somewhat reliable but the shorter version (6-item) is not reliable. Therefore the results of this study suggest that while dichotomous questions may be easier for children to respond to, they are not the best to use with children when conducting research concerning values. These results are important for child consumer researchers. In studies where the dependent variable is dichotomous, these type of questions may be appropriate. However, the current study indicated that when trying to get an in-depth understanding of children's values, dichotomous questions are not very reliable. While the factorial structure was confirmed, the weak factor loadings and some of the weak reliability results indicate that dichotomizing the scale may not be the most appropriate.

This study also contributes to an understanding of African child consumers. Much of the extant childhood consumer research has been conducted in Western societies, largely excluding African children. Given the vast socio-economic differences, studies on children from other socio-cultural contexts such as the current study are necessary. While these prior studies have suggested that Western children exhibit some materialistic tendencies, the findings of this study suggest that African children are not very materialistic. Marketing practitioners should thus know how they must develop marketing programs that are aimed at these children that will not encourage the development of materialistic values. Given some of the differences in the results with existing studies, practitioners also need to take into account that African children have their own distinct identities as consumers and must be treated as such in both theoretical and practical settings.

### **Limitations and future research**

This research has some limitations. In addition to the limited sample size, the study had a few other methodological limitations. The first was that the ratio of males and females was skewed in favour of females. While this ratio reflects the gender imbalance in South African schools, the differences in the gender sample sizes may have had an influence on the outcomes of the significance tests. Considering that gender is an important variable in the measurement of childhood materialism and that the current study attempted to test for gender differences, this skewed sample possibly affected the outcomes. Secondly, the current study only used the adapted dichotomous scale to measure materialism. This means that the study was different from the studies against which the results were compared. Additionally, the original material values scale contained 18 items, but the current study only utilised 12 items. The results of the confirmatory factor analysis could be different if the entire scale is used. Ideally, the study should have contained identical validation measures to the other studies. Better insights could have been gained if the original scale has been administered together with the dichotomous response scale, so as to compare the results of both. Other studies attempting to validate dichotomised versions of Likert scales should administer both versions of the scale simultaneously, so that real-time comparisons can be made.

### **Research ethic statement**

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## Disclosure statement

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