
Article

Behaviorally-informed policies to reduce materialism among youth in Egypt: experimental evidence

Sidrah Khalil,^{1,*} Sarah Mansour,¹ Marwa Shibl Biltagy¹

¹ Faculty of Economics and Political Sciences, Cairo University, Egypt

*Correspondence: sedra_nasr2019@feps.edu

Abstract. Materialism, characterized by prioritizing material possessions over intrinsic values, has been shown to negatively impact well-being, social behavior, and economic activities. However, limited research addresses interventions to reduce materialism in non-WEIRD societies, particularly in the Middle East. This study examines the effectiveness of behavioral interventions in lowering personal materialism among Egyptian youth, a demographic displaying significant materialistic tendencies. Utilizing a survey experiment with 296 participants from Egypt's 25 governorates, the study employed Richins and Dawson's Material Values Scale (1992) to measure materialism. Participants were randomly assigned to one of three interventions: boosting self-esteem, fostering gratitude, or promoting empathy, in addition to a control group. Results indicate that interventions targeting self-esteem and empathy significantly reduced materialism overall score ($p < 0.05$) and ($p < .01$), respectively, and materialism score was associated with centrality, while self-esteem, gratitude, and empathy notably lower materialism in dimensions associated with success. However, no significant impact was observed on materialism's score. These findings highlight the potential of governance measures and behaviorally-informed policies in addressing materialism and suggest tailored interventions to promote intrinsic values among youth.

Keywords: behavioral interventions; government policies; materialism; Egypt; youth

JEL classification: C9; Z13; Z18

1. Introduction

Materialism is a process of preference. It is the tradeoff between materialistic and non-materialistic values and gains; the inclination to consider material acquisitions, possessions, and physical comfort as of higher importance than spiritual values (Fournier & Richins, 1991). The concept is a purely humanistic perspective as it entails a deep unmet psychological need and insecurity in which people use material objects to fulfil it. High levels of materialism can stimulate consumer desire to some degree and stimulate achievement motivation, which in turn stimulates commodity demand (Sirgy et al., 2013). For consumers, younger people with higher levels of materialism tend to shop more often, have more knowledge about products and services, and are most sensitive to advertising and promotions (Goldberg et al., 2003). However, the economic literature shows that this phenomenon

has a negative impact on happiness and wellbeing (Roberts & Clement, 2007; Dittmar et al. 2014; Kasser, 2018). It leads to irrational behaviors (consumerism, compulsive buying behaviors, low social giving, environmental neglect) and negative economic and social consequences (high indebtedness and low satisfaction from work and marriage). Even though materialism is not dependent upon affluence (Ger and Belk, 1996), it has been proven that levels of materialism are higher in poorer countries than in richer ones (Delhey, 2010; Moldes & Ku, 2020).

Focusing on Egypt, the most populous country in the MENA region and the second largest economy in Africa (IMF, 2024), there are several manifestations of high levels of materialism. As per the World Values Survey (WVS), which uses the post-materialism index of Inglehart (1971), Egyptians show extreme skewness towards wanting their government to focus on materialistic goals at the expense of post-materialistic ones. The survey was designed to show the level of consistency in choosing materialistic items at the expense of post-materialistic items in several groups of questions. Data from the latest World Values Survey in 2020 for 54 countries shows that Egypt is the top country in terms of the percentage of respondents who chose only materialistic national goals as a priority; Egypt (29.9%) is followed by Russia (21.0%), China (22.2%), Tajikistan (18.9%), Ethiopia (18.8%), Tunisia (18%), Jordan (17%), Taiwan (16.9%), Zimbabwe (14.7%), Myanmar (13.2%), Greece (13%), Hong Kong (12.6%), and Argentina (11.6%).

Data on personal materialism – linking materialism to one's personal view and practice of life – in Egypt is rarely found. However, there are manifestations of high levels of materialism in the Egyptian society, such as the belief that material possessions represent success and self-fulfillment (Adib & El-Bassiouny, 2012), the high level of consumerism (Abaza, 2001; Abaza, 2006; El-Bassiouny et al., 2011; Zayed, 2019), and the high level of social hatred and the rupture of social ties (Okasha et al., 2009). In addition, spiritual and religious dimensions are receding (Arab Barometer, 2019) in favor of the idea of physical satisfaction, and happiness is becoming highly linked with material consumption, as cited in Adib and El-Bassiouny (2012).

Especially for youth, who constitute around 21% of the total Egyptian population, levels of materialism are getting higher. Unnecessary personal needs are turning into indispensable necessities, and the aim of consumption is becoming more for the fulfillment of social and psychological needs (El Din & El Sahn, 2013). In Egypt, material prestige is expressed through a package of expensive goods and services, an actual or fake luxurious lifestyle, and special entertainment venues, for instance, in food (Ammar et al., 2016; Dawoud, 2014) and clothing (Talaat, 2020; Ahmed, 2018). Add to that, religious holidays are becoming of less importance to focus on spiritual and human implications, but shifted to an occasion for extra consumption of unnecessary items; for instance, consumption in Ramadan, a month of fasting to teach patience and asceticism, nearly doubles, according to the Internal Trade Development Authority ITDA (2020). While the reasons behind this phenomenon vary, access to technology leading to continuous social comparisons is a major recent induction that caused many to financially exhaust themselves. Connections between material acquisition, and happiness and success are forming at the expense of personal mental health and family duties (Henry & Elwy, 2020).

This study focuses on Egyptian youth as a research object for several reasons. First, Egypt is a non-WEIRD (Western, Educated, Industrialized, Rich, Democratic) context, and much of the existing literature on materialism has been concentrated in WEIRD societies, leaving a gap in understanding

the phenomenon in culturally distinct settings. Second, Egyptian youth are particularly vulnerable to the effects of materialism due to the rapid socio-economic transformations, increased exposure to globalized media, and heightened societal pressures to conform to materialistic ideals. Third, young people represent a critical demographic for shaping future consumption patterns, social attitudes, and cultural norms, making them an essential group for targeted interventions aimed at reducing materialism. Lastly, focusing on youth is especially important given their role in driving societal change; their attitudes and behaviors can have long-lasting implications on economic stability, social cohesion, and cultural values.

This study uses data collection methods to explore personal materialism and imply behavioral interventions through an experiment aimed at testing interventions that can play a role in reducing the level of personal materialism among youth. The hypothesis of this study is that the interventions used, which will mainly focus on priming youth with spiritual and pro-social values and boosting their self-esteem and sense of security, will reduce the level of materialism. These hypotheses are derived from behavioral economics and the nudge theory, and the results are aimed to help formulate behaviorally-informed policies to reduce materialism in Egypt.

The paper is divided into six sections. Following this introduction, the paper presents a literature review, followed by a section for data analysis, and a section presenting the results. The paper then provides a section discussing the results, and a section for conclusions.

2. Literature review

The concept of materialism

Theories of materialism define materialism as a failure to meet a psychological need of a higher order, such as a healthy relationship or a healthy view of oneself (Kasser 2002; Kasser and Ryan 1993; Wong et al., 2003). Thus, purchasing a high-status object is a way of compensation that people with feelings of professional or personal inadequacies use (Sivanathan & Pettit, 2010; Rucker & Galinsky, 2008). The definition of insecurity is that it is a state of being open to danger or threat and a feeling of inadequacy and uncertainty. Having an insecurity pushes people to try to fill it with material objects that cannot replace love or affection, emotional support, or empathy (Burroughs and Rindfleisch 2002; Kasser 2002). As a result, people often find themselves isolated and unhappy (Kasser 2002; Richins and Dawson 1992). Theories of basic needs - the need from which all other needs stem - are many. However, the self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000), the acquired needs theory (McClelland, 1987), and Maslow's needs hierarchy (Maslow, 1970) are the three most relevant to the study of materialism. All three theories have one idea in common: there is a set of core needs in every human being. If they are not met, insecurity emerges. These needs can be classified into physical and economic security, self-needs, and social needs. In terror management theory (Arndt et al., 2004; Rindfleisch et al., 2009), researchers added existential needs and spirituality. The 'Crowding out' Theory of Kasser (2002) explains how materialistic people focus their energies and interest on getting material objects at the expense of (crowding out) satisfying healthy needs, which deepens the insecurity by creating a vicious cycle that causes subjective well-being and happiness to

diminish. Building on that, in order to reduce materialism, interventions should focus on countering these psychological insecurities and fulfilling these needs.

Consequences of materialism

Regarding social consequences, the primary consequence of materialism is that it fails to create real happiness or satisfaction. The endless pursuit of material matters is similar to drug addiction (Slater, 1980). Similar to drugs, individuals often find themselves in need of larger doses and more frequent consumption to maintain the false temporary mood lifting (Schudson, 1984), keeping people in a trap such that happiness becomes, in the end, unattainable (Brickman & Campbell, 1971). Materialism has a significant negative correlation with satisfaction in many life domains (Roberts & Clement, 2007). Specifically, there is a negative robust relationship between materialism and subjective well-being (Dittmar et al. 2014). Using different ways to measure materialism, it is constantly found to have a negative relationship with wellbeing (Puente-Díaz & Cavazos-Arroyo, 2019); materialism measured as a trait (Ahuvia & Wong, 2002; Belk, 1984; 1985; Dawson, 1988); materialism measured as a personal value (Burroughs & Rindfleisch, 2002; Richins & Dawson, 1992; Shrum et al., 2011; Sirgy et al., 2012); and materialism measured as extrinsic goal attainment (Sheldon & Kasser, 1995, 1998; Kasser, 2002). It appears that merely priming thoughts about luxury, for example, just by having people view luxury products, seems to cause people to be less happy (Shrum et al., 2022).

In addition, measuring materialism as a trait was found to be positively associated with experiences that are considered depressive, such as dependency or harsh self-criticism (Wachtel & Blatt, 1990) and with social anxiety (Schroeder & Dugal, 1995). When measured as a personal value, it was also found to be positively associated with neuroticism (Burroughs & Rindfleisch, 2002; Mick, 1996), with depression, anxiety, and high levels of stress (Burroughs & Rindfleisch, 2002). Materialism as an extrinsic goal pursuit also correlates positively with a host of problems, including negative affectivity (Kasser et al., 2014), depression (Kasser & Ryan, 1993, 1996; Yamaguchi & Halberstadt, 2012), and anxiety (Kasser et al., 2014). Pieters (2013) concluded that loneliness promotes materialism, which in turn contributes to greater loneliness.

Moreover, LeBaron et al. (2018) found that materialism was negatively associated with perceptions of marriage's importance and was associated with lower marital satisfaction. Carroll et al. (2011) found that married couples who are high in the degree of materialism have significantly lower quality marriages when compared to married couples who are both low in the degree of materialism or when compared to couples with different degrees of materialism. King & Datu (2017) showed that materialistic students have lower motivation, engagement, and achievement. In addition, highly materialistic children and adolescents perform poorer at school (Goldberg et al., 2003), and are more likely to use tobacco or marijuana (Williams et al., 2000). They are also more likely to adopt unethical thoughts and beliefs, in addition to behaviors, compared to their peers with lower degrees of materialism (Gentina et al., 2018a, 2018b). A study conducted on children by Chan (2004) showed that children perceive possessions as something that brings fun and friends, but also selfishness, arrogance, and envy.

Highly materialist people are more likely to consider themselves spenders; they are more

likely to spend rather than save; and they are more likely to borrow (Watson, 2003; Maison & Adamczyk, 2020). Even with equal income levels, Brown et al. (2016) found that high materialists made more frequent purchases, spent more on their purchases, and had higher levels of “letdown” after spending compared to lower materialists. Materialism predicts a person's likelihood of incurring consumer debt (Ponchio & Aranha, 2008); additionally, personal debt and account balances were found to be positively associated with materialism (Nepomuceno & Laroche, 2015). De Matos et al. (2019) found that materialism has a significant effect on consumer indebtedness, in which higher impulsiveness triggers materialism and influences debt levels. Dittmar (2005) and Ridgway et al. (2008) found a positive correlation between materialism and compulsive buying. Mueller et al. (2011) found that materialism and depression jointly influence compulsive buying, and Donnelly et al. (2013) also found that materialism correlates positively with compulsive buying and that a lack of money management is a mediator between materialism and compulsive buying. Gararsdóttir & Dittmar (2012) showed that people who have higher materialistic values have greater financial worries, worse skills in money management, and a greater inclination towards compulsive buying and spending. As for the consequences in the labour market, Deckop et al. (2010) found that materialistic values are negatively associated with multiple indicators of personal well-being, such as job satisfaction, career satisfaction, and reward satisfaction. In line with this, Unanue et al. (2017) found that materialism at work is negatively associated with work satisfaction and engagement and more positively with turnover intentions and burnout.

On the environmental consequences, Kilbourne & Pickett (2008) and Kasser (2018) found that materialism is negatively associated with pro-social and pro-environmental attitudes and wellbeing. Research also suggests that materialism is associated with greater environmental neglect. Materialistic individuals consider the protection of natural environments as a low priority (Clump et al., 2002; Kilbourne & Pickett, 2008) and are more likely to consume a higher amount of natural resources (Winter, 2004).

Experimental studies

Studies have used experimental tools to understand what induces or dampens materialistic values and behaviors. Studies that explain what induces materialism have concluded that threatening self-esteem (Chang & Arkin, 2002) or threatening personal power (Rucker & Galinsky, 2008; Rustagi et al., 2016) promotes materialism and the desire for luxury and status goods and the willingness to pay more for them (Sivanathan & Pettit, 2010), and increases consumption in general (Lee & Shrum, 2012; Lee et al., 2017; Rucker & Galinsky, 2009). Boosting self-esteem, on the other hand, decreases materialism (Chaplin & John, 2007; Park & John, 2011), especially in self-threatening situations (Yang et al., 2021). Similar to that, when people's feelings towards the meaning of life were threatened by reminding them of their death (Mandel & Heine, 1999; Kasser & Sheldon, 2000) or by making them feel ignored (Lee & Shrum, 2012; Lee et al., 2017), people showed higher signs of greediness, a higher desire to purchase luxury products, and higher logos. In addition, threatening people's feelings of belonging increases loneliness, which is compensated for through spending on other people (Pieters, 2013). Also, social exclusions have been found to increase preferences for nostalgic products (Loveland et al., 2010), spending on partners (Mead et al., 2011), and on charity

(Lee & Shrum, 2012; Lee et al., 2017). Materialistic concerns, when activated, cause disturbances in psycho-social mechanisms that are vital for building healthy social ties; trust in other people; desire to engage socially; and feelings of responsibility (Bauer et al., 2012). Lens et al. (2010), through experiments, showed that advertisements induce materialism, especially among individuals who can afford the advertised product. In addition, the study showed that richer individuals have fewer problems associated with materialism as they have higher self-esteem. Interestingly, when consumers imagined themselves already purchasing the products, the advertisement had no impact. Sayah (2024), found that advertising negatively impacts children from lower social classes, leading to lower self-satisfaction, lower self-esteem and higher materialistic tendencies. However, the impact of materialism was found to be stronger amongst the wealthier sample included. Zhao et al. (2023), using a sample from Lebanon, found that lower self-esteem, anxious attachment and poorer quality of family relationships predicted higher levels of materialism, with self-esteem showing the strongest association. Similarly, using a sample from UK, children from deprived backgrounds were found to be more materialistic than wealthier ones (Nairn & Oprea, 2021). Similarly, Trzcińska et al. (2024) found that materialism in preschool children is influenced by self-esteem.

Studies have also tackled interventions aimed at decreasing materialism. Materialistic goal orientation can decrease if individuals are encouraged to set intrinsic goals and keep reflecting on self-transcendence values (Parker et al., 2020). Lekavičienė et al. (2022) demonstrated that emotional intelligence training effectively reduces consumer materialism. Studies show that materialism can decrease when interventions that incorporate inward reflections or incentivize intrinsic values are used, or when interventions that lead individuals to rethink and analyse the “consumer culture” or detach from it are used (Kasser, 2018). Results from short-term experiments (Dechesne et al., 2003; Weinstein et al., 2009; Fritzsche et al., 2010; Stillman et al., 2012) have found that spiritual, pro-environmental, and/or pro-social values can help decrease materialism. Lekes et al. (2012) sent multi-week emails to the intervention group reminding them to reflect their intrinsic values. The study found that participants decreased in materialism and increased in wellbeing. In what the authors called a “diminishing of desire,” Joye et al. (2020) found that exposure to nature compared to urban environments weakened materialism. Sheldon et al. (2003) found that when people are allowed to reflect inwardly by pausing and thinking, they reconsider their values and place higher importance on intrinsic ones. In addition, mindfulness is a type of inward reflection that decreases materialism (Brown & Kasser, 2005). It boosts satisfaction with financial situations and well-being (Brown et al., 2009). Moreover, mindfulness is a therapeutic technique that has been used to impact materialism. Mindfulness is a state of mind of acceptance, which is the acceptance of experiences and emotions. Some research has found that deep, continuously inward reflections on death can reduce materialism (Cozzolino et al., 2004; Lykins et al., 2007), particularly among people who are more open to new experiences (Prentice et al., 2017).

In a similar vein, gratitude as an affective trait, mood, or emotion has been linked to lower materialism in a number of studies. It is considered an affective trait that, in general, lowers one’s probability of experiencing negative emotions (Rosenberg, 1998). Feelings of gratitude entail a recognition of having a positive outcome and that an external agent is responsible for it. Feelings of gratitude are implicitly prosocial, as they entail a recognition of other people’s actions and kindness

in making one's life better and may encourage similar behaviours in return (Bertocci & Millard, 1963; McCullough et al., 2001). That is why it is sometimes called the "empathic emotion" (Lazarus & Lazarus, 1994). Gratitude reflections cause people to de-prioritize materialistic values (Lambert et al., 2009). Saleem et al. (2022) found that gratitude positively impacts subjective well-being among youth, but this relationship is moderated by materialism, with higher levels of materialism weakening the positive effects of gratitude. Lee et al. (2022) found that gratitude reduces materialism through decreased entitlement and enhanced perceived resources. In their study, Chaplin et al. (2019) showed that there is a negative association between gratitude and materialism in children and adolescents, and that keeping a gratitude journal reduces materialism and also eases its negative effect on generosity; participants who were exposed to the intervention donated 60% more. Similarly, Unanue et al. (2021) found that gratitude at work prospectively reduces workplace materialism. Polak & McCullough (2006) discussed how materialistic strivings are lower in people who are grateful because, usually, grateful people are more complete and more secure. In addition, evidence shows that gratitude is negatively associated with envy and with materialistic behaviours and positively with spirituality and pro-social attitudes (McCullough et al., 2002). This is all because gratitude is a positive emotion (Mayer et al., 1991; Ortony et al., 1990; Weiner, 1986) and is associated with higher wellbeing (Emmons & McCullough, 2003; Watkins et al., 2003).

From another perspective, Kasser et al.'s (2014) study showed that adolescents decreased in materialism and increased in self-esteem when they, and their parents, received sessions to help them create a spending plan that is based on values and were encouraged to question the consumer culture around them. Buijzen (2007) and Buijzen and Valkenburg (2005) also showed that children's levels of materialism decline when their parents explain and criticise advertising intentions.

Policy interventions

Many governmental attempts have been made to combat materialism levels mainly through campaigns such as the "Buy Nothing Day" in Sweden, Finland, the UK, and North America, and the "International Downshifting Week" and the "Turn Off Your TV Week". In many countries, governments and banks have given more attention to financial literacy programmes and credit counselling to rationalise consumer spending, in addition to passing the necessary laws to discourage materialism. Levying taxes on excess consumption or on luxury and status goods that have an impact on income distribution, as cited by Bagwell and Bernheim (1996), was one of the failed trials. The failure of this policy and similar policies is due to the lack of understanding of the behavioral analysis of materialism. Policies that do not target fulfilling the original insecurity that has caused the high level of materialism fail against the massive effort exerted by companies seeking profits (Burroughs et al., 2013). Levitt and Dubner (2005) criticise tax levying on status goods because taxes give people a "moral license" to consume, as they believe they have already paid more, so they deserve to continue in their behavior. Moreover, combating materialism through narrowing the wealth gap may also be ineffective, as it triggers competition and encourages people to link their worth to what they acquire (Ordabayeva & Chandon, 2011). It is also worth noting that encouraging charitable behavior as a policy doesn't necessarily reduce materialism, as charitable behavior can

co-exist with materialism (Thibaut & Kelley, 1959; Homans, 1958; Emerson, 1976; Pitts & Skelly 1984; Mathur, 1996; Clary et al., 1998; Park & John, 2010; Mathur, 2013; Bock, 2018).

However, there are several policies that are considered effective, such as increasing parental time with children and limiting children's exposure to advertising and marketing (Burroughs et al., 2013). As for increasing parental time, Danish companies are positive examples as they have some of the most family-friendly work policies in the world; Denmark has 34 days of paid vacation and holiday leave per year compared to the United States, which gives only 10 days (www.mercer.com). Similarly, Denmark has an average of 52 paid weeks of parental leave compared to 24 weeks in the US (<http://www.cepr.net>).

As for children's exposure to advertising and marketing offers, Kasser & Linn (2016) believe that the most effective policy would be for governments to prohibit all marketing and advertising aimed at children, which is a policy adopted by Quebec (a Canadian province) and some few countries such as Norway, Sweden, and Brazil. However, Burroughs et al. (2013) believe that it may not be realistic to completely prohibit marketing and advertising to children, but it can be regulated. For example, issuing legal acts that require companies to disclose the existence of any marketing or advertising in television programmes or movies or video games and all other media platforms presented to children (The US Children's Television Act of 1990 even prohibits the incorporation of products in any scenes or animated characters) or eliminating incentives or imposing taxes on companies that create marketing materials for children. Kasser and Linn (2016) advocate for the restriction of promotional messages in physical places frequented by children; there are some existing acts that require advertising of unhealthy products, such as alcohol and cigarettes, to be placed a certain distance away from schools; and France, Brazil, Vermont (a state in the United States), Grenoble, and Sao Paolo have significantly limited outdoor advertising.

3. Data analysis

Hypotheses

On many occasions, neglecting the behavioral insights can cause the public policy to fail (Hansen & Jespersen, 2013). This happens because, from the behavioral economics view, the process of decision making sometimes leads individuals to fail in acting on their own well-informed self-interest, or society's general interests (Thaler et al., 2013). This issue has been addressed by Richard Thaler, a Nobel Prize winner in economics, who introduced the "Nudge Theory." The theory uses human beings' stereotypes, biases, and errors as a tool to implicitly alter their behaviour (Dolan et al., 2010). It explains that positive nudges to the environment around individuals can effectively influence their behaviour and decision-making through cost-effective and behaviorally informed policies. Thaler defines a "nudge" as "any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler & Sunstein, 2008, p. 6). In his proposition, policy makers can become choice architects, "A choice architect has the responsibility for organising the context in which people make decisions" (Thaler & Sunstein, 2008, p. 3).

Theories of materialism define materialism as a failure to meet a psychological need of a higher order, such as a healthy relationship or a healthy view of oneself (Kasser 2002; Kasser and Ryan 1993; Wong et al., 2003). The unfulfilled need creates a sense of insecurity that people try to fill with material objects that cannot replace love or affection, emotional support, or empathy, which fulfil their basic needs (Burroughs and Rindfleisch 2002; Kasser 2002). As a result, people often find themselves isolated and unhappy (Kasser 2002; Richins and Dawson 1992). Building on that, in order to reduce materialism, interventions should focus on countering these psychological insecurities and fulfilling these needs. The choice of interventions is based on the literature review of previous experiments used to discourage materialism. Interventions tested are going to be helpful in suggesting the formulation of targeted policies or encouraging the activation of existing ones in order to raise awareness and/or fight against materialism.

Building on the empirical and theoretical frameworks, this thesis sets the following hypotheses:

H0: Exposure to the intervention does not reduce personal materialism.

H1: Exposure to intervention 1, boosting self-esteem, reduces the level of personal materialism.

H2: Exposure to intervention 2, exercising gratitude, reduces the level of personal materialism.

H3: Exposure to intervention 3, stimulating empathy, reduces the level of personal materialism.

Data collection

Scholars have relied on surveys to measure materialism correctly. Belk (1984) and Dawson (1992) were the early researchers who designed fundamental surveys to measure materialism. Belk's (1984) questionnaire measures materialism based on the existence of three personality traits: non-generosity, envy, and possessiveness. However, Richins and Dawson's (1992), also known as the material values scale (MVS), measure materialism by looking at the extent to which people think that (i) material goods cause happiness, (ii) material goods are a central part of life, and (iii) possessions and success are related, see table 1. Richins and Dawson's (1992) survey is utilized in this study. The data collection procedures are presented in Table 2.

This study uses a survey experiment to identify incentives that can have an impact on personal materialism among youth. The study uses online random selection from various online social media groups. The survey has 18 items covering three major dimensions: success, centrality, and happiness. The items are scored on a 5-point Likert scale from strongly agree to strongly disagree, which are summed within each component and re-summed to form an overall score. All collected observations were appropriately coded. Some items had to be recorded as negative values to correctly sum the overall score of materialism. Using Google Forms, links were sent online, randomly assigning people to control and different intervention groups. Targeted respondents are 18 to 29 years old males and females, who have at least completed high school, and Egyptians residing in any Egyptian governorate. The reason behind the choice of the sample is the fact that young people's relationships with money, possessions, and physical aspects of life are likely to persist when they get older (Borg et al., 2017). Concepts and perceptions developed in the early stages of life

only practically manifest and become tested when individuals start being financially independent by the age of 18. Youths between the ages of 18 and 29 are expected to take full or partial control of their finances and develop a spending pattern that cannot be easily changed later in life (Krosnick & Alwin, 1989; Milfont et al., 2016).

Table 1. Richins and Dawson's Survey of Personal Materialism (1992) **,*

Success	Centrality	Happiness
1. I admire people who own expensive homes, cars, and clothes.	1. I usually buy only the things I need.	1. I have all the things I really need to enjoy life.
2. Some of the most important achievements in life include acquiring material possessions.	2. I try to keep my life simple, as far as possessions are concerned.	2. My life would be better if I owned certain things I don't have.
3. I don't place much emphasis on the amount of material objects people own as a sign of success.	3. The things I own aren't all that important to me.	3. I wouldn't be any happier if I owned nicer things.
4. The things I own say a lot about how well I'm doing in life.	4. I enjoy spending money on things that aren't practical.	4. I'd be happier if I could afford to buy more things.
5. I like to own things that impress people.	5. Buying things gives me a lot of pleasure.	5. It sometimes bothers me quite a bit that I can't afford to buy all the things I'd like.
6. I don't pay much attention to the material objects other people own.	6. I like a lot of luxury in my life.	
	7. I put less emphasis on material things than most people I know.	

*The non-bold items range from 1 to 5 and the bold items are negative items ranging from -1 to -5.

**Highest materialism score possible is 48, and lowest materialism score possible is -24.

**from -24 to 0 is considered low materialism, 1 to 24 is medium, and 25 to 48 is high.

Table 2. Data collection procedures

1. Translate Richins and Dawson's Survey into Arabic			
2. Create four google forms that have Sections A, B, and C as follows:			
Form 1 Section A (control):	Form 2 Section A (others):	Form 3 Section A (surroundings):	Form 4 Section A (oneself):
Not applied	Task: view images with written messages on them that activate empathy (specifically wanting to help) and prosocial feelings and answer questions about how it made them feel	Task: write down 10 brief sentences about people/agencies/God they feel grateful for	Task: rewrite 10 scrambled sentences that have deep meanings about one's self value
Section B: Translated Richins and Dawson's questionnaire	Section B: Translated Richins and Dawson's questionnaire	Section B: Translated Richins and Dawson's questionnaire	Section B: Translated Richins and Dawson's questionnaire
Section C: Demographic questionnaire	Section C: Demographic questionnaire	Section C: Demographic questionnaire	Section C: Demographic questionnaire
3. Send to participants			

The e-links of the four survey experiments were sent directly on social media channels such as, WhatsApp and Facebook (after getting the permission from the group admins). These groups were chosen based on the targeted age group. Examples include but are not limited to: groups dedicated to finding jobs for fresh graduates, student unions, graduate studies, youth volunteering, youth sports, etc. In order to avoid a subject accessing more than one group, respondents were asked to enter their phone number on the first link that they choose, the same phone number is not accepted again in any of the other links. Once one survey of the four is filled with 74 respondents, it can no longer accept more participants

Experimental methods in the field of economics have been widely used over the past few decades. These methods give researchers an opportunity to quantify what was previously considered unquantifiable. In its traditional form, an experiment would be conducted by gathering participants in a room and exposing them to a stimulus. Nowadays, these experiments can be conducted in a computer laboratory. The main aim of an experiment is to find causation rather than correlation. The causation is found by assigning two different groups, one group being a control group that does not receive any intervention, and the other being a treatment group that receives the designed intervention. The outcomes of the two groups are expected to differ only with respect to the explanatory values of the experiment; the controlled variation of one variable while keeping the other environmental conditions fixed.

Survey experiments are one of the experimental methods widely used in economics. They are cost-effective, easier to conduct, and cover bigger sample sizes as they do not require in-person contact to be implemented (Hainmueller et al., 2014). There are several types of survey experiments. This study uses the priming survey experiment, which is an experiment that is conducted within a survey used to collect sensitive information. (Druckman et al., 2011). This research uses the between-subjects design, in which there are no before and after estimations. The target of this tool is to compare two groups of participants; one group to which an intervention is administered (for example, exposed to a stimulus) and the other group that receives no intervention.

A behavioral experiment does not need to be generalised to represent samples of the population. Instead, scholars of experimental economics replicated their experiments on other samples. The results of randomised control trials have a high level of internal validity, achieved through randomization of the sample. Internal validity is the extent to which a study establishes a trustworthy cause-and-effect relationship between a treatment and an outcome. Whereas regression models find correlations, randomization of an experiment ensures finding clean casualties. Randomization ensures no dependence between the assignment in the intervention group and the characteristics of the subjects. However, a balance test should be used before conducting the analysis. The baseline balance test ensures that allocation of subjects to intervention or control groups is left purely to chance; in other words, that the groups are similar to each other. Individuals are randomly assigned to both the control and treatment groups.

While materialism is not a very sensitive topic compared to other sensitive topics such as racism or illegal practices, many sensitive topics appear so sensitive that the study subjects' conscious and explicit behaviour may be different from what they implicitly hold inside (Greenwald & Banaji, 1995). In many cases, certain topics are considered beyond the subject's conscious awareness, even if they are not considered sensitive (Nisbett & Wilson, 1977). Priming experiments

work by guiding the conscious mind away from topic A and towards topic B so that subjects unconsciously change their minds about topic A (Macrae et al., 1994; Schwarz & Clore, 1983).

The three interventions employed focus on three basic dimensions: others, surroundings, and oneself. The first dimension, "others," is tested by exposing participants to prosocial and public service advertising before taking the survey. Prosocial advertising is aimed at achieving a specific goal that benefits society. Advertising should not be about raising money; it should incentivize empathy among the respondents. For example, an image of people in rural areas who need volunteers to help them read and write, or people with disabilities who need physical help to move around the city. Drążkowski and Trepanowski (2022) found that practicing acts of kindness significantly reduces materialism over time. Chao (2019) studied the impact of advertising in China. The study concluded that public service advertising does moderate the relationship between viewing television and the level of materialism. Researchers use videos as an effective tool for eliciting emotions. Some videos commonly used are some movie or television scenes. Usually, a clip is watched and then participants answer a few questions about how informative and interesting it was. Video techniques are generally well received by people. It is also beneficial as participants don't know what the hidden message is or what they are going to watch. It is very important to ask the participants whether they have seen the video before, because if they have, the effect will be dampened. Advertising can also take the form of multiple nonmoving images. Similar to videos, this tool has been used by researchers to activate certain emotions. Commonly, it is used with a cover story. In this study, only three images are included with three messages; helping a senior, donating blood, and listening to a friend.

The second dimension, "surroundings," is tested through fostering gratitude. Several studies have linked gratitude scale results to materialism scale results. However, few of them have used direct interventions. Froh et al. (2011) conducted their study on youth, Lambert et al. (2009) and Chaplin et al. (2019), on children and adolescents. They all found that fostering gratitude reduces materialism. Participants in this study's intervention group write down at least 10 sentences about people or agencies or God or whoever they feel grateful for and why, then they take the survey. Writing tasks are effective ways to elicit emotions in human beings (Cohen et al., 2008). It can manipulate both basic and social emotions (Kardes et al., 2019). The writing lets participants recall certain experiences and also use their imagination.

The third dimension, "oneself," is tested by boosting self-worth. Participants of this group are given simple mixed words that should be rearranged to form several sentences. The sentences have deep meanings about one's self-value and worth (for example, I accept who I am: the good and the bad; I am alive and so I have worth; I'm human, not perfect; etc.). They then take the survey. The idea behind mixing the words is to make the participant write down these sentences, which stimulates the brain into believing in them, and it also gives a sense of achievement after correctly forming the sentence. In psychology, this technique is called "supraliminal goal activation" in which participants are exposed to a stimulus they are unaware of that is being used to influence their behaviour (Bargh & Chartrand, 2014). The scrambled sentence task – developed by Costin (1969) – is part of it and has long been used in research. This type of intervention has not been used before in boosting self-esteem in materialism studies. However, generally, several studies have concluded that lower feelings of insecurity are associated with lower levels of materialism. However, few studies have used interventions to boost self-esteem. All of these studies concluded that boosting implicit

subconscious self-esteem decreases materialism in adults (Chaplin & John, 2007; Park & John, 2011), and in adolescence (Kasser et al., 2014).

Each of these interventions focuses on different but complementary psychological mechanisms. Boosting self-esteem addresses internal self-worth (which reduces insecurities); practicing gratitude shifts focus from external material goods to the present moment (which reduces dissatisfaction with life) and relational values; and stimulating empathy focuses on social and relational connections (which reduces self-centeredness). These interventions could work in harmony through applicable governmental policies to shift youth away from materialistic pursuits toward more intrinsically rewarding goals and directly address core emotional and cognitive processes that fuel materialism.

Model specification

The aim of the study is to find the statistical significance of each intervention utilized on the overall score of personal materialism and each materialism score associated with each component of the survey. Using OLS, the dependent variable *Personal_Materialism_i* represents the score attained on the MVS scale, with higher scores representing higher levels of materialism. The independent variables are represented by three dummy variables corresponding to the three experimental treatments, and the control group represents the omitted category. The *self-esteem*, *gratitude*, and *empathy* variables represent the three utilized interventions as follows:

$$Personal_Materialism_i = \alpha_0 + \beta_0 NoIntervention_0 + \beta_1 self - esteem_1 + \beta_2 gratitude_2 + \beta_3 empathy_3 + \beta_4 X_4 \dots \beta_n X_n + \epsilon_i$$

where β_4 to β_n are the coefficients of the control variables collected at the end of each survey experiment through a post-experiment questionnaire. The three intervention groups would enter the equation as independent variables. An observation would take 1 in one treatment group and 0 otherwise. The study assumes a linear regression in the coefficients and the error term.

The model is applied assuming that the error term has a population mean of zero, the absence of heteroscedasticity, the absence of a correlation between the observations of the error term, and the absence of correlation between all independent variables and the error term.

4. Findings

Using Richins and Dawson's Survey (1992), data were collected from 296 participants (74 per group) over the course of 4 consecutive months from November 2023 to February 2024. Responses came from 25 different governorates across Egypt (no responses received from South Sinani, New Valley, and Suez). Sample descriptive statistics are presented in Table 3. Answers were reviewed per response and tasks were insured to be completed correctly. Observations failed to complete the task in each intervention group were dropped from the sample. Stata 17 software was used to conduct the statistical analysis.

Table 3. Sample definitions and descriptive statistics

Variable	Definition	Obs.	Mean	Std. Dev.	Min	Max
Materialism	Combined Score of rating survey items (strongly agree (5), agree (4), neutral (3), disagree (2), strongly disagree (1))	296	10.442	7.222	-10	33
Intervention_1_self-esteem	Completing the task (1), Not completing task (0)	296	0.25	0.433	0	1
Intervention_2_gratitude	Completing the task (1), Not completing task (0)	296	0.25	0.433	0	1
Intervention_3_empathy	Completing the task (1), Not completing task (0)	296	0.25	0.433	0	1
Control_group	No completed task (1), completed any task (0)	296	0.25	0.433	0	1
Age	From 18 to 29	296	21.331	2.651	18	29
Gender	Male (1), female (0)	296	0.537	0.499	0	1
Financial_satisfaction	Very satisfied (5), satisfied (4), neutral (3), not satisfied (2), not satisfied at all (1)	296	2.888	1.183	1	5
Life_satisfaction	Very satisfied (5), satisfied (4), neutral (3), not satisfied (2), not satisfied at all (1)	296	3.304	0.954	1	5
Income_5000_orless	Monthly income of 5000 or more (6), less than 5000 and more than 4000 (5), less than 4000 and more than 3000 (4), less than 3000 and more than 2000 (3), less than 2000 and more than 1000 (2), less than 1000 (1)	296	2.668	1.539	0	6
Education	Bachelor degree student (1), bachelor degree graduate (2), master's degree student (3), master's degree graduate (4), PhD student or more (5)	296	1.405	0.701	1	5
Employed	Employed (1), unemployed (0)	296	0.371	0.484	0	1
Urban_governorate	Belongs to an urban governorate (1), belong to a rural governorate (0)	296	0.594	0.491	0	1
Single	Being single (1), otherwise (0)	296	0.966	0.180	0	1
Living_area_class	Living in a high-class area (5), middle-class area (4), average area (3), lower than average area (2), common area (1)	296	1.783	0.772	1	4
Health	Excellent (5), very good (4), good (3), poor (2), very poor (1)	296	3.412	0.973	1	5
Success	The combined materialism score of only items related to the success part of the survey	296	4.070	3.136	-5	13
Centrality	The combined materialism score of only items related to the centrality part of the survey	296	-4.425	3.384	-12	5
Happiness	The combined materialism score of only items related to the happiness part of the survey	296	10.797	3.249	1	19

Table 3 provides sample definitions and descriptive statistics. As shown in the table, the mean score of materialism among youth surveyed across the different intervention and non-intervention groups is positive at 10.44, which indicates a medium score of materialism. The mean age of the sample is about 21 years old, and around 53% of the sample are males. Subjective scores of financial satisfaction showed a lower mean (2.8) than life satisfaction (3.3). The average income level is between 2000 and 3000, and the average level of education of the sample is a bachelor's degree. Only 37% of the sample are employed, 59% of the sample live in urban governorates, and 96% are single. The average participant either lives in a lower-than-average area or a common area, and reports a good or very good health status. Materialism scores for each component of the survey vary greatly. The average in the success component is 4, the centrality component is - 4.4, and the happiness component is 10.7.

Table 4 shows the difference in means of materialism scores between interventions and control groups. The highest average mean score is amongst the control group (11.9) followed by intervention number 2 related to fostering gratitude (10.6), followed by intervention number 1 related to incentivizing higher self-esteem (10.2), followed by the lowest intervention related to incentivizing empathy towards others (8.8).

Table 4. Materialism descriptive statistics per group

Variable	Obs	Mean	Std. Dev.	Min	Max
Intervention_1_self-esteem	74	10.2973	7.679772	-9	33
Intervention_2_gratitude	74	10.63514	6.4523	-3	28
Intervention_3_empathy	74	8.851351	7.325471	-10	25
Control_group	74	11.98649	7.173951	-5	28

Table 5. Variance inflation factors of all variables

Variable	VIF	1/VIF
Age	2.54	0.394
Education	2.34	0.428
Intervention_3_empathy	1.68	0.595
Intervention_1_self-esteem	1.59	0.630
Financial_satisfaction	1.57	0.636
Intervention_2_gratitude	1.54	0.649
Employed	1.50	0.664
Life_satisfaction	1.45	0.691
Single	1.34	0.746
Gender	1.30	0.770
Living_area_class	1.23	0.812
Health	1.21	0.828
Income_5000_orless	1.15	0.867
Urban_governorate	1.13	0.882

Balance tests (randomization tests) were conducted prior to performing regression analysis. To compare groups across continuous and ordinal variables, the Kruskal-Wallis equality-of-populations rank test (the non-parametric alternative to ANOVA) was used. P-values for these variables were: Age (0.8419), Education (.8144), Income_5000_orless (0.1541), Life_satisfaction (0.7372), Financial_satisfaction (0.6765), Health (0.1250), and Living_area_class (.0524). For dummy variables, a chi-square test was performed. P-values for these variables were: Gender (0.924), Employed (0.119), Urban_governorate (0.718), and Single (0.937). These results confirm that our randomization was successful.

Table 5 shows the variance inflation factors of all variables. According to the table there is no evidence of multicollinearity.

Tables 6, 7, 8, and 9 present the OLS regression results. Table 6 displays the impact of the applied interventions on the total materialism score. According to the table, the interventions self-esteem and empathy show a significant negative impact on materialism at $p < .05$ and $p < .01$, respectively. Similarly, table 6 shows the negative significance of the same interventions of self-esteem and empathy on the score of the centrality component of the survey at $p < .10$ and $p < .01$, respectively. However, from table 7, the three interventions, self-esteem, gratitude, and empathy all showed a significant negative impact at $p < .10$, $p < 0.01$, and $p < .01$, respectively, on the score of the success components of the survey. Table 9 shows no evidence of the impact of any of the interventions on the materialism score of the happiness component of the survey.

Behaviorally-informed policies to reduce materialism

Table 6. OLS regression output for the impact of the interventions on the total score of materialism.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intervention_1_self-esteem	-0.194 (1.009)	-0.122 (1.079)	-1.689 (1.222)	-1.689 (1.222)	-1.698 (1.221)	-1.594 (1.218)	-1.693 (1.185)	-1.957* (1.149)
Intervention_2_gratitude		0.216 (0.965)	-1.351 (1.122)	-1.351 (1.122)	-1.343 (1.125)	-1.331 (1.122)	-1.289 (1.090)	-1.524 (1.065)
Intervention_3_empathy			-3.135*** (1.192)	-3.135*** (1.192)	-3.136*** (1.194)	-3.113*** (1.189)	-3.145*** (1.167)	-3.544*** (1.124)
i.control_group				-	-	-	-	-
Age					-0.066 (0.162)	3.094 (2.100)	3.23 (2.050)	3.964** (1.917)
Age_square						-0.069 (0.0457)	-0.074* (0.0446)	-0.093** (0.0419)
Gender							2.378*** (0.834)	2.232*** (0.795)
Financial_satisfaction								-1.879*** (0.375)
Life_satisfaction								
Income_5000orless								
Education								
Employed								
Urban_governorate								
Single								
Living_area_class								
Health								
Constant	10.49*** (0.476)	10.42*** (0.609)	11.99*** (0.834)	11.99*** (0.834)	13.40*** (3.661)	-21.97 (23.85)	-23.98 (23.31)	-25.02 (21.80)
Obs.	296	296	296	296	296	296	296	296
R-squared	0	0	0.024	0.024	0.025	0.033	0.059	0.15

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 6 (cont.). OLS regression output for the impact of the interventions on the total score of materialism.

	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Intervention_1_self-esteem	-1.814 (1.148)	-2.100* (1.132)	-2.191* (1.133)	-2.375** (1.135)	-2.386** (1.135)	-2.430** (1.140)	-2.283** (1.130)	-2.298** (1.133)
Intervention_2_gratitude	-1.524 (1.060)	-1.53 (1.063)	-1.605 (1.068)	-1.63 (1.067)	-1.651 (1.066)	-1.641 (1.068)	-1.496 (1.078)	-1.675 (1.085)
Intervention_3_empathy	-3.533*** (1.132)	-3.511*** (1.130)	-3.686*** (1.132)	-3.887*** (1.144)	-3.892*** (1.146)	-3.927*** (1.146)	-3.650*** (1.155)	-3.729*** (1.180)
i.control_group	-	-	-	-	-	-	-	-
Age	4.145** (1.879)	3.891** (1.832)	3.899** (1.813)	4.196** (1.804)	4.184** (1.802)	4.534** (1.812)	4.443** (1.815)	4.460** (1.813)
Age_square	-0.096** (0.040)	-0.091** (0.039)	-0.095** (0.038)	-0.101*** (0.038)	-0.101*** (0.038)	-0.110*** (0.038)	-0.107*** (0.039)	-0.108*** (0.039)
Gender	2.173*** (0.799)	1.641** (0.801)	1.732** (0.813)	2.100** (0.848)	2.122** (0.848)	2.119** (0.849)	2.074** (0.853)	1.989** (0.873)
Financial_satisfaction	-1.549*** (0.435)	-1.667*** (0.428)	-1.635*** (0.429)	-1.591*** (0.430)	-1.593*** (0.430)	-1.549*** (0.439)	-1.617*** (0.438)	-1.648*** (0.432)
Life_satisfaction	-0.77 (0.501)	-0.712 (0.471)	-0.745 (0.475)	-0.77 (0.482)	-0.778 (0.481)	-0.825* (0.488)	-0.855* (0.487)	-0.872* (0.493)
Income_5000orless		0.381 (0.298)	0.374 (0.296)	0.467 (0.303)	0.459 (0.305)	0.458 (0.312)	0.390 (0.308)	0.396 (0.308)
Education			0.933 (0.816)	1.037 (0.821)	1.034 (0.823)	1.045 (0.828)	0.868 (0.850)	0.891 (0.856)
Employed				-1.268 (0.959)	-1.292 (0.958)	-1.376 (0.962)	-1.297 (0.956)	-1.226 (0.962)
Urban_governorate					0.276 (0.785)	0.269 (0.788)	0.020 (0.807)	0.009 (0.805)
Single						-2.294 (2.075)	-1.943 (2.055)	-2.009 (2.074)
Living_area_class							0.673 (0.558)	0.656 (0.565)
Health								0.182 (0.424)
Constant	-25.7 (21.46)	-24.27 (20.89)	-23.8 (20.77)	-27.68 (20.76)	-27.57 (20.74)	-28.81 (20.80)	-28.85 (20.78)	-29.36 (20.69)
Obs.	296	296	296	296	296	296	296	296
R-squared	0.157	0.187	0.19	0.195	0.196	0.198	0.203	0.203

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Behaviorally-informed policies to reduce materialism

Table 7. OLS regression output for the impact of the interventions on the total success component of the survey.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intervention_1_self-esteem	0.374 (-0.418)	0.196 (-0.446)	-0.703 (-0.508)	-0.703 (-0.508)	-0.702 (-0.509)	-0.64 (-0.504)	-0.664 (-0.498)	-0.741 (-0.487)
Intervention_2_gratitude		-0.534 (-0.441)	-1.432*** (-0.503)	-1.432*** (-0.503)	-1.433*** (-0.504)	-1.426*** (-0.501)	-1.416*** (-0.496)	-1.485*** (-0.494)
Intervention_3_empathy			-1.797*** (-0.504)	-1.797*** (-0.504)	-1.797*** (-0.505)	-1.784*** (-0.504)	-1.791*** (-0.501)	-1.909*** (-0.492)
i.control_group				-	-	-	-	-
Age					0.005 (-0.064)	1.880** (-0.835)	1.912** (-0.826)	2.128*** (-0.790)
Age_square						-0.041** (-0.017)	-0.042** (-0.017)	-0.047*** (-0.016)
Gender							0.561 (-0.363)	0.517 (-0.356)
Financial_satisfaction								-0.554*** (-0.168)
Life_satisfaction								
Income_5000orless								
Education								
Employed								
Urban_governorate								
Single								
Living_area_class								
Health								
Constant	3.977*** (0.211)	4.155*** (0.262)	5.054*** (0.357)	5.054*** (0.357)	4.940*** (1.458)	-16.03 (9.745)	-16.51* (9.662)	-16.82* (9.319)
Observations	296	296	296	296	296	296	296	296
R-squared	0.003	0.008	0.049	0.049	0.049	0.064	0.072	0.114

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 7 (cont.). OLS regression output for the impact of the interventions on the total success component of the survey.

	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Intervention_1_self-esteem	-0.67 (0.491)	-0.755 (0.490)	-0.799 (0.492)	-0.876* (0.493)	-0.874* (0.495)	-0.899* (0.498)	-0.903* (0.501)	-0.927* (0.499)
Intervention_2_gratitude	-1.485*** (0.491)	-1.487*** (0.492)	-1.523*** (0.490)	-1.534*** (0.491)	-1.530*** (0.497)	-1.525*** (0.499)	-1.528*** (0.503)	-1.579*** (0.507)
Intervention_3_empathy	-1.903*** (0.493)	-1.897*** (0.494)	-1.982*** (0.497)	-2.066*** (0.503)	-2.065*** (0.504)	-2.085*** (0.501)	-2.092*** (0.519)	-2.219*** (0.529)
i.control_group	-	-	-	-	-	-	-	-
Age	2.219*** (0.785)	2.143*** (0.783)	2.147*** (0.788)	2.271*** (0.791)	2.272*** (0.790)	2.473*** (0.796)	2.475*** (0.797)	2.502*** (0.793)
Age_square	-0.049*** (0.016)	-0.048*** (0.016)	-0.050*** (0.016)	-0.052*** (0.016)	-0.052*** (0.016)	-0.057*** (0.016)	-0.057*** (0.016)	-0.058*** (0.016)
Gender	0.488 (0.355)	0.329 (0.360)	0.374 (0.357)	0.527 (0.382)	0.524 (0.386)	0.522 (0.385)	0.523 (0.385)	0.387 (0.395)
Financial_satisfaction	-0.389* (0.203)	-0.424** (0.201)	-0.409** (0.200)	-0.390** (0.198)	-0.390* (0.199)	-0.365* (0.202)	-0.363* (0.202)	-0.413** (0.200)
Life_satisfaction	-0.385 (0.240)	-0.368 (0.232)	-0.384* (0.232)	-0.395* (0.231)	-0.394* (0.232)	-0.420* (0.235)	-0.420* (0.235)	-0.446* (0.235)
Income_5000orless		0.274 (0.124)	0.277 (0.126)	0.297 (0.127)	0.298 (0.128)	0.334 (0.135)	0.334 (0.136)	0.337 (0.135)
Education			0.455 (0.307)	0.498 (0.313)	0.499 (0.313)	0.505 (0.315)	0.509 (0.324)	0.547* (0.325)
Employed				-0.527 (0.415)	-0.524 (0.419)	-0.572 (0.418)	-0.574 (0.417)	-0.459 (0.421)
Urban_governorate					-0.0391 (0.367)	-0.043 (0.368)	-0.0366 (0.376)	-0.0544 (0.372)
Single						-1.31 (0.894)	-1.319 (0.912)	-1.427 (0.925)
Living_area_class							-0.0173 (0.235)	-0.0449 (0.237)
Health								0.293 (0.205)
Constant	-17.16* (9.194)	-16.73* (9.156)	-16.50* (9.211)	-18.11* (9.255)	-18.13* (9.255)	-18.84** (9.227)	-18.83** (9.239)	-19.66** (9.229)
Observations	296	296	296	296	296	296	296	296
R-squared	0.123	0.137	0.142	0.147	0.147	0.151	0.151	0.158

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Behaviorally-informed policies to reduce materialism

Table 8. OLS regression output for the impact of the interventions on the total centrality component of the survey.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intervention_1_self-esteem	-0.135 (0.464)	-0.0608 (0.496)	-0.865 (0.588)	-0.865 (0.588)	-0.873 (0.585)	-0.853 (0.586)	-0.875 (0.579)	-0.924 (0.577)
Intervention_2_gratitude		0.223 (0.462)	-0.581 (0.559)	-0.581 (0.559)	-0.574 (0.561)	-0.571 (0.561)	-0.562 (0.559)	-0.605 (0.557)
Intervention_3_empathy			-1.608*** (0.555)	-1.608*** (0.555)	-1.609*** (0.557)	-1.605*** (0.557)	-1.612*** (0.555)	-1.685*** (0.554)
i.control_group				-	-	-	-	-
Age					-0.0612 (0.0794)	0.541 (1.055)	0.571 (1.052)	0.706 (1.029)
Age_square						-0.0132 (0.0233)	-0.0143 (0.0233)	-0.0178 (0.0228)
Gender							0.528 (0.388)	0.501 (0.385)
Financial_satisfaction								-0.344* (0.181)
Life_satisfaction								
Income_5000orless								
Education								
Employed								
Urban_governorate								
Single								
Living_area_class								
Health								
Constant	-4.392*** (0.225)	-4.466*** (0.285)	-3.662*** (0.423)	-3.662*** (0.423)	-2.356 (1.777)	-9.097 (11.80)	-9.544 (11.78)	-9.735 (11.57)
Observations	296	296	296	296	296	296	296	296
R-squared	0.000	0.001	0.029	0.029	0.032	0.033	0.039	0.053

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 8 (cont.). OLS regression output for the impact of the interventions on the total centrality component of the survey.

	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Intervention_1_self-esteem	-0.888 (0.578)	-0.999* (0.572)	-1.104* (0.565)	-1.136** (0.567)	-1.168** (0.566)	-1.161** (0.567)	-1.038* (0.563)	-1.041* (0.566)
Intervention_2_gratitude	-0.605 (0.556)	-0.608 (0.562)	-0.694 (0.556)	-0.698 (0.556)	-0.758 (0.547)	-0.760 (0.548)	-0.639 (0.549)	-0.645 (0.553)
Intervention_3_empathy	-1.682*** (0.557)	-1.674*** (0.553)	-1.876*** (0.542)	-1.912*** (0.543)	-1.924*** (0.544)	-1.919*** (0.544)	-1.687*** (0.546)	-1.703*** (0.570)
i.control_group	-	-	-	-	-	-	-	-
Age	0.751 (1.023)	0.653 (1.010)	0.662 (0.965)	0.715 (0.963)	0.681 (0.962)	0.626 (0.979)	0.549 (0.973)	0.553 (0.971)
Age_square	-0.018 (0.022)	-0.016 (0.022)	-0.021 (0.020)	-0.022 (0.020)	-0.022 (0.020)	-0.020 (0.021)	-0.018 (0.021)	-0.018 (0.021)
Gender	0.486 (0.387)	0.281 (0.395)	0.387 (0.400)	0.451 (0.414)	0.514 (0.411)	0.515 (0.411)	0.477 (0.412)	0.460 (0.437)
Financial_satisfaction	-0.263 (0.206)	-0.308 (0.204)	-0.271 (0.202)	-0.264 (0.202)	-0.268 (0.200)	-0.275 (0.203)	-0.332 (0.203)	-0.338 (0.205)
Life_satisfaction	-0.191 (0.230)	-0.168 (0.225)	-0.207 (0.228)	-0.211 (0.229)	-0.232 (0.228)	-0.225 (0.230)	-0.250 (0.228)	-0.253 (0.229)
Income_5000orless		0.356 (0.167)	0.361 (0.161)	0.370 (0.165)	0.362 (0.164)	0.353 (0.168)	0.328 (0.166)	0.328 (0.166)
Education			1.084** (0.438)	1.103** (0.442)	1.094** (0.443)	1.092** (0.441)	0.943** (0.441)	0.948** (0.444)
Employed				-0.223 (0.463)	-0.290 (0.460)	-0.277 (0.464)	-0.211 (0.457)	-0.197 (0.457)
Urban_governorate					0.765* (0.397)	0.766* (0.398)	0.559 (0.406)	0.557 (0.408)
Single						0.361 (0.887)	0.654 (0.849)	0.641 (0.858)
Living_area_class							0.562** (0.273)	0.559** (0.275)
Health								0.0368 (0.223)
Constant	-9.904 (11.54)	-9.352 (11.34)	-8.799 (10.92)	-9.482 (10.92)	-9.180 (10.89)	-8.985 (10.93)	-9.017 (10.81)	-9.120 (10.72)
Observations	296	296	296	296	296	296	296	296
R-squared	0.055	0.075	0.098	0.098	0.110	0.110	0.124	0.124

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Behaviorally-informed policies to reduce materialism

Table 9. OLS regression output for the impact of the interventions on the total happiness component of the survey.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intervention_1_self-esteem	-0.432 (0.433)	-0.257 (0.461)	-0.122 (0.528)	-0.122 (0.528)	-0.123 (0.529)	-0.100 (0.535)	-0.154 (0.526)	-0.292 (0.509)
Intervention_2_gratitude		0.527 (0.462)	0.662 (0.529)	0.662 (0.529)	0.663 (0.530)	0.666 (0.531)	0.689 (0.516)	0.566 (0.490)
Intervention_3_empathy			0.270 (0.539)	0.270 (0.539)	0.270 (0.539)	0.275 (0.538)	0.258 (0.524)	0.0493 (0.488)
i.control_group				-	-	-	-	-
Age					-0.010 (0.071)	0.673 (0.914)	0.747 (0.883)	1.130 (0.837)
Age_square						-0.015 (0.019)	-0.017 (0.019)	-0.027 (0.018)
Gender							1.290*** (0.378)	1.213*** (0.355)
Financial_satisfaction								-0.981*** (0.162)
Life_satisfaction								
Income_5000orless								
Education								
Employed								
Urban_governorate								
Single								
Living_area_class								
Health								
Constant	10.91*** (0.219)	10.73*** (0.269)	10.59*** (0.372)	10.59*** (0.372)	10.82*** (1.593)	3.165 (10.40)	2.072 (10.07)	1.529 (9.558)
Observations	296	296	296	296	296	296	296	296
R-squared	0.003	0.008	0.009	0.009	0.009	0.011	0.049	0.171

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 9 (cont.). OLS regression output for the impact of the interventions on the total happiness component of the survey.

	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Intervention_1_self-esteem	-0.256 (0.508)	-0.347 (0.504)	-0.288 (0.506)	-0.363 (0.510)	-0.344 (0.509)	-0.370 (0.513)	-0.342 (0.513)	-0.330 (0.514)
Intervention_2_gratitude	0.566 (0.491)	0.564 (0.488)	0.612 (0.489)	0.602 (0.490)	0.638 (0.492)	0.644 (0.492)	0.671 (0.499)	0.697 (0.501)
Intervention_3_empathy	0.0521 (0.490)	0.0590 (0.492)	0.172 (0.497)	0.0903 (0.508)	0.0976 (0.507)	0.0771 (0.507)	0.130 (0.523)	0.194 (0.538)
i.control_group	-	-	-	-	-	-	-	-
Age	1.176 (0.828)	1.095 (0.816)	1.090 (0.821)	1.211 (0.820)	1.231 (0.819)	1.436 (0.846)	1.419 (0.848)	1.405 (0.848)
Age_square	-0.028 (0.018)	-0.026 (0.017)	-0.024 (0.017)	-0.026 (0.017)	-0.026 (0.017)	-0.031 (0.018)	-0.031 (0.018)	-0.030 (0.018)
Gender	1.199*** (0.356)	1.030*** (0.368)	0.971*** (0.370)	1.121*** (0.382)	1.085*** (0.380)	1.083*** (0.380)	1.074*** (0.383)	1.143*** (0.388)
Financial_satisfaction	-0.897*** (0.196)	-0.935*** (0.195)	-0.955*** (0.194)	-0.937*** (0.196)	-0.935*** (0.196)	-0.909*** (0.200)	-0.922*** (0.202)	-0.897*** (0.197)
Life_satisfaction	-0.194 (0.227)	-0.176 (0.221)	-0.154 (0.218)	-0.164 (0.222)	-0.152 (0.222)	-0.180 (0.226)	-0.185 (0.228)	-0.172 (0.228)
Income_5000orless		0.292 (0.132)	0.288 (0.133)	0.309 (0.134)	0.313 (0.134)	0.350 (0.139)	0.344 (0.137)	0.343 (0.137)
Education			-0.606 (0.369)	-0.563 (0.366)	-0.558 (0.368)	-0.552 (0.370)	-0.585 (0.376)	-0.604 (0.380)
Employed				-0.517 (0.393)	-0.478 (0.395)	-0.527 (0.398)	-0.512 (0.399)	-0.570 (0.402)
Urban_governorate					-0.451 (0.350)	-0.455 (0.351)	-0.502 (0.358)	-0.493 (0.359)
Single						-1.344 (1.041)	-1.277 (1.049)	-1.223 (1.049)
Living_area_class							0.128 (0.261)	0.142 (0.262)
Health								-0.148 (0.188)
Constant	1.357 (9.496)	1.809 (9.364)	1.500 (9.458)	-0.083 (9.479)	-0.261 (9.467)	-0.987 (9.606)	-0.994 (9.605)	-0.580 (9.608)
Observations	296	296	296	296	296	296	296	296
R-squared	0.173	0.188	0.195	0.200	0.204	0.208	0.209	0.211

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

These results show the ability of these interventions on detaching the link between success and materialism among youth, and also on lowering the level of centrality of material matters in youths' life, but not on detaching the link between materialism and happiness. In addition, results of the impact of the control variables on the overall score of materialism show a significant positive impact of age that lessens with older ages, and a positive impact of gender (being male) on the score of materialism. Financial satisfaction and life satisfaction, however, showed a negative impact on materialism.

5. Discussion

The results obtained from the findings section confirm what the study has hypothesized. The three behavioral interventions—boosting self-esteem, fostering gratitude, and stimulating empathy—would reduce materialism levels among Egyptian youth. The results confirm these hypotheses to varying extents. *First*, boosting self-esteem significantly reduced total materialism scores and had a notable impact on the centrality and success dimensions of materialism. These findings confirm that boosting self-esteem is an effective method for lowering materialistic tendencies. *Second*, gratitude reduced materialism in the success dimension but showed limited effects on other dimensions, suggesting its role in helping individuals value intrinsic achievements over material acquisitions. *Third*, among the three interventions, empathy had the strongest and most consistent impact, significantly reducing total materialism and influencing both the centrality and success dimensions. This underscores empathy's critical role in shifting focus from self-centered material goals to communal and prosocial values.

Interestingly, none of the interventions succeeded in detaching the link between materialism and happiness. This indicates the inadequacy of these interventions in lowering the association of material possessions with emotional satisfaction. This link is recommended for further study in future research. However, the interventions were effective in weakening the association between success and materialism, as well as lowering the centrality of material matters in youths' lives. These findings emphasize the potential of psychological and social interventions in altering materialistic attitudes among young populations.

These results align with the work of Chaplin and John (2007) and Park and John (2011), who found that boosting self-esteem in adolescents reduces materialism by addressing feelings of insecurity. Additionally, similar effects were observed by Froh et al. (2011) and Lambert et al. (2009), who concluded that fostering gratitude can diminish materialistic tendencies by shifting focus away from material possessions towards more meaningful, intrinsic goals. The study's finding that empathy has a significant negative impact on materialism supports previous research by Chao (2019), who demonstrated that prosocial interventions could moderate the relationship between media consumption and materialism. This aligns with the broader understanding that empathy reduces the focus on material goods by encouraging individuals to consider the needs of others over personal acquisition.

The results demonstrate the practical implications of these interventions for formulating youth-focused policies in Egypt. These policies should aim to address the psychological roots of materialism by promoting self-worth and communal responsibility. Developing online and offline platforms that provide youth with opportunities to express their thoughts and participate in community-building activities can foster self-esteem and purpose, for example, through organized youth forums and leadership workshops.

Educational programs can also be altered to include self-worth, discussions on gratitude, and empathy-building exercises in school and university curricula. Focusing more on extracurricular activities such as volunteering or community service projects can cultivate empathy and intrinsic values as well.

In addition, partnering with religious institutions to organize youth workshops and campaigns promoting moderate religiosity and spirituality through initiatives that focus on gratitude, inner contentment and volunteerism can reinforce the importance of non-material success and well-being.

Nationwide campaigns celebrating acts of gratitude and empathy and showcasing stories of individuals contributing to their communities or overcoming challenges through intrinsic values, can inspire broader societal change. Collaborating with influencers and public figures to model and promote behaviors centered on gratitude and empathy creates aspirational norms among youth. Community centers or youth hubs can be established to facilitate activities designed to build self-esteem and empathy, such as creative workshops, team-based problem-solving events, and volunteer initiatives. Partnering with local NGOs to create mentorship programs pairing youth with role models who emphasize the importance of personal growth and societal contributions over material success can further reinforce these values.

These policies can help detangle the strong associations between materialism and success while reducing the centrality of material possessions in youths' lives. By promoting self-worth, gratitude, and empathy, such interventions foster a culture of intrinsic values and collective well-being.

6. Conclusions

Materialism is a false belief that material matters and physical well-being hold greater significance than spiritual or postmaterialist values. Several studies have shown negative impacts of high materialism on individuals' personal life, societies, and markets. This study addresses a significant research gap by focusing on a non-WEIRD country, specifically Egypt, where data on personal materialism and interventions targeting it were previously absent. Conducting this research on Egypt will allow the testing of existing theories on a different cultural context, which enhances the understanding of how behavioral interventions can address materialism in developing nations.

The study involved 296 Egyptian youth, aged 18 to 29, from 25 governorates out of Egypt's 28 governorates. The study uses experimental interventions designed to enhance self-esteem, foster gratitude, and stimulate empathy. Boosting self-esteem and fostering empathy significantly reduced materialism, while gratitude showed limited but noteworthy effects. Although the findings are

promising, the study's limitations include the small sample size and reliance on self-reported data rather than behavioral measures, which may cause social desirability concerns. Nevertheless, the fact that we have three treatments and a control has, to a great extent, eliminated the effect of bias.

This research underscores the importance of culturally relevant, behaviorally informed policies that prioritize intrinsic values, social connection, and emotional security. By addressing the psychological roots of materialism, these interventions offer a pathway for fostering well-being and reducing the excessive prioritization of material acquisition. The study recommends embedding the three tested dimensions of this study in schools' curricula on different levels; encouraging volunteerism and community service; engaging youth in empowerment programs; and facilitating cultural and artistic initiatives to allow youth to express themselves creatively and gain recognition for their achievements. In addition, encouraging modest religious activities that promote mindfulness, thankfulness and care for others.

Future research is recommended to tackle the impact of lowering materialism on consumption, market dynamics, and saved social benefit. Future research should also explore larger more diverse samples, and employ longitudinal designs to assess the sustainability of these interventions, as well as integrate objective behavioral measures. Additionally, investigating the interactions between these interventions and broader socioeconomic or cultural factors could yield deeper insights.

References

- Abaza, M. (2001). Shopping malls, consumer culture and the reshaping of public space in Egypt. *Theory, Culture & Society*, 18(5), 97–122. <https://doi.org/10.1177/02632760122051986>
- Abaza, M. (2006). *The changing consumer cultures of modern Egypt: Cairo's urban reshaping*. Leiden: Brill. <https://doi.org/10.1163/9789047410478>
- Adib, H., & El-Bassiouny, N. (2012). Materialism in young consumers: An investigation of family communication patterns and parental mediation practices in Egypt. *Journal of Islamic Marketing*, 3(3), 255–282. <https://doi.org/10.1108/17590831211259745>
- Ahmed, J. M. Y. (2018). *Antecedents and consequences of adolescents' materialism in Egypt* (Doctoral dissertation, Faculty of Commerce, Cairo University).
- Ahuvia, A., & Wong, N. (2002). Personality and values based materialism: Their relationship and origins. *Journal of Consumer Psychology*, 12(4), 389–402. [https://doi.org/10.1016/S1057-7408\(16\)30089-4](https://doi.org/10.1016/S1057-7408(16)30089-4)
- Ammar, N., El-Bassiouny, N., & Hawash, R. (2016). Materialism and healthy food consumption: Can health education play a role? *Social Business*, 6(4), 377–401. <https://doi.org/10.1362/204440816X14811339919813>
- Arndt, J., Solomon, S., Kasser, T., & Sheldon, K. M. (2004). The urge to splurge: A terror management account of materialism and consumer behavior. *Journal of Consumer Psychology*, 14(3), 198–212. https://doi.org/10.1207/s15327663jcp1403_2
- Bagwell, L. S., & Bernheim, B. D. (1996). Veblen effects in a theory of conspicuous consumption. *The American Economic Review*, 86(June), 349–373.
- Bargh, J. A., & Chartrand, T. L. (2014). The mind in the middle: A practical guide to priming and automaticity research. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 311–344). Cambridge, United Kingdom: Cambridge University Press. <https://doi.org/10.1017/CBO9780511996481.017>
- Bauer, M. A., Wilkie, J. E. B., Kim, J. K., & Bodenhausen, G. V. (2012). Cuing consumerism: Situational materialism undermines personal and social well-being. *Psychological Science*, 23(5), 517–523. <https://doi.org/10.1177/0956797611429579>

- Belk, R. W. (1984). Three scales to measure constructs related to materialism: Reliability, validity, and relationships to measures of happiness. In T. Kinnear (Ed.), *Advances in consumer research* (Vol. 11, pp. 291–297). Urbana, IL: Association for Consumer Research.
- Bertocci, P. A., & Millard, R. M. (1963). Erich Fromm: Man's search for freedom. In *Personality and the good: Psychological and ethical perspectives* (pp. 69–93). New York, NY: David McKay Company.
- Bock, D. E., Eastman, J. K., & Eastman, K. L. (2018). Encouraging consumer charitable behavior: The impact of charitable motivations, gratitude, and materialism. *Journal of Business Ethics*, 150(4), 1213–1228. <https://doi.org/10.1007/s10551-016-3203-x>
- Borg, I., Hertel, G., & Hermann, D. (2017). Age and personal values: Similar value circles with shifting priorities. *Psychology and Aging*, 32(7), 636–649. <https://doi.org/10.1037/pag0000196>
- Brickman, P., & Campbell, D. T. (1971). Hedonic relativism and planning the good society. In M. H. Appley (Ed.), *Adaptation-level theory* (pp. 287–302). New York, NY: Academic Press.
- Brown, K. W., & Kasser, T. (2005). Are psychological and ecological well-being compatible? The role of values, mindfulness, and lifestyle. *Social Indicators Research*, 74, 349–368. <https://doi.org/10.1007/s11205-004-8207-8>
- Brown, K. W., Kasser, T., Ryan, R. M., & Konow, J. (2016). Materialism, spending, and affect: An event-sampling study of marketplace behavior and its affective costs. *Journal of Happiness Studies*, 17(6), 2277–2292. <https://doi.org/10.1007/s10902-015-9694-9>
- Brown, K. W., Kasser, T., Ryan, R. M., Linley, A. P., & Orzech, K. (2009). When what one has is enough: Mindfulness, financial desire discrepancy, and subjective well-being. *Journal of Research in Personality*, 43(5), 727–736. <https://doi.org/10.1016/j.jrp.2009.07.002>
- Buijzen, M. (2007). Reducing children's susceptibility to commercials: Mechanisms of factual and evaluative advertising interventions. *Media Psychology*, 9(2), 411–430. <https://doi.org/10.1080/15213260701291361>
- Buijzen, M., & Valkenburg, P. M. (2005). Parental mediation of undesired advertising effects. *Journal of Broadcasting & Electronic Media*, 49(2), 153–165. https://doi.org/10.1207/s15506878jobem4902_1
- Burroughs, J. E., & Rindfleisch, A. (2002). Materialism and well-being: A conflicting values perspective. *Journal of Consumer Research*, 29(3), 348–370. <https://doi.org/10.1086/344429>
- Burroughs, J. E., Chaplin, L. N., Pandelaere, M., Norton, M. I., Ordabayeva, N., Gunz, A., & Dinauer, L. (2013). Using motivation theory to develop a transformative consumer research agenda for reducing materialism in society. *Journal of Public Policy & Marketing*, 32(1), 18–31. <https://doi.org/10.1509/jppm.10.046>
- Carroll, J. S., Dean, L. R., Call, L. L., & Busby, D. M. (2011). Materialism and marriage: Couple profiles of congruent and incongruent spouses. *Journal of Couple & Relationship Therapy: Innovations in Clinical & Educational Interventions*, 10(4), 287–308. <https://doi.org/10.1080/15332691.2011.613306>
- Chang, L., & Arkin, R. M. (2002). Materialism as an attempt to cope with uncertainty. *Psychology & Marketing*, 19(5), 389–406. <https://doi.org/10.1002/mar.10016>
- Chao, Q. (2019). The impacts of public service advertising on materialism among young children in urban China. In S. Liu (Ed.), *5th International Conference on Economics, Management and Humanities Science (ECOMHS 2019)* (pp. 1106–1111). London: Francis Academic Press. <https://doi.org/10.25236/ecomhs.2019.234>
- Chaplin, L. N., & John, D. R. (2007). Growing up in a material world: Age differences in materialism in children and adolescents. *Journal of Consumer Research*, 34(4), 480–493. <https://doi.org/10.1086/518546>
- Chaplin, L. N., John, D. R., Rindfleisch, A., & Froh, J. J. (2019). The impact of gratitude on adolescent materialism and generosity. *The Journal of Positive Psychology*, 14(4), 502–511. <https://doi.org/10.1080/17439760.2018.1497688>
- Clary, E. G., Snyder, M., Ridge, R. D., Copeland, J., Stukas, A. A., Haugen, J., & Meine, P. (1998). Understanding and assessing the motivations of volunteers: A functional approach. *Journal of Personality and Social Psychology*, 74(6), 1516–1530. <https://doi.org/10.1037/0022-3514.74.6.1516>
- Clump, M. A., Brandel, J. M., & Sharpe, P. J. (2002). Differences in environmental responsibility between materialistic groups. *Psychologia*, 45(3), 155–161. <https://doi.org/10.2117/psysoc.2002.155>
- Cohen, J. B., Pham, M. T., & Andrade, E. B. (2008). The nature and role of affect in consumer behavior. In C. P. Haugtvedt, P. M. Herr, & F. R. Kardes (Eds.), *Handbook of consumer psychology* (pp. 297–348). New York, NY: Taylor & Francis Group.
- Costin, F. (1969). The scrambled sentence test: A group measure of hostility. *Educational and Psychological Measurement*, 29(2), 461–468. <https://doi.org/10.1177/001316446902900224>
- Cozzolino, P. J., Staples, A. D., Meyers, L. S., & Samboceti, J. (2004). Greed, death, and values: From terror management to transcendence management theory. *Personality & Social Psychology Bulletin*, 30(3), 278–292. <https://doi.org/10.1177/0146167203260716>

- Dawoud, S. D. (2014). Econometric analysis of the changes in food consumption expenditure patterns in Egypt. *Journal of Development and Agricultural Economics*, 6(1), 1–11. <https://doi.org/10.5897/JDAE2013.0511>
- Dawson, S. (1988). Trait materialism: Improved measures and an extension to multiple domains of life satisfaction. In S. Shapiro & A. H. Walle (Eds.), *The proceedings of the AMA Winter Educators Conference* (pp. 478–481). Chicago, IL: American Marketing Association.
- De Matos, C. A., Vieira, V., Bonfanti, K., & Mette, F. M. B. (2019). Antecedents of indebtedness for low-income consumers: The mediating role of materialism. *Journal of Consumer Marketing* 36(1), 92–101. <https://doi.org/10.1108/JCM-09-2017-2352>
- Dechesne, M., Pyszczynski, T., Arndt, J., Ransom, S., Sheldon, K. M., van Knippenberg, A., & Janssen, J. (2003). Literal and symbolic immortality: The effect of evidence of literal immortality on self-esteem striving in response to mortality salience. *Journal of Personality & Social Psychology*, 84(4), 722–737. <https://doi.org/10.1037/0022-3514.84.4.722>
- Deci, E. L., & Ryan, R. M. (2013). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Springer Science & Business Media.
- Deckop, J. R., Jurkiewicz, C. L., & Giacalone, R. A. (2010). Effects of materialism on work-related personal well-being. *Human Relations*, 63(7), 1007–1030. <https://doi.org/10.1177/0018726709353953>
- Delhey, J. (2010). From materialist to post-materialist happiness? National affluence and determinants of life satisfaction in cross-national perspective. *Social Indicators Research*, 97(1), 65–84. <https://doi.org/10.1007/s11205-009-9558-y>
- Dittmar, H. (2005). A new look at "compulsive buying": Self discrepancies and materialistic values as predictors of compulsive buying tendency. *Journal of Social and Clinical Psychology*, 24(6), 832–859. <https://doi.org/10.1521/jscp.2005.24.6.832>
- Dittmar, H., Bond, R., Hurst, M., & Kasser, T. (2014). The relationship between materialism and personal well-being: A meta-analysis. *Journal of Personality and Social Psychology*, 107(5), 879–924. <https://doi.org/10.1037/a0037409>
- Donnelly, G., Ksendzova, M., & Howell, R. T. (2013). Sadness, identity, and plastic in over-shopping: The interplay of materialism, poor credit management, and emotional buying motives in predicting compulsive buying. *Journal of Economic Psychology*, 39, 113–125. <https://doi.org/10.1016/j.joep.2013.07.006>
- Drażkowski, D., & Trepanowski, R. (2022). A longitudinal experimental study examining how and whether practicing acts of kindness affects materialism. *International Journal of Environmental Research and Public Health*, 19(23), 16339. <https://doi.org/10.3390/ijerph192316339>
- Druckman, J. N., Green, D. P., Kuklinski, J. H., & Lupia, A. (2011). An introduction to core concepts. In J. N. Druckman, D. P. Green, J. H. Kuklinski, & A. Lupia (Eds.), *The Cambridge handbook of experimental political science* (pp. 15–26). Cambridge, United Kingdom: Cambridge University Press. <https://doi.org/10.1017/CBO9780511921452.002>
- El Din, D. G., & El Sahn, F. (2013). Measuring the factors affecting Egyptian consumers' intentions to purchase global luxury fashion brands. *The Business & Management Review*, 3(4), 44.
- El-Bassiouny, N., Adib, H., Karem, S., Hammad, H., Ammar, N., & Brunner, C. (2011). Slaves of consumerism: Highlights of Egypt post 25 January 2011. In *Proceedings of the International Association for Business and Society*, 22, 22–31.
- Emerson, R. M. (1976). Social exchange theory. *Annual Review of Sociology*, 2, 335–362. <https://doi.org/10.1146/annurev.so.02.080176.002003>
- Emmons, R. A., & McCullough, M. E. (2003). Counting blessings versus burdens: An experimental investigation of gratitude and subjective well-being in daily life. *Journal of Personality and Social Psychology*, 84(2), 377–389. <https://doi.org/10.1037/0022-3514.84.2.377>
- Fournier, S., & Richins, M. L. (1991). Some theoretical and popular notions concerning materialism. *Journal of Social Behavior and Personality*, 6, 403–414.
- Fritsche, K., Jonas, E., Kayser, D. N., & Koranyi, N. (2010). Existential threat and compliance with pro-environmental norms. *Journal of Environmental Psychology*, 30(1), 67–79. <https://doi.org/10.1016/j.jenvp.2009.08.007>
- Froh, J. J., Fan, J., Emmons, R. A., Bono, G., Huebner, E. S., & Watkins, P. (2011). Measuring gratitude in youth: Assessing the psychometric properties of adult gratitude scales in children and adolescents. *Psychological Assessment*, 23(2), 311–325. <https://doi.org/10.1037/a0021590>
- Garðarsdóttir, R. B., & Dittmar, H. (2012). The relationship of materialism to debt and financial well-being: The case of Iceland's perceived prosperity. *Journal of Economic Psychology*, 33(3), 471–481. <https://doi.org/10.1016/j.joep.2011.12.008>
- Gentina, E., Shrum, L. J., & Lowrey, T. M. (2018a). Coping with loneliness through materialism: Strategies matter for adolescent development of unethical behaviors. *Journal of Business Ethics* 152(1). <https://doi.org/10.1007/s10551-016-3329-x>

- Gentina, E., Shrum, L. J., Lowrey, T. M., Vitell, S., & Rose, G. (2018b). An integrative model of the influence of parental and peer support on consumer ethical beliefs: The mediating role of self-esteem, power, and materialism. *Journal of Business Ethics*, 150(4). <https://doi.org/10.2139/ssrn.3235207>
- Ger, G., & Belk, R. W. (1996). Cross-cultural differences in materialism. *Journal of Economic Psychology*, 17(1), 55–77. [https://doi.org/10.1016/0167-4870\(95\)00035-6](https://doi.org/10.1016/0167-4870(95)00035-6)
- Goldberg, M. E., Gorn, G. J., Peracchio, L. A., & Bamossy, G. (2003). Understanding materialism among youth. *Journal of Consumer Psychology*, 13(3), 278–288. https://doi.org/10.1207/S15327663JCP1303_09
- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, 102(1), 4–27. <https://doi.org/10.1037/0033-295X.102.1.4>
- Hainmueller, J., Hopkins, D. J., & Yamamoto, T. (2014). Causal inference in conjoint analysis: Understanding multidimensional choices via stated preference experiments. *Political Analysis*, 22(1), 1–30. <https://doi.org/10.1093/pan/mpt024>
- Hansen, P. G., & Jespersen, A. M. (2013). Nudge and the manipulation of choice: A framework for the responsible use of the nudge approach to behaviour change in public policy. *European Journal of Risk Regulation*, 4(1), 3–28. <https://doi.org/10.1017/S1867299X00002762>
- Henry, H. M., & Elwy, M. (2020). Egyptian rearing practices: Takafol and observance of family rituals. In B. K. Ashdown, & A. N. Faherty (Eds.), *Parents and caregivers across cultures* (pp. 247–257). Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-030-35590-6_17
- Homans, G. C. (1958). Social behavior as exchange. *American Journal of Sociology*, 63(6), 597–606. <https://doi.org/10.1086/222355>
- Inglehart, R. (1971). The silent revolution in Europe: Intergenerational change in post-industrial societies. *American Political Science Review*, 65(4), 991–1017. <https://doi.org/10.2307/1953494>
- Joye, Y., Bolderdijk, J. W., Köster, M. A., & Piff, P. K. (2020). A diminishment of desire: Exposure to nature relative to urban environments dampens materialism. *Urban Forestry & Urban Greening*, 54, 126783. <https://doi.org/10.1016/j.ufug.2020.126783>
- Kardes, F. R., Herr, P. M., & Schwarz, N. (Eds.). (2019). *Handbook of research methods in consumer psychology*. New York, NY: Routledge. <https://doi.org/10.4324/9781351137713>
- Kasser, T. (2002). *The high price of materialism*. Cambridge, MA: MIT Press. <https://doi.org/10.7551/mitpress/3501.001.0001>
- Kasser, T. (2018). Materialism and living well. In E. Diener, S. Oishi, & L. Tay (Eds.), *Handbook of well-being*. Salt Lake City, UT: DEF Publishers.
- Kasser, T., & Linn, S. (2016). Growing up under corporate capitalism: The problem of marketing to children, with suggestions for policy solutions. *Social Issues and Policy Review*, 10(1), 122–150. <https://doi.org/10.1111/sipr.12020>
- Kasser, T., & Ryan, R. M. (1993). The dark side of the American dream: Correlates of intrinsic and extrinsic goals. *Journal of Personality and Social Psychology*, 65(2), 410–422. <https://doi.org/10.1037/0022-3514.65.2.410>
- Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin*, 22(3), 280–287. <https://doi.org/10.1177/0146167296223006>
- Kasser, T., & Sheldon, K. M. (2000). Of wealth and death: Materialism, mortality salience, and consumption behavior. *Psychological Science*, 11(4), 348–351. <https://doi.org/10.1111/1467-9280.00269>
- Kasser, T., Rosenblum, K. L., Sameroff, A. J., Deci, E. L., Ryan, R. M., et al. (2014). Changes in materialism, changes in psychological well-being: Evidence from three longitudinal studies and an intervention experiment. *Motivation and Emotion*, 38, 1–22. <https://doi.org/10.1007/s11031-013-9371-4>
- Kilbourne, W., & Pickett, G. (2008). How materialism affects environmental beliefs, concern, and environmentally responsible behavior. *Journal of Business Research*, 61(9), 885–893. <https://doi.org/10.1016/j.jbusres.2007.09.016>
- King, R. B., & Datu, J. A. D. (2017). Materialism does not pay: Materialistic students have lower motivation, engagement, and achievement. *Contemporary Educational Psychology*, 49, 289–301. <https://doi.org/10.1016/j.cedpsych.2017.03.003>
- Krosnick, J. A., & Alwin, D. F. (1989). Aging and susceptibility to attitude change. *Journal of Personality and Social Psychology*, 57(3), 416–425. <https://doi.org/10.1037/0022-3514.57.3.416>
- Lambert, N. M., Fincham, F. D., Stillman, T. F., & Dean, L. R. (2009). More gratitude, less materialism: The mediating role of life satisfaction. *Journal of Positive Psychology*, 4(1), 32–42. <https://doi.org/10.1080/17439760802216311>
- Lazarus, R. S., & Lazarus, B. N. (1994). *Passion and reason: Making sense of our emotions*. Oxford: Oxford University Press. <https://doi.org/10.1093/oso/9780195087574.001.0001>

- LeBaron, A. B., Kelley, H. H., & Carroll, J. S. (2018). Money over marriage: Marriage importance as a mediator between materialism and marital satisfaction. *Journal of Family and Economic Issues*, 39(2), 337–347. <https://doi.org/10.1007/s10834-017-9563-2>
- Lee, H., Chugani, S., & Namkoong, J. (2022). The role of entitlement and perceived resources in gratitude's effect on materialism: Longitudinal and situational effects. *Journal of Business Research*, 139, 993–1003. <https://doi.org/10.1016/j.jbusres.2021.10.029>
- Lee, J., Shrum, L. J., & Yi, Y. (2017). The role of cultural communication norms in social exclusion effects. *Journal of Consumer Psychology*, 27(1), 108–116. <https://doi.org/10.1016/j.jcps.2016.05.006>
- Lekavičienė, R., Antinienė, D., Nikou, S., Rūteliūnė, A., Šeinauskienė, B., & Vaiciukynaitė, E. (2022). Reducing consumer materialism and compulsive buying through emotional intelligence training amongst Lithuanian students. *Frontiers in Psychology*, 13, 932395. <https://doi.org/10.3389/fpsyg.2022.932395>
- Lekes, N., Hope, N. H., Gouveia, L., Koestner, R., & Philippe, F. L. (2012). Influencing value priorities and increasing well-being: The effects of reflecting on intrinsic values. *Journal of Positive Psychology*, 7(3), 249–261. <https://doi.org/10.1080/17439760.2012.677468>
- Lens, I., Pandelaere, M., & Warlop, L. (2010). Effects of advertising exposure on materialism and self-esteem: Advertised luxuries as a feel-good strategy? *ACR North American Advances*, 37, 43–48.
- Levitt, S. D., & Dubner, S. J. (2005). *Freakonomics: A rogue economist explores the hidden side of everything*. New York, NY: Harper Collins.
- Loveland, K. E., Smeesters, D., & Mandel, N. (2010). Still preoccupied with 1995: The need to belong and preference for nostalgic products. *Journal of Consumer Research*, 37(3), 393–408. <https://doi.org/10.1086/653043>
- Lykins, E. L. B., Segerstrom, S. C., Averill, A. J., Evans, D. R., & Kemeny, M. E. (2007). Goal shifts following reminders of mortality: Reconciling posttraumatic growth and terror management theory. *Personality and Social Psychology Bulletin*, 33(8), 1088–1099. <https://doi.org/10.1177/0146167207303015>
- Macrae, C. N., Bodenhausen, G. V., Milne, A. B., & Jetten, J. (1994). Out of mind but back in sight: Stereotypes on the rebound. *Journal of Personality and Social Psychology*, 67(5), 808–817. <https://doi.org/10.1037/0022-3514.67.5.808>
- Mandel, N., & Heine, S. J. (1999). Terror management and marketing: He who dies with the most toys wins. In E. Arnould & L. Scott (Eds.), *Advances in consumer research* (Vol. 26, pp. 527–532). Urbana, IL: Association for Consumer Research.
- Maslow, A. H. (1970). *Motivation and personality* (2nd ed.). New York, NY: Harper & Row.
- Mathur, A. (1996). Older adults' motivations for gift giving to charitable organizations: An exchange theory perspective. *Psychology and Marketing*, 13(1), 107–123. [https://doi.org/10.1002/\(SICI\)1520-6793\(199601\)13:1<107::AID-MAR6>3.0.CO;2-K](https://doi.org/10.1002/(SICI)1520-6793(199601)13:1<107::AID-MAR6>3.0.CO;2-K)
- Mathur, A. (2013). Materialism and charitable giving: Can they co-exist? *Journal of Consumer Behaviour*, 12(3), 149–158. <https://doi.org/10.1002/cb.1404>
- Mayer, J. D., Salovey, P., Gomberg-Kaufman, S., & Blainey, K. (1991). A broader conception of mood experience. *Journal of Personality and Social Psychology*, 60(1), 100–111. <https://doi.org/10.1037/0022-3514.60.1.100>
- McClelland, D. C. (1987). *Human motivation*. Cambridge, United Kingdom: Cambridge University Press.
- McCullough, M. E., Emmons, R. A., & Tsang, J. A. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology*, 82(1), 112–127. <https://doi.org/10.1037/0022-3514.82.1.112>
- McCullough, M. E., Kilpatrick, S. D., Emmons, R. A., & Larson, D. B. (2001). Is gratitude a moral affect? *Psychological Bulletin*, 127(2), 249–266. <https://doi.org/10.1037/0033-2909.127.2.249>
- Mead, N. L., Baumeister, R. F., Stillman, T. F., Rawn, C. D., & Vohs, K. D. (2011). Social exclusion causes people to spend and consume strategically in the service of affiliation. *Journal of Consumer Research*, 37(5), 902–919. <https://doi.org/10.1086/656667>
- Mick, D. G. (1996). Are studies of dark side variables confounded by socially desirable responding? The case of materialism. *Journal of Consumer Research*, 23(2), 106–119. <https://doi.org/10.1086/209470>
- Milfont, T. L., Milojev, P., & Sibley, C. G. (2016). Values stability and change in adulthood: A 3-year longitudinal study of rank-order stability and mean-level differences. *Personality and Social Psychology Bulletin*, 42(5), 572–588. <https://doi.org/10.1177/0146167216639245>
- Moldes, O., & Ku, L. (2020). Materialistic cues make us miserable: A meta-analysis of the experimental evidence for the effects of materialism on individual and societal well-being. *Psychology & Marketing*, 37(10), 1396–1419. <https://doi.org/10.1002/mar.21387>
- Mueller, A., Mitchell, J. E., Peterson, L. A., Faber, R. J., Steffen, K. J., Crosby, R. D., & Claes, L. (2011). Depression, materialism, and excessive Internet use in relation to compulsive buying. *Comprehensive Psychiatry*, 52(4), 420–424. <https://doi.org/10.1016/j.comppsy.2010.09.001>

- Nairn, A., & Oprea, S. J. (2021). TV adverts, materialism, and children's self-esteem: The role of socio-economic status. *International Journal of Market Research*, 63(2), 161–176. <https://doi.org/10.1177/1470785320970462>
- Nepomuceno, M. V., & Laroche, M. (2015). The impact of materialism and anti-consumption lifestyles on personal debt and account balances. *Journal of Business Research*, 68(3), 654–664. <https://doi.org/10.1016/j.jbusres.2014.08.006>
- Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, 84(3), 231–259. <https://doi.org/10.1037/0033-295X.84.3.231>
- Okasha, A., Al-Bayoumi, E. H., & Hashem, A. O. (2009). *Vision wings: Towards a positive pattern of social values and soaring Egyptians to the horizon of the future vision 2030*. Institute of National Planning, Egypt.
- Ordabayeva, N., & Chandon, P. (2011). Getting ahead of the Joneses: When equality increases conspicuous consumption among bottom-tier consumers. *Journal of Consumer Research*, 38(1), 27–41. <https://doi.org/10.1086/658165>
- Ortony, A., Clore, G. L., & Collins, A. (1990). *The cognitive structure of emotions*. Cambridge, United Kingdom: Cambridge University Press.
- Park, J. K., & John, D. R. (2010). More than meets the eye: The influence of implicit and explicit self-esteem on materialism. *Journal of Consumer Psychology*, 21(1), 73–87. <https://doi.org/10.1016/j.jcps.2010.09.001>
- Parker, N., Kasser, T., Bardi, A., Gatersleben, B., & Druckman, A. (2020). Goals for good: Testing an intervention to reduce materialism in three European countries. *European Journal of Applied Positive Psychology*, 4(9), 1–15.
- Pieters, R. (2013). Bidirectional dynamics of materialism and loneliness: Not just a vicious cycle. *Journal of Consumer Research*, 40(4), 615–631. <https://doi.org/10.1086/671564>
- Pitts, R. E., & Skelly, G. U. (1984). Economic self-interest and other motivational factors underlying charitable giving. *Journal of Behavioral Economics*, 12(2), 93–109. [https://doi.org/10.1016/0090-5720\(84\)90005-6](https://doi.org/10.1016/0090-5720(84)90005-6)
- Ponchio, M. C., & Aranha, F. (2008). Materialism as a predictor variable of low-income consumer behavior when entering into installment plan agreements. *Journal of Consumer Behaviour*, 7(1), 21–34. <https://doi.org/10.1002/cb.234>
- Prentice, M., Kasser, T., & Sheldon, K. M. (2017). Openness to experience predicts intrinsic value shifts after deliberating one's own death. *Death Studies*, 42(4), 205–215. <https://doi.org/10.1080/07481187.2017.1334016>
- Puente-Díaz, R., & Cavazos-Arroyo, J. (2019). Influence of gratitude and materialism on two different conceptualizations of subjective well-being. *Universitas Psychologica*, 18(3), 1–9. <https://doi.org/10.11144/Javeriana.upsy18-3.igmt>
- Richins, M. L., & Dawson, S. (1992). A consumer values orientation for materialism and its measurement: Scale development, and validation. *Journal of Consumer Research*, 19(3), 303–316. <https://doi.org/10.1086/209304>
- Ridgway, N. M., Kukar-Kinney, M., & Monroe, K. B. (2008). An expanded conceptualization and a new measure of compulsive buying. *Journal of Consumer Research*, 35(4), 622–639. <https://doi.org/10.1086/591108>
- Roberts, J. A., & Clement, A. (2007). Materialism and satisfaction with over-all quality of life and eight life domains. *Social Indicators Research*, 82(1), 79–92. <https://doi.org/10.1007/s11205-006-9015-0>
- Rosenberg, E. L. (1998). Levels of analysis and the organization of affect. *Review of General Psychology*, 2(3), 247–270. <https://doi.org/10.1037/1089-2680.2.3.247>
- Rucker, D. D., & Galinsky, A. D. (2008). Desire to acquire: Powerlessness and compensatory consumption. *Journal of Consumer Research*, 35(2), 257–267. <https://doi.org/10.1086/588569>
- Rucker, D. D., & Galinsky, A. D. (2009). Conspicuous consumption versus utilitarian ideals: How different levels of power shape consumer behavior. *Journal of Experimental Social Psychology*, 45(3), 549–555. <https://doi.org/10.1016/j.jesp.2009.01.005>
- Rustagi, N., Shrum, L. J., & Lowrey, T. M. (2016, July). Undermining the potential of within-domain compensatory consumption: A product's explicit identity connection impedes self-repair. Paper presented at the Society for Consumer Psychology Boutique Conference on Identity and Consumption, Chicago, IL.
- Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25(1), 54–67. <https://doi.org/10.1006/ceps.1999.1020>
- Saleem, M., Muntaha, S. T., Durrani, A. K., & Shafique, M. (2022). Impact of gratitude on subjective well-being among Pakistani youth: Moderating role of materialism. *Clinical and Counselling Psychology Review*, 3(1), 39–58. <https://doi.org/10.32350/ccpr.31.04>

- Sayah, R. (2024). Social class, smartphones advertising exposure, self-esteem, and materialism: The case of children in Lebanon. *Digest of Middle East Studies*, 33(3). <https://doi.org/10.1111/dome.12329>
- Schroeder, J. E., & Dugal, S. S. (1995). Psychological correlates of the materialism construct. *Journal of Social Behavior and Personality*, 10(1), 243–253.
- Schudson, M. (1984). *Advertising, the uneasy persuasion*. New York, NY: Basic Books.
- Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology*, 45(3), 513–523. <https://doi.org/10.1037/0022-3514.45.3.513>
- Sheldon, K. M., & Kasser, T. (1995). Coherence and congruence: Two aspects of personality integration. *Journal of Personality and Social Psychology*, 68(3), 531–543. <https://doi.org/10.1037/0022-3514.68.3.531>
- Sheldon, K. M., & Kasser, T. (1998). Pursuing personal goals: Skills enable progress, but not all progress is beneficial. *Personality and Social Psychology Bulletin*, 24(12), 1319–1331. <https://doi.org/10.1177/01461672982412006>
- Sheldon, K. M., Arndt, J., & Houser-Marko, L. (2003). In search of the organismic valuing process: The human tendency to move towards beneficial goal choices. *Journal of Personality*, 71(5), 835–869. <https://doi.org/10.1111/1467-6494.7105006>
- Shrum, L. J., Chaplin, L. N., & Lowrey, T. M. (2022). Psychological causes, correlates, and consequences of materialism. *Consumer Psychology Review*, 5(1), 69–86. <https://doi.org/10.1002/arcp.1077>
- Shrum, L. J., Lee, J., Burroughs, J. E., & Rindfleisch, A. (2012). An online process model of second-order cultivation effects: How television cultivates materialism and its consequences for life satisfaction. *Human Communication Research*, 37(1), 34–57. <https://doi.org/10.1111/j.1468-2958.2010.01392.x>
- Shrum, L. J., Wong, N., Arif, F., Chugani, S. K., Gunz, A., Lowrey, T. M., Nairn, A., Pandelaere, M., Ross, M. S., Ruvio, A., Scott, K., & Sundie, J. (2013). Reconceptualizing materialism as identity goal pursuits: Functions, processes, and consequences. *Journal of Business Research*, 66(8), 1179–1185. <https://doi.org/10.1016/j.jbusres.2012.08.010>
- Sirgy, M. J., Gurel-Atay, E., Webb, D., Cicic, M., Husic, M., Ekici, A., et al. (2012). Linking advertising, materialism, and life satisfaction. *Social Indicators Research*, 107(1), 79–101. <https://doi.org/10.1007/s11205-011-9829-2>
- Sirgy, M. J., Gurel-Atay, E., Webb, D., Cicic, M., Husic-Mehmedovic, M., Ekici, A., & Johar, J. S. (2013). Is materialism all that bad? Effects on satisfaction with material life, life satisfaction, and economic motivation. *Social Indicators Research*, 110(1), 349–366. <https://doi.org/10.1007/s11205-011-9934-2>
- Sivanathan, N., & Pettit, N. C. (2010). Protecting the self through consumption: Status goods as affirmational commodities. *Journal of Experimental Social Psychology*, 46(3), 564–570. <https://doi.org/10.1016/j.jesp.2010.01.006>
- Slater, P. (1980). *Wealth addiction*. New York, NY: E. P. Dutton.
- Stillman, T. F., Fincham, F. D., Vohs, K. D., Lambert, N. M., & Phillips, C. A. (2012). The material and immaterial in conflict: Spirituality reduces conspicuous consumption. *Journal of Economic Psychology*, 33(1), 1–7. <https://doi.org/10.1016/j.joep.2011.08.012>
- Talaat, R. M. (2020). Fashion consciousness, materialism and fashion clothing purchase involvement of young fashion consumers in Egypt: The mediation role of materialism. *Journal of Humanities and Applied Social Sciences*, 4(2), 132–154. <https://doi.org/10.1108/JHASS-02-2020-0027>
- Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. New Haven, CT: Yale University Press.
- Thaler, R. H., Sunstein, C. R., & Balz, J. P. (2013). Choice architecture. In E. Shafir (Ed.), *The behavioral foundations of public policy* (pp. 428–439). Princeton, NJ: Princeton University Press. <https://doi.org/10.2307/j.ctv550cbm.31>
- Thibaut, J. W., & Kelley, H. H. (1959). *The social psychology of groups*. New York, NY: Wiley Publishing.
- Trzcińska, A., Podsiadłowski, W., Golus, P., & Wieleśzczyk, J. (2024). Self-esteem and materialism in preschool children: The role of theory of mind and parental material indulgence. *OSF Preprints*. <https://doi.org/10.31219/osf.io/7x2ef>
- Unanue, J., Oriol, X., Oyanedel, J. C., Rubio, A., & Unanue, W. (2021). Gratitude at work prospectively predicts lower workplace materialism: A three-wave longitudinal study in Chile. *International Journal of Environmental Research and Public Health*, 18(7), 3787–3803. <https://doi.org/10.3390/ijerph18073787>
- Unanue, W., Rempel, K., Gómez, M. E., & Van den Broeck, A. (2017). When and why does materialism relate to employees' attitudes and well-being: The mediational role of need satisfaction and need frustration. *Frontiers in Psychology*, 8, 1755. <https://doi.org/10.3389/fpsyg.2017.01755>
- Wachtel, P. L., & Blatt, S. J. (1990). Perceptions of economic needs and of anticipated future income. *Journal of Economic Psychology*, 11(3), 403–415. [https://doi.org/10.1016/0167-4870\(90\)90020-A](https://doi.org/10.1016/0167-4870(90)90020-A)

- Watkins, P. C., Woodward, K., Stone, T., & Kolts, R. L. (2003). *Gratitude Resentment and Appreciation Test (GRAT)* [Database record]. APA PsycTests. <https://doi.org/10.1037/t60955-000>
- Watson, J. J. (2003). The relationship of materialism to spending tendencies, saving, and debt. *Journal of Economic Psychology*, 24(6), 723–739. <https://doi.org/10.1016/j.joep.2003.06.001>
- Weinstein, N., Przybylski, A. K., & Ryan, R. M. (2009). Can nature make us more caring? Effects of immersion in nature on intrinsic aspirations and generosity. *Personality and Social Psychology Bulletin*, 35(10), 1315–1329. <https://doi.org/10.1177/0146167209341649>
- Williams, G. C., Hedberg, V. A., Cox, E. M., & Deci, E. L. (2000). Extrinsic life goals and health-risk behaviors in adolescents. *Journal of Applied Social Psychology*, 30(8), 1756–1771. <https://doi.org/10.1111/j.1559-1816.2000.tb02466.x>
- Winter, D. D. N. (2004). Shopping for sustainability: Psychological solutions to overconsumption. In T. Kasser & A. D. Kanner (Eds.), *Psychology and consumer culture: The struggle for a good life in a materialistic world* (pp. 161–178). Washington, DC: American Psychological Association. <https://doi.org/10.1037/10658-005>
- Wong, N., Rindfleisch, A., & Burroughs, J. E. (2003). Do reverse-worded items confound measures in cross-cultural consumer research? The case of the material values scale. *Journal of Consumer Research*, 30(1), 72–91. <https://doi.org/10.1086/374697>
- World Values Survey. (2020). *World Values Survey: 2020 [Worldwide dataset]*. <http://www.worldvaluessurvey.org>
- Yamaguchi, M., & Halberstadt, J. (2012). Goals and well-being in New Zealand. *New Zealand Journal of Psychology*, 41(2), 5–10.
- Yang, B., Chen, S., Su, S., & Chen, F. (2021). Outwardly strong but inwardly weak, pretensions to wealth? Exploring the impact of heterogeneous high self-esteem on materialism in a self-threat situation. *Acta Psychologica Sinica*, 53(6), 667–680. <https://doi.org/10.3724/SP.J.1041.2021.00667>
- Zayed, A. A. (2019). Popular culture and consumerism in underdeveloped urban areas: A study of the Cairene quarter of Al-Sharrabiyya. In D. S. Teixeira (Ed.), *Popular culture and political identity in the Arab Gulf States* (pp. 287–312). New York, NY: Routledge. <https://doi.org/10.4324/9780429035289-12>
- Zhao, J., Tibber, M. S., & Butler, S. (2023). The association between materialism and perceived relationship quality in young adults. *Current Psychology*, 42(27), 23437–23447. <https://doi.org/10.1007/s12144-022-03353-y>