

Research article

## Materialism and its influence on the subjective quality of life of Brazilian adolescents

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### Abstract

The main objective of this study was to analyze the influence of materialism on adolescents' subjective quality of life. For the empirical research, 705 questionnaires were applied in public and private schools in the city of João Pessoa (Brazil), resulting 667 valid responses of adolescents between 12 and 18 years of age, mostly women and from private schools. The sampling was by conglomerates and the analysis of the data was quantitative. From the results, it was not possible to confirm the direct influence of the level of materialism on the level of subjective quality of life. The limitations were presented by not having identified a high level of materialism among the adolescents surveyed. The social contribution of this study is the identification of factors that may increase adolescent consumption.

**Keywords:** materialism, subjective quality of life, adolescents.

### Materialismo y su influencia en la calidad de vida subjetiva de los adolescentes brasileños

#### Resumen

El principal objetivo de este estudio fue analizar la influencia del materialismo en la calidad de vida subjetiva de los adolescentes. Para la investigación empírica fueron aplicados 705 cuestionarios en escuelas públicas y privadas de la ciudad de João Pessoa (Brasil), resultando 667 respuestas válidas de adolescentes entre 12 y 18 años de edad, la mayoría mujeres y de estudiantes de escuelas privadas. El muestreo fue por conglomerados y el análisis de los datos fue cuantitativo. A partir de los resultados, no se pudo confirmar la influencia directa del nivel de materialismo sobre el nivel de calidad de vida subjetiva. Las limitaciones se presentaron por no haber identificado un alto nivel de materialismo entre los adolescentes encuestados. La contribución social de este estudio es la identificación de factores que pueden aumentar el consumo de los adolescentes.

**Palabras clave:** materialismo, calidad de vida subjetiva, adolescentes.

#### Resumo

### Materialismo e sua influência na qualidade de vida subjetiva dos adolescentes brasileiros

O principal objetivo deste estudo foi analisar a influência do materialismo na qualidade de vida subjetiva dos adolescentes. Para a pesquisa empírica foram aplicados 705 questionários nas escolas públicas e particulares da cidade de João Pessoa (Brasil), resultando em 667 respostas válidas de adolescentes entre 12 e 18 anos de idade, a maioria mulheres e de estudantes de escolas particulares. A amostragem foi por conglomerados e análise dos dados foi quantitativa. A partir dos resultados, não foi possível confirmar a influência direta do nível de materialismo nível de qualidade de vida subjetiva. As limitações foram apresentadas por não ter identificado um alto nível de materialismo entre os adolescentes pesquisados. A contribuição social deste estudo é a identificação de fatores que podem aumentar o consumo dos adolescentes.

**Palavras chave:** materialismo, qualidade de vida subjetiva, adolescentes.

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## 1. Introduction

Faced with the growing incentive for consumption, a group of marketing scholars has been concerned about the wellbeing of people, not simply because they consume but because of the consequences that unbridled consumption can have on individuals' lives. For this reason, it is necessary to study consumer behavior, a theme that is inherent in the academic field of marketing. It is known that the main focus of this field is exchanges that require at least two parties, agents of demand and supply, to be fulfilled (Rossi & Hor-Meyll, 2001).

In this context of consumption, attention is drawn to studies regarding the adolescent public, which have gained special attention today, although this object of research is not commonplace in Brazil. Internationally, researchers have already considered the role of adolescents in the family consumption process to have great relevance and importance, in addition to the effects that consumption can cause on their lives.

According to the Brazilian Child and Adolescent Statute (ECA, by the abbreviation in Portuguese of *Estatuto da Criança e Adolescente*), adolescents are minors aged between 12 years and nearly 18 years (specifically, 17 years and 11 months) old. The experiences of adolescence begin the process of constructing behavioral patterns, including for adulthood. Thus, adolescence is a phase of important transformations, whether physical, psychological or social (Chaplin & John, 2010).

Carr, Gottlieb, Lee and Shah (2012) also mentioned that adolescence includes an increase in consumer capacity and that this contributes to the need to build an identity, resulting in a change in consumer practices that are oriented to improve personal presentation and popularity, often driven by advertising and means of social communication. For Carr et al. (2012), this moment is a *new consumerism* that reveals the growing concern with materialism.

Materialism can be understood based on definitions from the main authors who study the theme, such as the definition by Belk (1985), which affirms that materialism is a posture that includes traits related to possessiveness, envy and lack of generosity. A few years later, Richins and Dawson (1992) defined materialism as a personal value that emphasizes the importance of possessing materials, and divided it into three parts: centrality, happiness, and success.

A significant number of studies regarding adolescents with materialistic characteristics emerged in the 1970s. This research asserted that materialism found in adolescents would be related to a number of factors, such as ineffective family communication patterns and greater peer communication (Churchill & Moschis, 1979; Moore & Moschis, 1981).

In fact, the theme of materialism is of great relevance to the lives of people, especially adolescents, from both macromarketing and micromarketing perspectives. It has a strong influence on the satisfaction of individuals in terms of their ways of consuming, and this satisfaction affects

their quality of life (QOL). In this sense, the focus is on the idea that the adolescent consumer himself has about his wellbeing, the so-called subjective QOL (SQOL).

Constanza et al. (2007) explain that QOL can be divided into two categories: objective and subjective. The characteristics of objective QOL indicators include economic production indexes, literacy rates, and life expectancy, among others, that can be gathered without a subjective evaluation by the evaluated individuals. Subjective indicators are motivated by the observation that many of the objective indicators can only evaluate opportunities that individuals have to improve their QOL, but are dependent on tools such as interviews or measurement scales that bring together the evaluations of the lived experiences of respondents. They are individuals' personal judgements regarding their life satisfaction and their wellbeing (Constanza et al., 2007).

It should also be noted that Sirgy (1998) consider the terms *SQOL*, *satisfaction with life and subjective wellbeing* as synonyms. According to the approach of the World Health Organization Quality of Life Assessment (The WHOQOL Group, 1995), QOL is the individual's perception of their position in life in the context of the cultural systems and values in which they live, and their goals, expectations, standards and concerns.

Thus, the present research has as a basic premise the analysis of the influence of materialism on the SQOL of adolescents to elucidate whether there is a relationship between materialism and the QOL perceived by the subjects themselves and whether this relationship is positive (existent) or negative (non-existent). In this sense, to determine whether this influence exists, the following question is asked: does materialism influence the SQOL of adolescents in the city of João Pessoa?

The objective of this research is to analyze the influence of materialism on the SQOL of the adolescents of the city of João Pessoa. It is characterized as a descriptive research with a quantitative approach to data analysis, the sampling was by a conglomerate. To achieve this goal, the article begins by portraying materialism in adolescence. Then, SQOL and its relation to materialism are discussed. Subsequently, the consequences of QOL, whether positive or negative, for the construction of the research hypothesis are elucidated. Next, the methodology, the results of the study and the final considerations are presented.

## 2. Theoretical framework

In this section, we present the theoretical reference of materialism in adolescence, the subjective quality of life and relation with materialism, and the factors considered positive and negative to materialism. The latter considers the relationship that personal well-being and satisfaction with life have as factors that modify from the level of materialism.

Materialism is a term that is closely related to topics such as conspicuous consumption, symbolic consumption, and hedonism. This term is based on acquisition and possession of material goods. These topics are at the heart of

the primary discussion about materialism.

Belk's (1984) study defines materialism as the importance that a consumer attaches to worldly possessions. Thus, at the highest levels of materialism, such possessions take center stage in the life of the individual and are observed as powerful sources of satisfaction and dissatisfaction (Belk, 1984). In a continuation of the aforementioned study, Belk (1985) affirmed that the materialistic stance includes traits related to the personality of possessiveness, envy and lack of generosity and that reflect the importance of the consumer in relation to the possession of goods.

Richins and Dawson (1992) attributed to materialism the importance of possessions and acquisitions of material goods with regard to achieving life goals, in addition to the degree of importance that consumers attribute to the centrality of these goods in their lives. As a complement, Flouri (2005) indicates that materialism is related to conspicuous expenditure and possessions.

There are countless factors that permeate this style of consumption. Dittmar and Pepper (1994) indicate that a central aspect of materialism is the use of goods and consumption of goods to communicate the personal and social identity of the individual. Richins and Dawson (1992) described the following dimensions that appear consistently, based on the definition of materialism according to theorists: centrality (possessions play a central role in life), happiness (possessions are linked to wellbeing) and success (success is judged in terms of possessions). In summary, it is a consensus among the authors cited that the relationship of materialism to the possessions and acquisitions of goods expresses the personal and social identity of the individual.

In this sense, adolescent consumers are now being recognized as an increasingly important group in terms of their buying behavior, attitudes, and impact on the national economy. Significant increases have been observed recently, not only in terms of the total adolescent population, but also the amount of money that adolescents are contributing as consumers (Gentina & Chandon, 2014; Zerach, 2016).

According to Gentina and Chandon (2014), adolescence is considered a period of identity crisis, and at this stage, individuals seek to achieve identity through the acquisition and accumulation of consumer objects. This assertion corroborates the claims of other authors (Chaplin & John, 2010; Bottomley, Nairn, Kasser, Ferguson & Ormrod, 2010), who see adolescence as a period of discoveries, doubts and uncertainties with a strong tendency to search for material possessions as a means of establishing identity and achieving long-sought prestige. The main difference of adolescents from the past to the present day is precisely the importance they attach to material goods, which is much greater today than before (Gentina & Chandon, 2014).

The factors that may exert some type of influence on the level of materialism among adolescents are diverse. Nepomuceno and Laroche (2015) point out that many personality traits can increase or reduce the negative effects and consequences of materialism. For this reason, Duh (2015) constructed a theoretical model that presents the anteced-

ents of materialism, which are divided into inborn factors, socialization of the individual, cross-cultural socialization, psychological factors and family experiences in childhood. Each antecedent has several factors to evaluate.

This study analyses the consequences, not the antecedents, of materialism. In this sense, the consequence of the influence of antecedents on the individual with a high level of materialism may be satisfaction or dissatisfaction with their life (Sirgy, 1998). Several studies have shown that more materialistic people are less satisfied with their lives than are less materialistic people. This is because more materialistic people believe that any given level of possessions is insufficient for their living conditions (Sirgy, 1998).

To contemplate this aspect of life satisfaction, the following topic defines SQOL by considering the aspects of satisfaction or dissatisfaction with life as a consequence of materialism in adolescence.

### 2.1. SQOL and its relationship with materialism

Initially, it should be emphasized that the origin of the concept of QOL arose after World War II as economic prosperity and increased purchasing power associated satisfaction, wellbeing and psychological achievement with various aspects of life (Barros, Gropo, Petribú & Colares, 2008).

Regarding the concept of QOL, Schalock, Bonham and Marchand (2000) state that it is embedded as both a notion of awareness and a general principle of service provision. In the sense of the notion of sensitization, the authors agree that the concept gives a sense of reference and orientation, from the perspective of the individual, focusing on the person and the environment of the individual. As a principle of service provision, the concept of QOL has become a social construct that is used as a fundamental principle to improve and increase the perceived quality of a person's life.

Constanza et al. (2007) affirm that QOL is divided into two categories: objective and subjective. Barros et al. (2008) also defended this assertion when they declared that studies investigating QOL use both objective and subjective indicators. Indicators of objective QOL include economic data such as economic production indexes, literacy rates, and life expectancy, among others. These can be gathered without a subjective evaluation of the individuals evaluated.

Regarding subjective indicators (SQOL), Constanza et al. (2007) state that they are driven by the observation that many of the objective indicators can only assess opportunities that individuals have to improve their QOL but are dependent on tools such as interviews or measurement scales that bring together the assessments of the interviewees' lived experiences. Therefore, SQOL, according to Constanza et al. (2007), consists of personal judgements about one's satisfaction or dissatisfaction with life and one's individual wellbeing.

In marketing, QOL is understood and termed as the consumer's wellbeing or satisfaction with his or her life. Sirgy (2011) explains that the concept of QOL in marketing has been defined as marketing practice designed to improve customer wellbeing while preserving the wellbeing of oth-

er stakeholders (e.g., shareholders, distributors, suppliers, employees, the local community and the environment). Thus, the term commonly used in marketing is consumer wellbeing, which, according to Lee and Sirgy (2004), has several conceptions in the marketing literature.

Still regarding the same terms, Paschoal and Tamayo (2008) conclude that happiness and wellbeing are terms that are mixed in the scientific literature but generally considered synonymous. Similarly, Albuquerque and Troccoli (2004) already stated that researchers treat welfare with diverse nomenclature, including happiness, satisfaction, state of mind, and positive affect. Therefore, a subjective evaluation of the QOL is considered by the authors.

The variable *wellbeing* also has a strong connection with materialism (Karabati & Cemalcilar, 2010). For Ryff and Keyes (1995) wellbeing comprises positive relationships with others, personal growth, purpose in life and autonomy. In this manner, people acquire materials seeking the feeling of being well with themselves and with others, supplying needs and wants.

Lee and Sirgy (2004), however, present four conceptualizations of marketing-oriented QOL: (1) consumer satisfaction with product acquisition, (2) consumer satisfaction with material goods, (3) consumer satisfaction with both acquisition and ownership of material products, and (4) consumer satisfaction across the various stages of the product life cycle (Lee & Sirgy, 2004).

According to Oleś (2016), the definition of QOL emphasizes not only its subjective nature but also its cultural and environmental context, in addition to personal goals and values. Likewise, the formation of personal identity implies identification with specific values and choice of life goals, and on the other hand, this process is deeply rooted in its sociocultural context.

Because the concept of QOL varies according to the view of each scholar, social psychologists have recognized that the individual is not a one-dimensional construct but rather multidimensional. This is because the mind of each person consists of several "I's" (self-concepts). These aspects that form the self-concept are situated in several psychological domains of life (Sirgy, 1998). Barros et al. (2008) corroborate what was observed when they affirm that the concept of QOL has been of interest in the areas of health and social sciences and, although there are different definitions, there is agreement among researchers that it is a multidimensional concept that includes wellbeing (material, physical, social, emotional and productive) and satisfaction with various areas of life (including work, family, health, leisure, and friends, for example).

Taking into account that the purpose of this paper is to analyze the influences that materialism exerts on adolescents' SQOL, Sirgy (1998) developed a theory that explains how materialism leads to dissatisfaction with life. He argued that materialistic people tend to employ expectations based on affective feelings (e.g., ideals, merit, and expectations based on needs) in their assessments of their standard of living rather than employing cognitive-based expectations (e.g., past, predictive and expectations based on

ability).

Later, Sirgy (2009) explained that expectations based on affective feelings are evaluative and lead to experiencing intense emotions. These emotions can be positive feelings of exaltation, joy and pride, in addition to negative feelings of anger, envy and possessiveness. In contrast, cognitive expectations are based on generating cognitive elaboration of standard of living assessments (Sirgy, 2009).

Indeed, it is important to consider subjective indicators, which are concerned with the subjective experience of individuals in their lives, because they are based on people's reports about their own perceptions, feelings, and reactions. In this manner, it is clear that in addition to indicating the terms subjective wellbeing or SQOL, the main focus is the internal judgement of wellbeing respondents rather than what policy makers, academics, or others consider to be important (Andrews, 1974; Diener & Suh, 1997; Siqueira & Padovam, 2008).

## 2.2. Factors considered to be consequences of materialism

According to Duh (2015), materialism has some positive value for individuals, companies and society. Materialistic individuals are considered to be people who work hard and for longer hours to earn more money, and thus satisfy their desire for goods rather than using that time for leisure activities (Duh, 2015; Duh, Benmoyal-Bouzaglo, Moschis, & Smaoui, 2015). In addition, Goldberg, Gorn, Peracchio and Bamossy (2003) found that young materialists tend to buy more, have more knowledge about products and services, and are more sensitive to advertising and promotional efforts. They can therefore be early adopters, opinion makers and opinion leaders amongst their peers.

Belk (1988) suggests that possessions can help teens and adults manage their identities. Wong et al. (2011) also views materialism as a means of reinforcing self-related needs such as belongingness, clarity, efficacy, the need for a meaningful existence, and self-esteem. They argue that material acquisitions and possessions may make individuals more socially attractive or the search may be a conjunctural response to a self-esteem threat, especially when people feel they are socially excluded (Duh, 2015).

However, the effects may be totally contrary to the individuals if the resources run out, or this desire for belonging and a meaningful existence becomes an obsession that ends up interfering negatively with the individual's life satisfaction and wellbeing.

Materialism is predominantly associated with negative connotations and consequences. Individuals who seek material wealth have a personal commitment to power (they want to impress, control, and manipulate others), so they tend to forgo investment in intrinsic values, such as family, friends, community contribution, and self-realization that are believed to be the drivers of life satisfaction and wellbeing (Duh, 2015).

Indeed, the high goals and materialistic expectations that materialistic individuals set for themselves tend to cause such individuals to evaluate their standard of living



unfairly or poorly. This negatively affects their wellbeing and satisfaction with life. The research of [Baker, Moschis, Benmoyal-Bouzaglo and Dos Santos \(2013\)](#) demonstrated that in several countries, such as the USA and some European and Asian countries, there is a negative relationship between materialism, satisfaction with life and wellbeing ([Duh, 2015](#)).

According to [Belk \(1985\)](#), the association of materialism with selfishness, envy, covetousness, and avarice can lead to some negative outcomes, such as unhappiness. These effects have also been demonstrated for young people. [Goldberg et al. \(2003\)](#) found that the focus of young Americans on materialism caused them to have negative attitudes towards school and poor performance in school. The authors believe that this negative effect may push them to be sexually promiscuous or addicted to drugs to the point of committing suicide ([Duh, 2015](#)).

Unlike non-materialists, who are content with much less in life and can accept low-paying jobs, materialists have an insatiable desire for the highest-paid professions and high incomes ([Duh, 2015](#)). With these attitudes, some go to the extent of committing crimes and fraud to increase their wealth. They end up having relatively low levels of wellbeing and happiness and are more prone to depression ([Roberts, Tanner & Manolis \(2005\)](#)). It should be emphasized that people with a weaker focus on intrinsic values (e.g., caring for others and society) experience dissatisfaction with life ([Duh, 2015](#)).

[Watson \(2003\)](#) argues that the numerous desires for consumer goods, travel and leisure can drain the savings of the materialists and cause them to accumulate large debts. Materialism not only impoverishes personal income but also has negative consequences for the natural environment. This is because the resources of nature are being used at unnecessarily high prices to satisfy the incessant desires of materialists for material goods ([Duh, 2015](#)).

In an evaluation of the balance between public and private spending over the last decade, it was observed that support for products and services such as education, public health services, public safety, recreation and culture have been decreasing in support of private spending on material comfort ([Duh, 2015](#)).

### 2.3. Satisfaction with life

Researchers have consistently demonstrated that there is a negative relationship between materialism and psychological wellbeing or satisfaction with life ([Sheldon & Krieger, 2014](#)). [Kasser and Ahuvia \(2002\)](#) suggest that materialistic ambitions are relatively empty in terms of potential benefits to wellbeing. Students with highly materialistic characteristics also reported low self-realization, increased unhappiness and anxiety. In this sense, it is the excessively materialistic orientation that leads to dissatisfaction with life ([Duh, 2015](#)).

A materialist, according to [Richins and Dawson \(1992\)](#), is one who seeks happiness through the acquisition and possession of material objects. However, [Sharma and Mal-](#)

[hotra \(2010\)](#) suggest that happiness comes from social support, economic and physical wellbeing, and individual characteristics such as personality traits, self-esteem, and a sense of humor.

This result of materialism will be analyzed in terms of the personal, relational, environmental and general QOL domains included in the instrument quantifying the SQOL of adolescents used in this research, *Youth Quality of Life instrument (YQOL)* by [Patrick, Edwards and Topolski \(2002\)](#).

In view of the previously mentioned influence of high levels of materialism on SQOL, the following hypothesis was elaborated:

Research hypothesis: the level of materialism of adolescents negatively influences their level of satisfaction with life.

### 3. Methodological procedures

To meet the objective of this research, the sample was composed of students in the proposed age range from four public schools, including two secondary schools (7th to 9th grade) and two high schools (1st to 3rd grade), and two private schools, a secondary school (7th to 9th grade) and a high school (1st to 3rd grade). All schools are located in the city of João Pessoa (Brazil), specifically in the south and west of the city. The sampling technique used was by conglomerate, so that each conglomerate (school) was chosen for convenience. The choice of schools was made possible by the accessibility of the research in them through an agreement by way of authorization from their leaders and the adolescents themselves. The margin of error of this research was 3.8% with 95% confidence interval.

Before going into the field, a pre-test of the instrument was performed with 15 adolescents, which made it possible to investigate the understanding of all the items and the questionnaire as a whole. After adjustments based on the observations during the pre-test, it was possible to go into the field. In this stage, structured questionnaires were administered to the adolescents of these schools in the period from September to October 2015, all during the morning shift. In total, 705 questionnaires were collected, of which 7 were excluded due to incompleteness. Of the remainder, 31 respondents claimed to be 18 years or older, that is, outside the age range of the survey. Thus, the total number of valid questionnaires was 667, with 270 from the public schools and 397 from the private schools.

There were 26 classrooms visited (four classrooms each from grades 7, 9, 1, 2 and 3 and six from grade 8, because in two schools, the classes were small). It is important to emphasize the researcher's care in applying the questionnaires in all the proposed grades and also in keeping the number of students equivalent in each grade, for both public and private schools. All data were collected exclusively by the researcher, who, through a formal document from the Administration Post-graduate Program (PPGA), obtained authorization from the school directors and coordinators so that the research could be performed.

As previously mentioned, the validated Youth Material-

ism Scale (YMS) questionnaire of [Golberg et al. \(2003\)](#) was used for data collection to evaluate materialism among adolescents. The validated Youth Quality of Life instrument (YQOL) of [Patrick et al. \(2002\)](#) was used to evaluate the SQOL of these subjects.

The materialism scale was chosen to determine the level of materialism of the adolescents in this research, because it has an overall comprehension of the phenomenon in these individuals, not according to the subscales, that is, dimensions. Moreover, the SQOL scale allowed identification of the QOL level from the scores, that is, higher scores meant higher QOL. The data were tabulated and analyzed using the SPSS software package, according to the literature used as the basis for the study.

Then, the statistical procedures were performed with preliminary exploratory analysis, identification of outliers (values considerably different compared to the others, which may alter the study results) and missing values (the questions left blank) ([Hair, Anderson, Tatham & Black, 2005](#)).

Simple correspondence analysis, which is a multivariate technique for exploratory analysis of categorical data, was performed. It converts an array of non-negative data into a particular type of chart that displays the rows and columns so that the relationships between the rows, between columns, and between rows and columns can be interpreted ([Carvalho, Vieira & Coran, 2002](#)).

### 3.1. Study scales

In this section the scales used to develop the study are presented. The first is the materialism scale for adolescents that was validated by [Golberg et al. \(2003\)](#) and the later one is the Youth Quality of Life instrument - YQOL developed in its second version by [Patrick et al. \(2002\)](#).

#### 3.1.1. Materialism scale for youth

Considering the main scales previously presented, [Dos Santos and De Souza \(2013\)](#) indicate that there are still low numbers of Brazilian researchers and scientific studies focused on child and adolescent behaviors. This is justified by the difficulties encountered in surveying these individuals, such as partial questionnaire completion or limited understanding of the variables in quantitative surveys ([Moschis & Moore, 1982](#); [Achenreiner, 1997](#); [Goldberg et al., 2003](#)).

In fact, [Bottomley et al. \(2010\)](#) observed that most research has focused on adult materialism rather than that of children or adolescents. In addition, [Bottomley et al. \(2010\)](#) questioned the validity of the use of adult materialism scales in the context of understanding materialism experienced by children and adolescents. Thus, owing to these difficulties and based on the questionnaires developed by [Belk \(1985\)](#) and [Richins and Dawson \(1992\)](#), [Goldberg et al. \(2003\)](#) identified the need to construct an instrument capable of measuring positive or negative attitudes towards materialism in children and adolescents, and named it the Youth Materialism Scale (YMS). [Golberg et al. \(2003\)](#) justify

the construction of this instrument given its language and form, which previously matched with the understanding of adults. The YMS research tool is based on 10 statements in a simplified and adapted form, with the vocabulary comprehensible to individuals of this age group ([Dos Santos & De Souza, 2013](#); [Srikant, 2013](#)).

[Goldberg et al. \(2003\)](#) cite four reasons for developing the materialism scale for youth: (1) youth orientation for purchases, (2) the responses of young people to marketing initiatives, (3) market interaction between young people and their parents, and (4) broader issues (e.g., youth happiness). The youth materialism scale is composed of 10 items, which consist of some items related to the scales of [Richins and Dawson \(1992\)](#) and [Belk \(1985\)](#). [Goldberg et al. \(2003\)](#) reported an alpha coefficient of 0.79 for their scale. [Chaplin and John \(2010\)](#) studied the role of parents and peers in influencing youth materialism. One of the measures used in the study was the YMS scale, which exhibited satisfactory internal consistency, 0.81 ([Srikant, 2013](#)). The YMS scale is, above all, the scale chosen to verify the level of materialism of the adolescents in this research because it has a global scope of materialism in these individuals, and is not dependent on subscales.

#### 3.1.2. Youth Quality of Life instrument - YQOL

The version of the Youth Quality of Life instrument (YQOL) described by [Oleś \(2016\)](#) is a self-assessment method used to measure QOL perceived in young people aged 12-18 years. Therefore, it is appropriate for the age group to be studied in the present research. The first version of this scale was elaborated by Edwards, Huebner, Connell and [Patrick \(2002\)](#). In that work, focus groups were employed to define the dimensions. The second version was developed by [Patrick et al. \(2002\)](#), who validated the scale. The scale consists of 41 statements about the subjective assessment of QOL, covering four areas: personal (sense of self), with 14 items; relational (relationships), also with 14 items; environmental (environment), with 10 items; and general quality of life (general quality of life), with 3 items ([Patrick et al., 2002](#); [Salum, Patrick, Isolan, Manfro & Fleck, 2012](#); [Oleś, 2016](#)).

The respondent answers questions on a 10-point scale, ranging from 1 (strongly disagree) to 10 (strongly agree or completely agree). The items reflect the perception of the subject and evaluation of the different aspects of life; therefore, raw scores that describe the SQOL or the QOL perceived in the four domains are obtained, in addition to the total result. Higher scores represent better QOL. According to [Salum et al. \(2012\)](#), all areas exhibited good internal consistency (Cronbach's alpha 0.77-0.96) and test-retest reliability (intraclass correlation coefficient = 0.74-0.85), with satisfactory coefficients ([Patrick et al., 2002](#); [Salum et al., 2012](#); [Oleś, 2016](#)).

## 4. Analysis and discussion of results

Initially it is important to highlight how each of the scales

applied in this study behaved in its internal validations. These were measured with the Cronbach Alpha reliability measure and the dimensions were evaluated using the Factor Analysis (FA) and their measurements: KMO (Kaiser-Meier-Olkin), MSA (measure of FA application adequacy) and test of sphericity. The number of factors was obtained by the criterion of the number of eigenvalues greater than 1. For the KMO index values between 0.5 and 1.0 are acceptable, so below 0.5 indicates that the factor analysis is unacceptable (Hair, Anderson, Tatham & Black, 2005).

In the factor analysis and the internal validation of the materialism scale used in the field research, it can be highlighted that the alpha measure of this scale was 0.677 considered acceptable but not desirable (> 0.70), as shown in table 1.

Another highlight is the alpha for the deleted item (if any of the items in the scale are removed) that presents an interval contemplating the alpha with all items, showing balance in the scale. That is, if you delete some item from the scale, the overall trust will not be affected.

The KMO measure was 0.760 (above 0.50), which is acceptable for the application of Factor Analysis (FA). One can confirm that the applied instrument reflects three dimensions that make up the latent trait materialism. It is important to note that according to Golberg et al. (2003) this scale is one-dimensional; that is, there is no division of dimensions, since it measures general materialism.

These three factors can be explained by the fact that the Golberg et al. (2003) scale was constructed from the Richins and Dawson (1992) scale composed of three dimensions: centrality, happiness and success. Similarly, the scale of Belk (1985) also identifies three dimensions: possessiveness, envy and lack of generosity.

With the analysis of the three factors reported by FA, each item of the scale and the six dimensions (Richins and Dawson and Belk), it was possible to identify that the factors correspond to the centrality and success dimensions of Richins and Dawson (1992) and Belk's possessiveness (1985). That is, even though it is a scale that measures materialism in general, from the factor analysis it was pos-

sible to group the items into three dimensions that result in a mixture of the findings of the two main authors that Golberg et al. (2003) used for the elaboration of the scale.

These three factors explain approximately 50.1% of the total variability of information contained in the 10 items. The sphericity hypothesis is rejected with p-value <0.001, a condition that is required for the application of the FA model.

One of the curiosities aroused by this research, but that did not constitute the objectives, was whether there would be a significant difference in the levels of materialism of adolescents in public and private schools. In the analysis performed, the averages for each item of the materialism scale divided by type of institution reflect that although some items presented significant differences (p-value <0.05), in general it did not show a difference in the level of materialism by institutions. The averages of items by institutions were close.

Regarding the subjective quality of life scale, it is important to highlight the good results of the alpha reliability measure of cronbach alfa, 0.913, considered excellent. And just like the scale of materialism, the alpha for the excluded item presents an interval contemplating the alpha with all items, also showing a balance in the scale.

As shown in table 2, the KMO measure was 0.919. This is considered excellent for the application of factor analysis (FA). It can be confirmed that the applied instrument reflects four dimensions that make up the latent trait of subjective quality of life. This fact corroborates the four dimensions in the scale of Patrick et al. (2002): relational, personal, environmental and general quality of life.

These four factors explain approximately 43.04% of the total variability of the information contained in the 41 items. The sphericity hypothesis is rejected with p-value <0.001, a condition that is required for the application of the FA model.

Table 3 presents an initial description of the variables institution and sex. There were more students from private schools than public schools.

In this sense, it is important to highlight that the re-

**Table 1.** Factor analysis and internal validation to evaluate the application of the materialism instrument

Factors	Eigenvalues	% Variation explained	% Cumulative explained variance
Factor 1	2.712	27.124	27.124
Factor 2	1.244	12.437	39.560
Factor 3	1.055	10.553	50.113
Bartlett's sphericity test		Statistic	793.033
		P-value	< 0.001
Kaiser-Meier-Olkin (KMO)			0.760
Measure of FA application adequacy (MSA)			0.574
Community			0.246 to 0.815
Scale Cronbach Alpha			0.677
Alpha from Cronbach to the deleted item			0.624 to 0.697

Source: own elaboration.

**Table 2.** Factor analysis and internal validation to evaluate the application of the instrument subjective quality of life of adolescents

Factors	Eigenvalues	% Variation explained	% Cumulative explained variance
Factor 1	11.460	27.950	27.950
Factor 2	2.610	6.365	34.315
Factor 3	1.910	4.658	38.973
Factor 4	1.671	4.076	43.049
Bartlett's sphericity test		Statistic	8553.973
		P-value	< 0.001
Kaiser-Meier-Olkin (KMO)			< 0.001
Measure of FA application adequacy (MSA)			0.736 to 0.959
Communality			0.223 to 0.677
Scale Cronbach Alpha			0.913
Alpha from Cronbach to the deleted item			0.907 to 0.921

Source: own elaboration.

searcher took care to standardize class numbers between grades and schools, yet there was still this disparity. This is explained by the high dropout rate in public schools, as evidenced by a recent survey of the basic education school census (Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira - INEP, 2015). The number of initial enrolments (beginning of the year) is much greater than the number of graduates (end of the year), which is not the case with private schools. The predominance of females in the sample is also evident.

**Table 3.** Description of the variables "institution" and "sex"

Institution	n	%	Sex	n	%
Public	270	40.5	Female	373	55.9
Private	397	59.5	Male	297	44.1
Total	667	100	Total	667	100

Source: own elaboration.

Age was divided according to the phases of adolescence described by Chaplin and John (2007) and presented in table 4. The original terms were as follows: early adolescence, initial; middle adolescence, middle; late adolescence, final. In view of the percentages listed in table 4, the distribution of age groups is well balanced.

**Table 4.** Description of the sample by age range

Age range	n	%
Initial phase (12-13 years)	219	32.8
Middle phase (14-15 years)	212	31.8
Final phase (16-18 incomplete years)	236	35.4
Total	667	100

Source: own elaboration.

In this sense, for a better clarification of how the materialism scale and consequently its results behaved, a table containing the descriptive measures of the mentioned scale was elaborated. This, according to Golberg et al. (2003), has only one dimension because it is to measure materialism in

general. These data are presented in table 5.

**Table 5.** Descriptive measures of materialism

Mean	2.69
Standard deviation	1.44
Coefficient of variation (%)	53.47
Cronbach Alpha / Confidence interval	0.677 / 0.624 – 0.697
Agreement percentage	31.7%
P-value	< 0,001

Source: own elaboration.

A high level of materialism was not identified among the respondents of this research, as observed from the values for the mean (2.69) and the percentage of agreement (31.7%). For a five-point scale, high mean values would be 4 to 5, and a high per cent agreement would be greater than 40% to 50%. Another datum to be observed is the coefficient of variation - CV (%), which has a high value of 53.47%. High variability in the responses may have made it difficult to observe the phenomenon and thus draw conclusions about the theory of this specific scale. It is also worth noting the Cronbach's alpha measure of the materialism scale was 0.677, which is considered acceptable, but a desirable value is greater than 0.70. This may have also compromised the identification of high levels of materialism in these adolescents.

Table 6 summarizes the YQOL results with descriptive measures of each dimension and of the scale as a whole. It is important to highlight the good results of the Cronbach's alpha reliability measure, all dimensions and the scale as a whole above 0.70.

In view of all the results presented, by item, size and total scale, there is strong evidence that the adolescents surveyed do not have a high level of agreement (above 80%), that is, they are not fully satisfied with their lives. However, they are more than 50% in agreement, which confirms that dissatisfaction was not evidenced (low levels of agreement). The total of the scales is 67.1% of agreement. Therefore, these adolescents have an intermediate level of agree-



**Table 6.** Summary of the descriptive measures for each dimension of the QOL

Dimensions	Mean	Standard deviation	CV (%)	Alpha de Cronbach /Confidence interval	% Agreement
Relational	7.65	2.70	35.22	0.862 / (0.846 a 0.877)	64.2%
Environmental	8.28	2.28	27.69	0.748 / (0.718 – 0.777)	74.3%
Personal	7.63	2.65	34.73	0.762 / (0.732 – 0.789)	63.1%
General Quality of life	8.36	2.34	28.02	0.816 / (0.791 – 0.839)	75.7%
Full scale	7.85	2.58	32.86	0.913 / (0.907 – 0.921)	67.1%

Source: own elaboration.

ment, that is, there is relative satisfaction with the items portrayed in their QOL.

The hypothesis elaborated from the objective of this work refers to the relationship between the level of materialism and the level of satisfaction with life. To test this hypothesis, the level of materialism of adolescents influences the level of satisfaction with life, we applied several statistical tests to evaluate this relationship.

The analysis of variance model with the materialism score as the dependent variable and the level of QOL categorized as low, medium or high as the independent variable presents an F test p-value of 0.978, indicating that there is no significant difference in the mean materialism score according to the level of QOL. To be considered significant, the condition is p-value <0.05.

A logistic regression model was also used. The four dimensions of QOL presented odds ratios (the odds ratio is the ratio of the chance of an event occurring in one group to the chance of it occurring in another group) that were insufficient to explain the variability in the dependent variable of the dichotomous materialism score, that is, the same conclusion as the previous model was reached.

The correspondence analysis model with one dimension did not present a simple interpretation for the association between materialism and SQOL with both categorized. The Pearson's correlation coefficient between these two variables (materialism and SQOL) was zero and not significant, as was also true for the Spearman correlation.

Therefore, the linear relationship does not describe well the association between these two variables. Then, a regression was sought with non-linear models: logarithm, quadratic, cubic, composition, inverse, logistic, exponential, growth and power. None of these models satisfactorily explained ( $R^2 < 0.02$ ) the relationship between materialism and SQOL. Thus, it is very unlikely that this relationship is occurring in individuals with this profile, refuting the hypothesis that adolescent materialism results in low SQOL.

## 5. Final considerations

Two scales were applied, one to measure the level of materialism of adolescents and the other to measure the SQOL of these individuals. It should be noted that a high level of materialism of the respondents was not detected; rather, the percentage was close to the intermediate level. This fact may have contributed to the refutation of the hy-

pothesis. This may be considered a limitation, as highlighted in the comments on limitations and recommendations for future research.

As a result, the research hypothesis was refuted. According to the statistical tests used, there was no significant relationship between materialism and SQOL. That is, this study did not demonstrate that the higher the level of materialism, the lower the satisfaction with life. This result contradicts the claims of theorists about the existence of this relationship, according to the quotations highlighted below.

This hypothesis was theoretically supported by empirical studies reported by [Kasser and Ahuvia \(2002\)](#), which suggest that materialist ambitions are relatively empty in terms of potential benefits to wellbeing. Still regarding the relation of materialism with satisfaction with life, [Duh \(2015\)](#) emphasizes that students with highly materialistic characteristics also reported low self-realization, increased unhappiness and anxiety. He ends by saying that it is the excessively materialistic orientation that leads to dissatisfaction with life ([Duh, 2015](#)).

We aimed to analyze the influence of materialism on the SQOL of adolescents. This influence was not identified based on the results obtained with the sample, perhaps because a high level of materialism was not detected among the respondents. Additionally, it was difficult to establish a relationship with SQOL because according to the authors, the relationship exists when high levels of materialism are identified.

The study sought to identify whether materialism influences adolescents' SQOL. The answer to this question according to the results obtained is that materialism influences the SQOL of the adolescents when these subjects present a high level of materialism. However, in the present research, materialism was intermediate; thus, it was not possible to confirm this relation from the sample.

The social contributions of these themes are important because children and adolescents are increasingly targeted as consumers of profit-driven marketing, without also thinking about the wellbeing of the individual. This group is considered more vulnerable and influential. In this sense, the contribution of a study such as this one is the identification of the factors that may cause a more consumeristic behavior of adolescents and enhanced materialistic characteristics (attachment and identification with possessions), in the sense that material goods occupy a central place in

one's life and one's own happiness and are indicators of success. Negative aspects such as possessiveness, lack of generosity and envy may also be associated with materialism. This can cause children to become frustrated adults, and a high level of materialism may lead to consumerism, unbridled consumption and debt, and may thus cause dissatisfaction with one's wellbeing because the individual thinks that his possessions are insufficient.

Finally, limitations in this study were highlighted. The first is that the level of materialism among the adolescents surveyed was not considered high. The materialism scale, as shown, presented a reliability of 0.677, an acceptable value, but a desirable value would be greater than 0.70. This means that the materialism scale was not very reliable, that is, the latent trait that it set out to identify was not a striking feature in the sample of this research. This fact may have been motivated by being a peculiar audience, which may suffer influences from colleagues in the responses, as well as deceiving oneself, i.e., not pointing out what truly occurs in their daily lives. Faulty interpretation of the issues, even though the scales were chosen carefully with language specific to the public in question, may have also played a role.

One suggestion for future research is to conduct further research, such as an in-depth interview or experiment that can better identify specific aspects of materialism. In this manner, it will be possible to help build a more reliable scale. Perhaps an experiment is ideal for the development and construction of a specific scale for this age range and for the identification of the main themes of this research in the Brazilian reality.

### Conflict of interest

The authors declare no conflict of interest.

### References

- Achenreiner, G. B. (1997). Materialistic values and susceptibility to influence in children. *NA-Advances in Consumer Research*, 24, 82-88.
- Albuquerque, A. S., & Tróccoli, B. T. (2004). Desenvolvimento de uma escala de bem-estar subjetivo. *Psicologia: teoria e pesquisa*, 20(2), 153-164.
- Andrews, F. M. (1974). Social indicators of perceived life quality. *Social Indicators Research*, 1(3), 279-299.
- Baker, A. M., Moschis, G. P., Benmoyal-Bouzaglo, S., & Dos Santos, C. P. (2013). How family resources affect materialism and compulsive buying: A cross-country life course perspective. *Cross-Cultural Research*, 47(4), 335-362. <https://doi.org/10.1177/1069397112473074>
- Barros, L. P. D., Gropo, L. N., Petribú, K., & Colares, V. (2008). Quality of life assessment for adolescents: a literature review. *Jornal Brasileiro de Psiquiatria*, 57(3), 212-217.
- Belk, R. W. (1984). Three scales to measure constructs related to materialism: Reliability, validity, and relationships to measures of happiness. *NA-Advances in Consumer Research*, 11, 291-297.
- Belk, R. W. (1985). Materialism: Trait aspects of living in the material world. *Journal of Consumer research*, 12(3), 265-280.
- Belk, R. W. (1988). Possessions and the extended self. *Journal of consumer research*, 15(2), 139-168.
- Bottomley, P. A., Nairn, A., Kasser, T., Ferguson, Y. L., & Ormrod, J. (2010). Measuring childhood materialism: refining and validating Schor's Consumer Involvement Scale. *Psychology & Marketing*, 27(7), 717-739.
- Carr, D. J., Gottlieb, M. R., Lee, N. J., & Shah, D. V. (2012). Examining Overconsumption, Competitive Consumption, and Conscious Consumption from 1994 to 2004 Disentangling Cohort and Period Effects. *The ANNALS of the American Academy of Political and Social Science*, 644(1), 220-233.
- Carvalho, J. D., Vieira, S. R., & Moran, R. C. C. P. (2002). Análise de correspondência-uma ferramenta útil na comparação de mapas de produtividade. *Revista brasileira de ciência do solo*, 26, 435-443.
- 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.
- Chaplin, L. N., & John, D. R. (2010). Interpersonal influences on adolescent materialism: A new look at the role of parents and peers. *Journal of Consumer Psychology*, 20(2), 176-184.
- Churchill, G. A., & Moschis, G. P. (1979). Television and interpersonal influences on adolescent consumer learning. *Journal of consumer research*, 6(1), 23-35.
- Costanza, R., Fisher, B., Ali, S., Beer, C., Bond, L., Boumans, R., ... & Gayer, D. E. (2007). Quality of life: An approach integrating opportunities, human needs, and subjective well-being. *Ecological economics*, 61(2), 267-276.
- Diener, E., & Suh, E. (1997). Measuring quality of life: Economic, social, and subjective indicators. *Social indicators research*, 40(1-2), 189-216.
- Dittmar, H., & Pepper, L. (1994). To have is to be: Materialism and person perception in working-class and middle-class British adolescents. *Journal of Economic Psychology*, 15(2), 233-251.
- Dos Santos, T., & De Souza, M. J. B. (2013). Materialismo entre crianças e adolescentes: O comportamento do consumidor infantil de Santa Catarina. *Revista Gestão Organizacional*, 6(1), 45-58.
- Duh, H. I. (2015). Antecedents and Consequences of Materialism: An Integrated Theoretical Framework. *Journal of Economics and Behavioral Studies*, 7(1), 20-35.
- Duh, H. I., Benmoyal-Bouzaglo, S., Moschis, G. P and Smaoui, L. (2015) Examination of young adults' materialism in France and South Africa using two life-course theoretical perspectives. *Journal of Family and Economic Issues*, 36, 251-262.
- Edwards, T. C., Huebner, C. E., Connell, F. A., & Patrick, D. L. (2002). Adolescent quality of life, part I: conceptual and measurement model. *Journal of adolescence*, 25(3), 275-286.
- Flouri, E. (2005). Adult materialism/postmaterialism and later mental health: The role of self-efficacy. *Social Indicators Research*, 73(1), 1-18.
- Gentina, E., & Chandon, J. L. (2014). The role of gender on the frequency of shopping with friends during adolescence: Between the need for individuation and the need for assimilation. *Recherche et Applications en Marketing (English Edition)*, 29(4), 32-59.
- Goldberg, M. E., Gorn, G. J., Peracchio, L. A., & Bamossy, G. (2003). Understanding materialism among youth. *Journal of Consumer Psychology*, 13(3), 278-288.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (2005). Análise multivariada de dados (5ª Edição). Porto Alegre: Bookman.
- Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira - INEP. (2015). Resultados das matrículas iniciais na Creche, Pré-Escola, Ensino Fundamental e Ensino Médio no Ensino Regular das redes estaduais e municipais e o total de matrículas nessas redes de ensino. Retrieved from (11-nov-2015): [http://download.inep.gov.br/educacao\\_basica/censo\\_escolar/resultado/2015/Anexo\\_I\\_Preliminar\\_2015.pdf](http://download.inep.gov.br/educacao_basica/censo_escolar/resultado/2015/Anexo_I_Preliminar_2015.pdf).
- Karabati, S., & Cemalcilar, Z. (2010). Values, materialism, and well-being: A study with Turkish university students. *Journal of Economic Psychology*, 31(4), 624-633.
- Kasser, T., & Ahuvia, A. (2002). Materialistic values and well-being in business students. *European Journal of Social Psychology*, 32(1), 137-146.
- Lee, D. J., & Sirgy, M. J. (2004). Quality-of-life (QOL) marketing: Proposed antecedents and consequences. *Journal of Macromarketing*, 24(1), 44-58.
- Moore, R. L., & Moschis, G. P. (1981). The role of family communication in consumer learning. *Journal of Communication*, 31(4), 42-51.
- Moschis, G. P., & Moore, R. L. (1982). A longitudinal study of television advertising effects. *Journal of Consumer Research*, 9(3), 279-286.
- Nepomuceno, M. V., & Laroche, M. (2015). When materialists intend to

- resist consumption: the moderating role of self-control and long term orientation. *Journal of Business Ethics*, 143, 467-483.
- Oleś, M. (2016). Dimensions of Identity and Subjective Quality of Life in Adolescents. *Social indicators research*, 126(3), 1401-1419.
- Patrick, D. L., Edwards, T. C., & Topolski, T. D. (2002). Adolescent quality of life, part II: initial validation of a new instrument. *Journal of adolescence*, 25(3), 287-300.
- Paschoal, T., & Tamayo, A. (2008). Construção e validação da escala de bem-estar no trabalho. *Avaliação psicológica*, 7(1), 11-22.
- 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.
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of personality and social psychology*, 69(4), 719.
- Roberts, J. A., Tanner, J. F., & Manolis, C. (2005). Materialism and the family structure-stress relation. *Journal of Consumer Psychology*, 15(2), 183-190.
- Rossi, C. A. V., & Hor-Meyll, L. F. (2001). Explorando novas trilhas na pesquisa do consumidor. *Encontro Nacional da Associação de Pós-Graduação e Pesquisa em Administração*, n° 25, Campinas, Brasil.
- Salum, G. A., Patrick, D. L., Isolan, L. R., Manfro, G. G., & Fleck, M. P. (2012). Youth Quality of Life Instrument-Research version (YQOL): psychometric properties in a community sample. *Jornal de pediatria*, 88(5), 443-448.
- Schalock, R. L., Bonham, G. S., & Marchand, C. B. (2000). Consumer based quality of life assessment: A path model of perceived satisfaction. *Evaluation and program Planning*, 23(1), 77-87.
- Sharma, A., & Malhotra, D. (2010). Social-psychological correlates of happiness in adolescents. *European Journal of Social Sciences*, 12(4), 651-61.
- Sheldon, K. M., & Krieger, L. S. (2014). Service job lawyers are happier than money job lawyers, despite their lower income. *The Journal of Positive Psychology*, 9(3), 219-226.
- Siqueira, M. M. M., & Padovam, V. A. R. (2008). Bases teóricas de bem-estar subjetivo, bem-estar psicológico e bem-estar no trabalho. *Psicologia: teoria e pesquisa*, 24(2), 201-209.
- Sirgy, M. J. (1998). Materialism and quality of life. *Social indicators research*, 43(3), 227-260.
- Sirgy, M. J. (2009). Can QOL Researchers Learn Anything "Scientifically" Meaningful from Popular Cultural Icons Who Speak on Happiness and Well-Being? *Journal of Happiness Studies*, 10(6), 769-771.
- Sirgy, M. J. (2011). Theoretical perspectives guiding QOL indicator projects. *Social Indicators Research*, 103(1), 1-22.
- Srikant, M. (2013). Materialism in consumer behavior and marketing: a review. *Management and Marketing Challenges for the Knowledge Society*, 8(2), 329-352.
- The WHOQOL Group. (1995). The World Health Organization quality of life assessment (WHOQOL): position paper from the World Health Organization. *Social Science and Medicine*, 41(10), 1403-1409.
- Watson, J. J. (2003). The relationship of materialism to spending tendencies, saving, and debt. *Journal of Economic Psychology*, 24(6), 723-739.
- Wong, N., Shrum, L. J., Arif, F., Chugani, S., Gunz, A., Lowrey, T. M., ... & Scott, K. (2011). Rethinking materialism: A process view and some transformative consumer research implications. *Journal of Research for Consumers*, (19), 1-4.
- Zerach, G. (2016). The Mediating Role of Emptiness and Materialism in the Association Between Pathological Narcissism and Compulsive Buying. *International Journal of Mental Health and Addiction*, 14(4), 424-437.