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Measuring the antecedents of university students' obsessive–compulsive buying behaviour of apparel: the mediating role of brand attachment

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Abstract

This research provides value to marketing researchers and professionals in regard to what triggers customers to purchase compulsively by studying the impact of materialism and self-congruence on the obsessive–compulsive buying behaviour (OCBB) of apparel by university students and the mediating role of brand attachment on these relationships. A total of 322 online questionnaires were gathered from university students who shop frequently. The PLS-SEM approach was used for data analysis using the SmartPLS V.3.3.3. software. The findings show that there is a relationship between Materialism, Brand attachment, self-congruence, and OCBB and that both self-congruence and materialism influence brand attachment. Finally, Brand attachment mediates both the relationship between Materialism and OCBB, as well as that between Self-congruence and OCBB. This is one of the first researches to study the mediating role of brand attachment on both relationships in one conceptual model and in an emerging market. The suggested implications include the launch of an awareness campaign on the negative consequences of OCBB on young adults, especially with the current economic conditions. In addition to implications for apparel brand managers on how they can utilize the established relationships to enhance their marketing plans which could increase long-term profitability.

Keywords Obsessive–Compulsive buying behaviour, Materialism, Self-congruence, Brand attachment, PLS-SEM, Mediation testing

Introduction

Consumers often have a strong desire to purchase their favourite brands to satisfy internal feelings. In some cases, they shop uncontrollably which may result in financial and psychological trouble, which can be identified as obsessive–compulsive buying behaviour (OCBB) [3, 32, 60]. In this research, we investigate the

antecedents of OCBB. Upon investigating the previous literature, the authors pinpointed the most commonly mentioned relevant factors leading to OCBB as materialism, self-congruence, and brand attachment. Furthermore, the authors hypothesized the mediating role of brand attachment on the relationship between materialism and OCBB, and the relationship between self-congruence and OCBB.

Materialism is defined as the belief that the acquisition of material products is an indication of success as well as the key to happiness and that acquiring material products reflects how individuals define themselves; making them unable to listen to the voice of reason before purchasing

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[32, 46]. On the other hand, brand attachment is known as the bond connection between the consumers and the brand, which is formulated by the self-connection and prominence of various brands as attachment is an emotional bonding developed through familiarity and physical contact. Brand attachment is also defined by Aureliano-Silva, Strehlau, and Strehlau [2], Gunwan [17], Hemsley-Brown [26] and Rabbanee, Roy, Spence [49] as the reliance of consumers on brand consumption to secure emotional well-being. Self-congruence is a phenomenon which is concerned with how consumers choose specific brands to be able to describe their actual or ideal personality [9].

There is a paucity of studies conducted on obsessive-compulsive buying behaviour in emerging market contexts (e.g., Egypt), which makes the role of the specific contextual surroundings, and the unique consumption habits in these contexts worth studying [10, 11, 41, 42]). This research focuses on university students compulsively buying apparel; this is because Lee et al. [33] indicate that the age of an Obsessive-Compulsive buyer typically begins in the late teens to the early twenties, as this is the age when they start expressing their shopping obsession and pre-purchase anxiety because they have just outgrown their school uniforms and resort to apparel and accessories as a token of their identity where branded apparel has taken a function for its symbolization of identity and status. Furthermore, Mishra et al. [43] and Ong et al. [46] indicate that university students have sustainable money to spend, and are easily influenced by materialistic values, thus, are more prone to obsessive-compulsive buying behaviour. As for the choice of the apparel context, studies show that appearance-related products such as shoes, clothes and accessories are what obsessive-compulsive buyers most frequently purchase [25, 27, 45, 54].

This study is of significance to the Egyptian society as a whole with special emphasis on the younger generation in that it sheds light on the adverse consequences of OCBB. The study should be of concern to policymakers and policy executors (The Ministry of Youth and Sports) in Egypt to help guide sustainable consumption in critical times as the severe economic conditions that the country is facing with an inflation rate soaring to 40.3% [1]. Moreover, with another wave of upcoming devaluation of the Egyptian pound and keeping in mind that most branded apparel is imported thus this could further accentuate the problems of OCBB regarding wasted foreign currency.

Moreover, it is believed that this dark side of consumer buying behaviour is imperative to be studied for the consequences it can have on the finances of consumers, their families and the whole society. Such adverse consequences include severe financial debts and psychological

distress for individuals in addition to excessive consumption, which sheds additional burden on the ecological system as it is against sustainable consumption practices which are highlighted by the United Nations sustainable development goal 12, which calls for 'responsible consumption and production' [41]. The following sections start with a review of the relevant literature, followed by the adopted methodology, results and finally the conclusion.

Theoretical background

The following sections cover a review of the literature pertinent to the main constructs under investigation by this research.

Obsessive-compulsive buying behaviour

Obsessive-compulsive buying behaviour (OCBB) is mostly defined as uncontrollable purchase behaviour and buying disorder that comes from the urge to excessively purchase products by consumers. This urge is typically induced by negative feelings; as many consumers who suffer from obsessive-compulsive buying also suffer from emotional disorders such as anxiety, and guilt, which in turn leads to impaired judgement which can cause harm to them and others. Consumers look to find relief from the negative feelings they suffer from, and by attempting to purchase products that they believe reflect their actual or ideal selves [6, 9, 13, 14, 28].

Causes of obsessive-compulsive buying include but aren't limited to low self-esteem, lack of confidence, materialism, and anxiety; therefore, OCBB, as mentioned, is an attempt to get rid of these feelings. However, the exact opposite of the expected result is what happens, as the phenomenon of OCBB results in a continuum of reactions including monetary problems, waste of time, and overall negative feelings and/or behaviours [9, 37, 54].

One of the most common consequences of obsessive-compulsive buying is post-purchase guilt as well as other negative consequences such as debt, family conflict, legal problems, and marital problems that go beyond the financial distress it causes [13, 25, 53].

Financial distress caused by OCBB, which happens to almost one in every twenty adults; according to Ong et al. [46], obsessive-compulsive buying often leads to loan dependence when the cycle of purchasing continues and a person eventually becomes unable to deposit future purchases, this usually causes individuals to fall in financial trouble that affects the entire society and the economy in the long run as the dependence on loans and financial troubles grow.

As for the characteristics of an obsessive–compulsive buyer, they cannot be determined accurately; however, the age of an obsessive–compulsive buyer typically begins from the late teens to the early twenties, as this is the age when they'll start being able to express their shopping obsession and pre-purchase anxiety. Both genders are liable to obsessive–compulsive buying; however, around 80% of obsessive–compulsive buyers are women, which makes them more prone to obsessive–compulsive buying than men (Lee et al. 2015).

Materialism

According to Le [32] and Mishra, et al. [43], materialism is the set of beliefs held by individuals about the importance of possessions in their lives. Górnik-Durose [16] and Omar et al. [45] define materialism as the value a person connects to wealth and acquisitions in order to achieve a desired end-state such as happiness.

Materialism has been characterised as a feature of modern cultures that may appear in the form of selfishness, envy, and greed as it is a value that makes people pursue filling a personality gap or social status, respect, happiness, and spiritual satisfaction by owning possessions and money. Namely, materialistic individuals seek the three dimensions they believe possessions have, those being success, happiness, and centrality. Centrality is defined as the quality of being of great importance. Consumers think that success can be reached when they own something that makes them impressive. It gives them centrality and happiness, and that is why they see acquisition and possession as a crucial part of their life that they must have [7, 16, 35, 54].

For these connections, materialistic individuals perceive acquisition as highly associated with their image and social status, the primary goal is to obtain property. They use possessions to determine their success relative to others and use them as motivation to work; that's why scholars believe that materialism is the major source of problems for the individual that may lead to greed, anxiety, guilt, and anti-social attitudes such as paranoia. These negative effects could lead to unhappiness and low self-esteem and ultimately to overall lower levels of ethical standards; therefore, materialistic individuals resort to irresponsible behaviour that often has dire consequences such as OCBB [25, 53, 60].

Predictors of materialism have been narrowed down in this paper into two main themes; psychological and social predictors of materialism, which are explained as follows. First, psychological predictors of materialism are exhibited when consumers feel insecurity dissatisfaction, self-doubt, and unhappiness, which can lead them to become materialistic; therefore, individuals compensate by orienting towards materialism to reduce their feelings of

insecurity [16, 25]. As a result, much of today's consumer behaviour appears to be focused on purchasing products and services for psychological rather than economic and utilitarian benefits Duh [8]. Second, the social predictors of materialism are reflected in the Comprehensive Social Assessment theory which postulates that people tend to set social rank based on comparing their material possessions against others as a means of establishing social standings [8, 27]. That is why it has been suggested that materialists have personal life dissatisfaction and lower levels of happiness in their lives. In addition, materialistic people tend to have high levels of anxiety, which would lead to the assumption that materialism would positively correlate and predict obsessive–compulsive buying [54].

Researchers have found that the OCBB can be explained as a mixture of high levels of materialism and low impulse control, making materialism a consistent predictor of obsessive–compulsive buying tendencies; which leads researchers to believe that materialism is positively and directly related to OCBB and that image-based goods such as shoes, clothes, and appearance-related goods, and accessories are what obsessive–compulsive buyers purchase most frequently [27, 45, 54]. Moreover, according to Mishra et al. [43] and Ong et al. [46], university students are easily influenced by materialistic values and are more prone to OCBB. Accordingly, it has been hypothesized that:

H1 Materialism has a significant influence on the obsessive-compulsive buying behaviour of university students

Brand attachment

Rasool, Cerchione, and Salo, [50] defined brand attachment as the degree to which a consumer is willing to get attached to a certain brand and make repetitive purchases from its products, which typically involves cognitive and emotional types of attachments that can be used by companies to design and reach their target customers.

According to Shimul [57], brand attachment shows four streams of research of which two could support the conceptual framework of this study. The first of which is the Attachment Theory which was originally explained by Bowlby [5] as the link or bonding of an infant to its first physical and emotional caregiver, usually the mother. The Attachment Theory has its origin in psychology and has been often adopted by marketing researchers to investigate people's ability to maintain and develop a bond with a specific target [4, 32]. Marketing researchers have used the theory of attachment extensively to explain interpersonal relationships and brand attachment in the marketing field, highlighting the fact that consumers' interest plays a significant role in establishing brand relationships

that can end up being attachment figures [2], Lim., et al., 2019. In the context of the psychological theory of attachment, consumers form attachments to brands as a way to ensure their emotional well-being through consumption. Taking that into consideration, marketing researchers analyzed why and how consumers find a relationship between themselves and the brands in order to form an attachment [2, 52].

The second is the Connection-Prominence Attachment Model (CPAM), explained by Park et al. [47] as joining the brand and the consumer's self-concept. Each brand has a symbolic concept or a personality, one that is designed to form an association between an individual and their desired role in life, in a group, or even their self-image [52]. Brand personality is defined as the characteristics of a certain brand that an individual feels are associated with their own personality [30].

A brand with a personality that meets an individual's ideals increases the feeling of being ideal themselves; therefore, a consumer viewing their own ideal person in a brand grabs their attention and helps this brand form an attachment with the person [50]. According to Le [32], emotional connections and loyalty to a brand can result in high purchase behaviour as consumers tend to compulsively buy products that would satisfy their need for possession. Emotional attachment to a brand increases in the presence of high self-brand congruence that urges the love of material possessions which leads to obsessive-compulsive buying. Making individuals who love a brand and are emotionally attached to it experience a desire to possess more of the products the brand has to offer in order to feel more secure and comfortable [29, 32]. Therefore, the researchers set forth the following hypothesis:

H2 Brand attachment enhances obsessive-compulsive buying behaviour.

Self-congruence

Self-congruence is one of many cognitive consistency theories that suggest that individuals are in a constant struggle to develop and maintain synchronization between their behaviours, attitudes, and beliefs; as a discrepancy between those can result in anxiety, tension, and overall psychological distress [56].

The consumer's self-concept is essential and can be used as the basis for multiple decisions. The buying and displaying of a certain brand by consumers can be a symbolic tool that they use to show other people how valuable they are and to what extent they are committed to their self-concept. It is found that consumers purchase products not for their utility but for what they

mean as consumers purchase products that match their own image (Postica, Doru, and Antonio, 2015; [52]).

The collection of individuals' feelings and thoughts that they use to refer to themselves is their self-concept [52], Self-concept is all about the individual's thoughts and feelings [48], and according to Tissera and Jayarthne [58], the self-congruity is a dimension of the self-concept which is referred to as the relation between the self-image of consumers and the image of their preferred product or brand through two viewpoints which are the actual and ideal self. The distinction between both is that the actual self is what and whom the consumers think they are in reality and is consistent with the Self-verification Theory, whereas the ideal self is how they hope to be and is often shaped by imagination and vision of ideals and is consistent with the Self-enhancement Theory [13, 44, 52]. Therefore, self-congruence can be achieved when a customer consumes brands with a personality they regard as similar to their own. This results in either actual self-congruence or ideal-self congruence depending on whether the brand corresponds to one's actual or ideal self [38].

Adding on, Flight and Sacramento [13] stated that obsessive-compulsive buyers are most likely to purchase items related to their appearance in an attempt to verify their self-congruence whether actual or ideal, it is explained that when a consumer gets the feeling that they are about to reach their ideal-self, it increases their self-esteem and overall sense of happiness, which drives consumers experiencing self-congruence to compulsively purchase said brands in an attempt to boost their sense of happiness and self-esteem even if it is a temporary boost.

Consumers who suffer from this obsession, or obsessive-compulsive buyers, often use this behaviour as a means of escapism from their actual self and actual surroundings to a more ideal world in which they hope to be; therefore, they choose brands which reflect their self-congruence. Consumers turn to this behaviour to satisfy their self-image, improve their social image, or more importantly reinforce their ideal selves; the more a consumer feels that they are satisfying their ideal self, the more purchases they engage in. It is indicated that reducing the gap between the actual and ideal self-congruence has an impact on OCBB [9, 29, 44]. Therefore, it has been hypothesized that:

H3 There's a statistically significant relationship between self-congruence and obsessive-compulsive buying behaviour

Materialism and brand attachment and the mediating role of brand attachment on the relationship between materialism and OCBB

Individuals have materialistic preferences when it comes to brands and purchasing from them to achieve social benefits; it was found that materialism can improve the relationship between the self and the brand itself and that materialistic individuals get attached to the non-luxurious brands and products as well [12]. According to Le [32], materialism, which is based on the idea of possessiveness, increases the customer's loyalty and attachment to a certain brand. Therefore, emotional connections and loyalty to a brand can result in high purchase behaviour as consumers tend to compulsively buy products that would satisfy their need for possession. Furthermore, Materialism is related to emotional brand attachment in the aspect of self-esteem, when the self-esteem of the individual is low, such individuals resort to materialistic brands and products because they believe that such products will give them value and enhance their self-esteem [12] Thus:

H4 Materialism has an influence on brand attachment.

Individuals who love a brand and are emotionally attached to it experience a desire to possess more of the products the brand has to offer to feel more secure and at ease, which is internally perceived as worldly meaning attached to the products they are purchasing, meaning that materialism and brand attachment function together to increase the materialistic values consumers gain towards the brands' products and act to trigger obsessive-compulsive buyers to buy more of the brand products [32].

The research conducted by Le [32] proved that brand attachment adds more strength to the relationship between compulsive buying and materialism in the context of emotional connection to preferred brands. This relationship adds to the compulsive buying of consumers and exploits those who have a deep emotional attachment to their preferred brands. Furthermore, the study revealed that materialism and self-brand connection are considered to be two of the many antecedents of brand attachment, that compulsive buying is a result of this brand construct, and that materialism leads to compulsive buying behaviour [12].

According to Japutra et al. [29] and Le [32], emotional connections and loyalty to a brand resulting from cognitive and affective attitudes towards a brand can lead to high purchase behaviours, as consumers tend to compulsively buy products that would satisfy their need for possession. It has been assumed that if consumers love a brand and have developed an emotional attachment to it,

they are inspired to own its products which leads to compulsive buying to satisfy their intense urges and feelings. Therefore, it has been hypothesised that:

H6 Brand attachment mediates the relationship between materialism and obsessive-compulsive buying behaviour

Self-congruence and brand attachment and the mediating role of brand attachment on the relationship between self-congruence and OCBB

The strength of the bond between the brand and the self of the consumer is what defines brand attachment, as it encompasses the similarities between the personalities of both the brand and the consumer which shows the self-brand connections. A consumer can be emotionally attached to a brand through feelings or thoughts towards it, these feelings include connection, passion, and affection towards a brand in comparison to one's self-concept; in addition, the consistency between the idea a consumer has of themselves and the product typically adds to the strength of emotional brand attachment [13, 58]. A brand with a personality that meets an individual's ideals increases the feeling of being ideal themselves; therefore, a consumer viewing their own ideal person in a brand grabs their attention and helps this brand form an attachment with the person [50].

It has been claimed that consumers who see themselves in the brand are more likely to form an emotional brand attachment. Consumers can get more attached to a specific brand because it satisfies their self-concept, enhances their self-image, and resembles their personality. The more the brand strongly expresses the consumer's self-image, the stronger the emotional brand attachment is. [29, 58]. In light of this relationship, the two dimensions of the self-concept are brought up again, as the consumers consider these dimensions when purchasing a brand that would either enhance their actual or ideal self, resulting in actual or ideal self-congruence and ultimately feeling attached to the brands that reinforce this congruence [50].

Rasool et al., [50] stated that the relationship between self-congruence and brand attachment is increased by the degree to which a brand meets the verification and enhancement needs of an individual, and therefore, the study recalled the self-verification theory of actual self-congruence which motivates the individual when their self is confirmed and validated as it helps the individual develop their actual self and be consistent about it; and the self-enhancement theory of the ideal self-congruence which states that a consumer typically looks for the information that increases their level of self-esteem and enhances who they aspire to be.

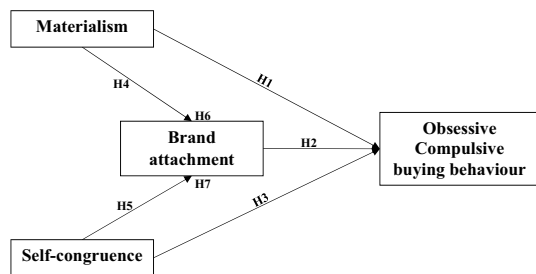


Fig. 1 Conceptual framework

As mentioned, consumers develop a connection with a brand they believe is going to aid in their mission to reach a fit with their actual or ideal self, and such relationships are considered to be an emotional brand attachment that usually leads to brand loyalty; as consumers expressing themselves through brands is a major force that leads to consumers having brand preferences [13].

As a result, the concept of self-congruency has been classified as one of the prominent predictors of emotional brand attachment, as well as other factors that encompass consumers' aesthetic pleasure [56]. Therefore, it has been hypothesised that:

H5 There's a relationship between self-congruence and brand attachment.

Furthermore, drawing on the theory of Self-Concept, as mentioned by Japutra et al. [29] brand attachment develops this bond or emotional link between a person and the brand characteristics that either reflect a person's self-image (actual self) or enhance the person's desire or longing of whom they would like to be (ideal self). As this emotional link between the brand characteristics and the person becomes stronger that is as brand attachment becomes stronger, the more likely the person is tempted to buy more and more of the products of this brand which logically leads obsessive-compulsive buyers to buy more and more. This entails the mediating role of brand attachment which was indicated in previous literature by Kessous et al. [31], Japutra et al. [29], and Lim et al. [34]. Thus, the researchers set forth the following hypothesis:

H7 Brand attachment mediates the relationship between Self-Congruence and obsessive-compulsive buying behaviour.

Methodology

The researchers adopted a conclusive, descriptive approach. Primarily, the researchers resorted to secondary data in terms of the previous literature, which was reviewed pertaining to the constructs under study.

Afterwards, primary data were collected using questionnaires. Primary data was gathered to investigate the research questions and test the research hypotheses. The study's conceptual framework is presented in Fig. 1.

As for the research population, it includes the entirety of university students in Egypt, this is due to Mishra et al. [43] and Ong et al.'s [46] indication that university students have sustainable money to spend and are easily influenced by materialistic values, thus, are more prone to obsessive-compulsive buying behaviour. Because the population frame is inaccessible, the researchers resorted to non-probability convenience sampling, given the need for a timely and efficient data collection process [55]. Data was collected from a sample of 322 university students using online questionnaires by posting the questionnaire to students' Facebook groups, throughout a period of three months from March until June of 2022. The sample size was determined based on Hair et al.'s [19] indication that the violation of data normality may have serious effects in small samples, and that this impact diminishes when sample sizes reach 200 or more observations, accordingly the minimum sample size was set to be 200 responses. However, because it is widely acknowledged that an increase in sample size reduces sampling errors and produces greater statistical power [19, 39, 55], the researchers increased the sample to reach 322 responses.

The authors used measurements from the previous literature; the measures for Materialism were adapted from Türkyilmaz et al. [59] and Islam et al. [27]. As for Self-congruence, measures were adapted from Le [32], and Rabbanee et al. [49]. The mediating variable, Brand Attachment, was measured using adapted statements from Aureliano-Silva, Strehlau, and Strehlau [2], and Türkyilmaz et al. [59]. Lastly, the dependent variable, obsessive-compulsive buying behaviour used statements from Šeinauskienė et al. [54], and Maraz et al. [40], see Table 1 for a list of the measures. The statements were back-translated into Arabic and then back into English to ensure validity. Finally, both versions of the questionnaire were pilot-tested to ensure clarity of the wording for the respondents.

The statistical analysis started with testing for the reliability of the measures, using Cronbach's alpha and Composite reliability values, whereas the validity was measured using the average variance extracted (AVE) values, followed by a descriptive analysis of the demographics of the sample unit, including the frequencies, percentages of the sample in terms of genders, age groups including a calculation of the mean age, respondents' university type, and their shopping frequency. Afterwards, the SmartPLS software V.3.3.3. was used in analysing the data [51] using the partial least squares-structural

equation modelling (PLS-SEM) for hypothesis testing. This is due to the wide application of PLS-SEM in social sciences, where it enables the estimation of complex structural models which include many model relationships without imposing any distributional assumptions on the data [20, 21].

Results

The total number of respondents was 322 respondents, 38.8% of whom were males, while 61.2% were females. The higher percentage of females is explained by the previous literature portraying females to be more

obsessive–compulsive buyers as they have more interest in shopping and seek a fashion identity as they care about their self-congruity [33]. As for the shopping frequency, the highest percentages were consumers purchasing ‘less than once a month’ or ‘once or twice per month’, the percentages were 44.7% and 46.6%, respectively. Tables 1 and 2 reflect the reliability testing and hypotheses testing results.

Table 1 demonstrates the results of the reliability tests using Cronbach’s alpha and Composite reliability whose cut-off value should be 0.7 or higher to indicate adequate convergence or internal consistency as cited in Hair, et al.

Table 1 Reliability and validity testing

Construct	Measures	Cronbach’s alpha	Composite reliability	Average variance extracted (AVE)
Brand attachment	I feel drawn to my favourite clothing brand	0.838	0.891	0.672
	I am willing to pay more for my favourite clothing brand			
	I would feel more secure with my favourite clothing brand			
	I feel a deep connection with others who use the clothing brands I use			
Obsessive–compulsive buying behaviour	I feel driven to shop and spend, even when I do not have the time or the money	0.840	0.887	0.614
	I have a tough time controlling my need to go shopping			
	I buy clothes I do not need or will not use			
	My spending habits are creating problems in my life			
	I feel guilty or ashamed after I go on an excessive shopping trip			
Materialism	Acquiring valuable clothes is important for my happiness	0.844	0.882	0.518
	I would be happier if I could afford to buy more clothes			
	I like to own expensive clothes because this is a sign of success			
	I admire people who own expensive homes, cars, and clothes			
	I like to own clothes that impress people			
	I feel powerful when I buy clothes			
Self-congruence	I enjoy spending money on clothes that are not that practical	0.918	0.948	0.859
	My favourite clothing brand reflects the image of the person I would like to be			
	My favourite clothing brand reflects who I am			
	The personality of my favourite clothing brand is consistent with how I see myself			

Table 2 Hypotheses’ testing results

Relationship	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Decision
H1: Materialism → Obsessive–compulsive buying behaviour	0.464	0.469	0.050	9.361	0.000***	Supported
H2: Brand Attachment → Obsessive–compulsive buying behaviour	0.188	0.178	0.068	2.748	0.006**	Supported
H3: Self-congruence → Brand attachment	0.521	0.522	0.051	10.286	0.000***	Supported
H4: Materialism → Brand attachment	0.302	0.304	0.047	6.371	0.000***	Supported
H5: Self-congruence → Obsessive–compulsive buying behaviour	0.109	0.113	0.066	1.664	0.097*	Supported

*At a Confidence level of 90%, the P-value is statistically significant at 0.1 or below, equal to a T-value of ± 1.65

**While at a Confidence level of 99%, the P-value is statistically significant at 0.01, equal to a T-value of ± 2.58

***Lastly, a Confidence level of 99.9%, indicates the significance level of the P-value at 0.001 or below with a T-value of ± 3.29 [24]

[24]. Accordingly, all statements measuring each of the constructs—were found reliable to a high extent using Cronbach’s alpha, with the highest values belonging to statements measuring self-congruence, however, even though the values were high, they were not so high as to be found redundant. As for the validity testing using the AVE values, all constructs are found valid because all AVE values are above the 0.5 threshold as per Hair, and Alamer, [22].

Table 2 shows the results of the hypothesis testing for the first five hypotheses, as for the first hypothesis stating that materialism has a significant influence on OCBB, the relationship was established at the 99.9% confidence level, given the following values ($\beta=0.464$, $T\text{-Stat}=9.361$, and $P\text{-value}<0.001$), which indicate the presence of a significant relationship. The second hypothesis, which reflects the relationship between brand attachment and OCBB, was statistically significant at a 99% confidence level given the following values ($\beta=0.188$, $T\text{-Stat}=2.748$, and $P\text{-value}<0.01$). As for the third hypothesis, which portrays the relationship between self-congruence and OCBB, it was statistically supported given the values ($\beta=0.521$, $T\text{-Stat}=10.286$, and $P\text{-value}<0.001$), which indicate the presence of a significant relationship between the variables at the 99.9% confidence level. The fourth hypothesis, which reflects the relationship between materialism and brand attachment, was also statistically supported at a 99.9% confidence level, given the following values ($\beta=0.302$, $T\text{-Stat}=6.371$, and $P\text{-value}<0.001$), which indicate the presence of a significant relationship.

Table 3 Explanation factors

Constructs	R square
Brand attachment	0.545
Obsessive–compulsive buying behaviour	0.455

The fifth hypothesis, which states that there is a relationship between self-congruence and brand attachment, was statistically supported as well at a 90% confidence level, given the following values ($\beta=0.109$, $T\text{-Stat}=1.664$, and $P\text{-value}<0.1$), which support the presence of a significant relationship.

As per Table 3, the explanation factors (R^2) values are 0.545 and 0.455 for brand attachment and obsessive–compulsive buying behaviour, respectively. This indicates that both materialism and self-congruence explain 54.5% of brand attachment. And that materialism, brand attachment and self-congruence explain 45.5% of obsessive–compulsive buying behavior.

Zhao et al. [62] indicate that the only requirement to establish mediation is a significant indirect effect. Table 4 reflects the significance of the indirect effect of materialism on obsessive–compulsive buying behaviour through brand attachment, thus, it can be concluded that Brand attachment exhibits a mediating role in the relationship between materialism and obsessive–compulsive buying behaviour. As for identifying the type of mediating effect, the guidelines by Zhao et al. [62] (as recommended by Hair et al. [18] are followed. Given the significance of the relationships between Materialism and Brand attachment (a), that between brand attachment and obsessive–compulsive buying behaviour (b), and the direct relationship between Materialism and Obsessive–Compulsive buying behaviour (c), and because both the “mediated effect” (a x b) and the “direct effect” (c) exist and point at the same direction, it can be concluded that partial complementary mediation exists.

Table 5 shows the significant indirect effect of self-congruence on obsessive–compulsive buying behaviours through brand attachment, which indicates the significance of a mediating role of brand attachment as per Zhao et al.’s [62] guidelines. As for the type of mediating effect, the table reflects the relationships between

Table 4 Mediation testing results for H6

Relationship	Total effects			Indirect effects			
	Original sample (O)	T statistics (O/STDEV)	P Value	Hypothesis	Original sample (O)	T Statistics (O/STDEV)	P Value
Materialism → Obsessive–compulsive buying behaviour	0.521	11.830	0.000	Materialism → Brand attachment → Obsessive–compulsive buying behaviour	0.057	2.407	0.016
Direct effects				Original sample (O)	T statistics (O/STDEV)		P values
Materialism → Brand attachment (a)				0.302	6.371		0.000***
Brand attachment → Obsessive–compulsive buying behaviour (b)				0.188	2.748		0.006**
Materialism → Obsessive–compulsive buying behaviour (c)				0.464	9.361		0.000***
Decision				Supported: Partial complementary mediation			

Table 5 Mediation testing results for H7

Relationship	Total effects			Indirect effects			
	Original sample (O)	T statistics (O/STDEV)	P Value	Hypothesis	Original sample (O)	T statistics (O/STDEV)	P value
Self-congruence → Obsessive–Compulsive buying behaviour	0.207	3.920	0.000	Self-congruence → Brand attachment → Obsessive–Compulsive buying behaviour	0.098	2.813	0.005
Direct effects				Original sample (O)	T statistics (O/STDEV)	P values	
Self-congruence → Brand attachment (a')				0.521	10.286	0.000***	
Brand attachment → Obsessive–Compulsive buying behaviour (b')				0.188	2.748	0.006**	
Self-congruence → Obsessive–Compulsive buying behaviour (c')				0.109	1.664	0.097*	
Decision				Supported: Partial Complementary Mediation			

self-congruence and brand attachment (a'), brand attachment and obsessive–compulsive buying behaviour (b'), and self-congruence and obsessive–compulsive buying behaviour (c'). The significance and similar direction of the mediated effect (a' x b') and direct effect (c') indicate a partial complementary mediating relationship as per Hair et al.'s [18] recommended criteria.

Discussion

The results conducted by the research showed that all hypotheses were accepted and were found to have a positive relationship between the variables. First, the results of testing the first hypothesis (H1) were aligned with the previous studies by Harnish & Bridges [25], Mishra et al. [43] and Ong et al. [46], and Wang et al. [60] as they confirm that materialism has a significant influence on OCBB of university students when applied on apparel. This indicates that university students' OCBB is affected by their materialistic tendencies. The more materialistic the students are, the more their OCBB is evident to enhance their image within their group of peers. Student respondents confirmed that the act of owning and possessing more and more even if it is in an obsessive–compulsive form is important for their happiness and is a sign of their success and status, which aligns perfectly with the findings of previous studies confirming that the dimensions of materialism are main drivers of OCBB [27], especially that consumers mostly engage in OCBB to alleviate negative feelings by inducing temporary feelings of happiness and success.

From testing the second hypothesis (H2), the results clarified that brand attachment has a positive effect on OCBB and that university students are highly exposed to

OCBB. They are consistent with the studies of Flight and Sacramento [13] and Le [32] which indicate that there is a direct positive relationship between brand attachment and OCBB. Therefore, it can be concluded that university students purchase repetitively and excessively the apparel brands to which they are emotionally connected.

The results of testing the third hypothesis (H3) showed that there is a positive relationship between self-congruence and OCBB. Consistent with previous studies discussed [9, 13], Japutra et al., [29, 44], the result that self-congruence has a relationship with OCBB has been an expected one. This research has discussed how self-congruence induces a sense of happiness that emerges when one conforms with either their ideal or actual selves through their purchases. Therefore, seeing that the main source of OCBB is to find an escape even if it is a temporary one from negative feelings. The results indicate that consumers do, in fact, make purchases that match their ideal and/or actual selves, for self-enhancement or self-verification reasons. The results also highlighted how consumers mainly go on shopping sprees to alleviate negative feelings, this makes sense as one would naturally purchase more and more of those products or brands that match their self-concept.

Moving on to the fourth hypothesis (H4), the results reached by the research showed that materialism has a positive influence on brand attachment. The results of this research were consistent with the results of the previous studies as they show that there is a relationship between materialism and brand attachment in the sense that materialism influences the brand attachment of university students [32]. The results of the study confirmed that the consumers' materialistic values and keenness

on possession result in a sense of security that increases their emotional reliance on the purchased brands that they already love.

The results also confirmed that self-congruence has a positive effect on brand attachment as mentioned in the fifth hypothesis (H5). This research has had a similar result to that of previous studies which confirm the significant relationship between self-congruence and brand attachment [38, 50, 52]. The two types of self-congruence – actual and ideal – have positive effects on initiating emotional brand attachment. Previous literature argued that actual self-congruence has a stronger effect on brand attachment, it was clarified by Le [32] that people purchase brands that match their ideal selves. Moreover, the results of this study indicate that individuals mostly purchase the products and get attached to the brand to show who/what they are. Whether consumers purchase to represent their ideal or actual selves, an attachment bond is created between them and the brands. Therefore, the existence of self-congruence enhances brand attachment as it helps with either self-enhancement or self-verification or both.

Brand attachment has historically been studied from a favourable lens, given its positive consequences such as brand love, brand trust and brand loyalty [15, 36], and although a paucity of studies has studied its negative consequences such as anti-brand behaviour [61], this study is one of the few to study obsessive–compulsive buying behaviour as a consequence of brand attachment. Furthermore, the complementary partial mediating role of brand attachment on the relationship between materialism and ocbb and the relationship between self-congruence and OCBB indicates that a portion of the effect of the independent variables (materialism and self-congruence) on OCBB is mediated through brand attachment, whereas the independent variables still explain a portion of OCBB that is independent of brand attachment [62]. This type of mediating relationship also implies the potential existence of an omitted second mediator in the “direct” path (that between the independent variables and OCBB) which can be pursued in future research. Furthermore, this research adds to the extant literature in that it studies an Eastern, oriental, Arab market within the Western-dominated literature, where the literature on obsessive–compulsive buying behaviour is barren in Arab markets [34]. It takes on a macro-level approach in its implications of how policy executors can attempt to limit OCBB with its unfavourable outcomes on the Egyptian economy which is suffering after two revolutions, an unprecedented inflation rate and a constant devaluation of the local currency which in itself is a contribution.

The research limitations include the potential presence of social desirability bias which could have influenced some responses to sensitive questions (i.e., those asking about OCBB and materialistic tendencies). The convenience sampling approach could have influenced the sample representativeness of the population, which accordingly hampers the generalizability of the findings. Further research should control for the influence of social desirability bias, it could also test the relationships across different age groups, cultures, or contexts as these might provide different insights. It should study the influence of other variables (such as anxiety and personal triggers) which might lead to OCBB. Longitudinal research designs could be used to track the stability of the findings over extended periods of time, e.g., studying the stability of brand attachment over time can help in understanding whether self-congruence and materialism have a temporary or long-lasting impact on it. Further research should cover a cross-cultural examination of Eastern vs Western cultures to investigate if the drivers of obsessive–compulsive buying behaviour differ across cultures, it should also use a quota sampling approach reflecting the same population strata into the sample.

Conclusion

Based on the research findings, it makes common sense to present the conclusion from two standpoints; the first reflects the implications for social marketing, which aims to reduce or eliminate the negative effects of OCBB on both the individual and society and the second reflects the implications for businesses which can exploit said behaviour in increasing their customer base. Both are presented in the following sections.

Social marketing implications

The acceptance of the hypotheses postulating the antecedents of OCBB, i.e., materialism, brand attachment, and self-congruence among university students could have the following social marketing implications which help in reducing their negative social, financial, and psychological consequences:

- In coordination with the Ministry of Higher Education and/or the Ministry of Youth and Sports, universities can cooperate on launching a social campaign, on relevant media such as social media, outdoor media, and mass media, raising awareness of the negative consequences of OCBB especially on university students being the population of the conducted campaign.

- Given the positive relationship between materialism and OCBB, it is recommended that the campaign features a psychiatrist mentioning the underlying influence of increased materialism and how it can only give a false and temporary sense of happiness rather than a permanent one.
- Given the positive relationship between self-congruence and OCBB, it is recommended that the campaign also features relevant endorsers such as mental health advocates; for example, Life Coach Nermine El-Behery, to highlight how both ideal and actual self-congruence through clothing brands can be achieved and maintained without excessive shopping, and given the positive relationship between brand attachment and OCBB, it is recommended that relevant endorsers and psychiatrists discuss how brand attachment can subconsciously cause OCBB and they can discuss unhealthy attachment to brands.
- Policymakers should encourage Egyptian banks to promote the responsible use of credit cards especially in advertising messages directed toward young adults, in an attempt to reduce the negative financial consequences of OCBB on university students.

Business implications

Because this study explores one aspect of the dark side of consumer behaviour, OCBB, it helps in developing a more solid understanding of today's consumers and the factors that influence consumers to buy and thus enable more effective marketing strategies for branded apparel which is viewed as a strategic move in the retail industry. Given the statistical support for the fourth hypothesis which indicates that materialism influences brand attachment, this means that consumers are more inclined to feel attached to a brand if it satisfies their materialistic values; therefore, the following recommendations were set forth:

- Concerning the pricing of apparel, brand managers of luxurious or semi-luxurious clothing brands should use a value-added pricing strategy to utilize the influence of materialism on brand attachment. They could study how their brands are positioned in consumers' minds to satisfy their customers' materialistic tendencies.
- Regarding promotions, brands should consider these tendencies among their targeted audiences when designing their promotional activities; for instance, they can promote themselves as unique or one-of-a-kind or as sophisticated and affluent using various means of endorsement such as that

by high-profile celebrities like Hadia Ghaleb who is a fashion blogger and an owner of a fashion brand. Moreover, the induced brand attachment should be kept into consideration by brand managers when designing promotional efforts as well, as developing loyalty programs and personalized messages for their consumers to ensure the sustainability of their customer base.

The fifth hypothesis testing the relationship between self-congruence and brand attachment was statistically supported. Therefore, the following managerial implications were made:

- Brand Managers of apparel should intensify their market research to identify if their target customers relate to them; either with actual or ideal self-congruence. Accordingly, brand managers would be able to use the identification reference group influence in designing their promotional activities by using relevant endorsers to whom customers can relate.
- Brand managers should use behavioural segmentation of their markets focusing on brand attachment and loyalty status of the targeted segments and design new products with a customization option that enhances feelings of ownership and therefore satisfies the benefits sought by customers.
- Apparel brands should emphasise on ideal self-concepts of targeted customers when designing brand personalities as this would make consumers feel that they share similarities with the brand which would lead to brand attachment; for example, Nike often features famous athletes in their promotional efforts which triggers the ideal self-congruence.

Abbreviation

OCBB Obsessive–compulsive buying behaviour

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Declarations

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Not applicable.

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