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MACCARRONE-EAGLEN, Agata <<http://orcid.org/0000-0003-1921-962X>> and SCHOFIELD, Peter <<http://orcid.org/0000-0002-9109-7674>>

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Compulsive Buying Behavior: Re-evaluating its Dimensions and Screening

Dr Agata Maccarrone-Eaglen*

Salford Business School, University of Salford,
Greater Manchester, UK, M5 4WT

Tel: +44 (0)161 295 2033

Email: A.Maccarrone-Eaglen@salford.ac.uk

Biography: Agata is a senior lecturer at Salford Business School, University of Salford. Her main research interest includes the investigation of compulsive buying behaviour, psychology of consumption, and cross cultural studies in consumer behaviour, tourism and marketing.

Professor Peter Schofield

Sheffield Business School, Sheffield Hallam University

Stoddart Building, City Campus

Howard Street, Sheffield, S1 1WB, UK

Tel: +44 (0)114 225 2885

E-mail: p.schofield@shu.ac.uk

Biography: Peter is Professor in Services Management at Sheffield Business School, Sheffield Hallam University. His main research and consultancy interests include consumer decision making and behaviour, gambling behaviour, place marketing, and services marketing and management.

*Corresponding author

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ABSTRACT

Despite the significant research in the consumer behavior literature on compulsive buying behavior (CBB), there is still no general agreement about the dimensionality or diagnostic screening of the disorder. Previous studies have identified two principal dimensions: compulsivity and impulsivity, although more recent strands of theory characterize CBB with reference to loss of self-control and behavioral addiction. This study challenges the impulsive-compulsive paradigm by validating a new model with compulsive and self-control impaired spending dimensions. The model more closely reflects the disorder's ego-dystonic character, routed in an anxiety-based reactive mechanism with uncontrollable buying and an inability to rationalize the behavior as its consequences. The study also develops and cross-validates a new seven-item CBB screening tool, using a comparative analysis with three existing screeners and an independent sample. The findings indicate that compulsive buying results from both compulsive and self-control impaired impulsive elements which are characteristic of behavioral addiction.

Key words: compulsive purchasing; self-control; spending; screening tool.

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INTRODUCTION

Research has shown that compulsive buying behavior (CBB) is typified by an inability to resist a strong inner urge to make repeated purchases in order to provide relief from mental disquiet (d'Astous, 1990; Dittmar, 2005; Elliott, 1994; Kwak et al., 2004; Lejoyeux, et al., 1995; Monahan et al., 1996; Roberts et al. , 2014) and it is also characterized by a loss of control over these purchasing actions (Achtziger et al., 2015; Baumeister, 2002; Baumeister et al., 2008; Shlosser et al., 1994; Tangney et al., 2004). The underpinning psychological strain is caused by anxiety, low self-esteem (De Sarbo and Edwards, 1996; Faber and O'Guinn, 1989; Valence et al., 1988), shame (Yi, 2012) or a negative self-perception within a social context (Roberts et al., 2014). A number of previous studies (e.g. Faber and O'Guinn, 1992; Ridgway et al., 2008; Valence et al., 1988), have focused on understanding the characteristics and causes of this phenomenon, and on the design of measurement instruments to screen consumers for compulsive purchasing in order to assess the extent of the problem in society. However, progress has been hampered by the conflicting theories, relating to CBB's impulsive (e.g. Shoham and Makovec Brencic, 2003) or compulsive nature (e.g. Kwak et al., 2004). These theories are reflected in the varied configurations of co-existing screening tools and the conflicting results from screening (Manolis and Roberts, 2008). This study attempts to address this issue by evaluating both CBB's theoretical dimensions and the existing screening tools in light of recent theoretical advances. It develops a new screening tool which addresses the disagreement in the literature; more specifically, it distinguishes more effectively between compulsive and non-compulsive buying behavior and between mild and severe CBB, and is applicable to services as well as products. The study then cross validates the instrument by favorably comparing its predictive validity with three existing screeners using a second, independent, sample and the same discriminating points between compulsive and non-compulsive buyers and between mild and severe cases. This is particularly valuable considering the variation in the proportion of populations affected by CBB reported in previous studies which have used different samples, different screeners, and different discriminating criteria. This research is therefore important for the consumer behavior discipline in general and for public policy research and practice in particular because CBB is now

recognized as a psychological disorder with serious long term psychological and financial consequences (Dittmar, 2005; Frost et al., 1998), and is becoming more widespread (Black, 2007). CBB has also been defined as a form of behavioral addiction which has psychopathological commonalities with substance abuse and other addictive behaviors (Aboujaoude, 2014; Albrecht et al., 2007; Andreassen, 2014; Davenport et al., 2012; Foxall et al., 2008; Hartston, 2012).

LITERATURE REVIEW

Characteristics and dimensions of compulsive buying behavior

Compulsive purchasing has been defined as an irresistible urge to buy, a dependency on shopping, which in extreme circumstances can lead to the loss of self-control, and by withdrawal syndromes ranging from uneasiness to psychosomatic indisposition (Achtziger et al., 2015; Scherhorn et al., 1990). This can result in a cognitive and practical concern with buying unnecessary products to compensate for negative emotional states (Dodd et al., 2005; Williams and Grisham, 2011) and counterbalance unmet needs and desires (Neuner et al., 2005; Thornhill et al., 2012). Compulsive consumption is also a coping mechanism for anxiety-related symptoms (Elliott, 1994), which may be caused by social pressure (Baker et al., 2016). CBB is prevalent among women (Achtziger et al., 2015; Black, 2007; Dittmar, 2005; Garcia, 2007; Kilbourne and LaForge, 2010; Neuner et al., 2005) and among homosexuals (Black et al., 2001; Dodd et al. 2005). The prevalence of CBB in populations reported in previous studies indicates that it has a limited though significant impact in societies: 6% (Faber and O'Guinn, 1989), 7% (Koran et al., 2006), 8.9% (Ridgway et al., 2008), 9% (Roberts and Jones, 2001), 10% (Dittmar, 2005), 15% (Yurchisin and Johnson, 2004), and 17% (Kwak et al., 2004).

Previous research suggests that CBB exhibits both compulsive and impulsive traits (Schlosser et al., 1994), although there is no clear agreement about the extent to which each dimension characterizes the disorder. Some studies have conceptualized CBB exclusively as an impulse control disorder (ICD) (e.g. Shoham and Makovec Brencic, 2003). However, ICD is defined as *ego-syntonic*, i.e. consistent with the individual's self-perception, and implies a degree of rationality in response to external stimuli (McElroy et al., 1994). Scherhorn et al. (1990) and Shoham and Makovec Brencic (2003) refer, in particular, to in-store decision making in response

to external stimuli. Hollander and Allen (2006) allege that impulsiveness in compulsive buying only relates to the initial phase of arousal, Edwards (1993) has argued that CBB is an extreme form of impulsive buying, while others state that it is a continuous and chronic failure in self-regulation and therefore much more serious than impulse buying (Faber and O'Guinn, 1992; Faber and Vohs, 2003).

CBB exhibits characteristics consistent with obsessive compulsive disorder (OCD) (Frost et al., 1998; Kwak et al., 2004). In contrast to ICD, compulsive behaviors are defined as *ego-dystonic* because the intrusive, irrational thoughts and obsessions which drive compulsions are inconsistent with the individual's self-perception (McElroy et al., 1994); the compulsions enable sufferers to quickly find a cognitive solution to their anxiety igniting a reactive mechanism with an action (De Sarbo and Edwards, 1996; Elliott, 1994; Lejoyeux et al., 1995; Valence et al., 1988). Some researchers believe that there is commonality between CBB and both ICD and OCD (e.g. Ridgway et al., 2008) and Valence et al. (1988) argue that a lack of self-constraint is the distinguishing characteristic between compulsive and impulsive buyers, while Rodriguez-Villarino et al. (2006) state that the degree of predominance of one aspect over another relates to CBB's intensity: the more afflicted have a higher grade of compulsiveness whereas the less afflicted have a higher grade of impulsiveness.

By comparison, De Sarbo and Edwards (1996) believe that CBB results from a combination of impulsive and compulsive urges and addiction. Indeed, Andreassen (2014) recently argued that shopping disorder is best understood from an addiction perspective. This view is shared by Aboujaoude, (2014), Albrecht et al.(2007), Davenport et al.(2012) and Hartston (2012) who allege that CBB is linked to specific addiction symptoms such as craving, withdrawal and loss of self-control buying has been highlighted in previous research (Baumeister, 2002; Faber, 2004). Self-control is defined as an individual's attempts to alter their dominant response tendencies or unwanted behaviors and emotions to resist bad habits and temptations (Baumeister et al., 2008; Baumeister and Vohs, 2004; Vohs and Faber, 2007). Baumeister et al. (1994) have argued that lack of self-control is behind many disorders detailed in DSM-V (2013). Moreover, the emotional distress associated with these problems can weaken self-control by producing stressful outcomes that further reduce the individual's regulatory capacity (Tangney et al., 2004). There is empirical evidence of both individual differences in self-control capability and reduced capacity

for self-control i.e. ‘ego depletion’ with repeated acts of self-control or even more broadly after making repeated choices (Baumeister, 2002). Studies by Claes et al. (2010) and Rose (2007) have also concluded that CBB is fundamentally a self-regulatory problem. Achtziger et al. (2015) explored the links between self-control, compulsive buying, and debts and found that self-control was negatively related to debts and fully mediated by compulsive buying and that age was significantly negatively related to compulsive buying and positively linked to self-control.

Diagnostic screening for compulsive buying behavior

The uncertainty about the extent to which impulsiveness, compulsiveness and addiction underpin CBB has been debated at length (e.g. Aboujaoude, 2014; Piquet-Pessôa et al., 2014). This is reflected in both the many terms which have been given to CBB such as ‘shopaholism’, ‘impulsive buying’ and ‘compulsive shopping’ (Aboujaoude, 2014; Andreassen, 2014) and by the variation in the instruments which have been used to screen consumers for the disorder over the past 30 years. The original screening tool, Valence et al.'s (1988) *Compulsive Buying Measurement Scale*, consists of 16 items, clustered into four factors: *reactive*, *tendency*, *post-purchase* and *family influence*. The scale was tested on self-identified compulsive and non-compulsive consumers and later reduced to 13 items by one of the authors, d’Astous (1990), by eliminating the *family influence* items. Both scales have been used in several subsequent CBB studies including Albrecht et al. (2007), Clark and Calleja (2008), Dittmar (2005), Garcia (2007), Li et al. (2009), Neuner et al. (2005) and Rodriguez-Villarino et al. (2006).

Almost simultaneously, Faber and O’Guinn (1989) validated the *Compulsive Buying Scale*, consisting of 14 items with three dimensions: *obsessive compulsive tendency*, *economic issues*, *feelings and attitude of the individual in relation to their buying habits*. Later, the scale was refined to a seven item *Clinical Screener* (Faber and O’Guinn, 1992). This has also been used in subsequent studies including Davenport et al. (2012), Horvath and van Birgelen, (2015), Kwak et al. (2004), Norum (2008), Park and Davies Burns (2005), Reeves et al. (2012) and Roberts et al. (2014).

Ridgway et al. (2008) argue that both Faber and O’Guinn’s (1989) and Valence et al.'s (1988) scales focus on impulse control and neglect the obsessive compulsive aspect of CBB, as does d’Astous’ (1990) scale. They also assert that Faber and O’Guinn’s (1989; 1992) screening scales

include items relating to both income and the financial consequences of CBB, which, they believe should not be used to screen for CBB but instead, analyzed as independent constructs. On the basis of their critique, Ridgway et al. (2008) designed a six item scale encompassing both the impulsive and the obsessive compulsive dimensions of the disorder, while excluding its precursors and consequences. Although based on a rigorous methodological approach, the scale focusses on purchasing material goods (referring to *things*, *unopen purchases*, and *closet*), hence excluding services, whilst some items address behaviors which are applicable to both compulsive and non-compulsive buyers such as unplanned purchases (Wood, 2005). Nevertheless, Ridgway et al.'s (2008) scale has been subsequently used in CBB studies including Kukar-Kinney et al. (2009; 2011), Mikolajzak-Degrauwe et al. (2012), and Young (2013).

More recent studies have been critical of Ridgway et al.'s (2008) research. Mueller et al. (2015) argue that it neglects the financial aspect of CBB while Andreassen et al. (2015) assert that it ignores the addictive dimensions of CBB, which their Bergen Shopping Addiction Scale directly addresses: salience, mood swing, tolerance, withdrawal, conflicts, relapse, and consequences. However, it is interesting to note the similarity between Andreassen et al.'s (2015) addiction oriented scale items and those included in the seminal works of Valence et al. (1988) and Faber and O'Guinn (1989). For example, *I shop/buy things in order to change my mood* (Andreassen et al., 2015) and *For me shopping is a way of facing the stress of my daily life and of relaxing* (Valence et al., 1988). Further, *I feel bad if for some reason are prevented from shopping/buying things* (Andreassen et al., 2015) and *Felt anxious or nervous on days I didn't go shopping* (Faber and O'Guinn, 1989).

METHOD FOR DEVELOPING THE NEW SCREENING TOOL

Instrument design

Given the validity and wide recognition of Faber and O'Guinn's (1989) and Valence et al.'s (1988) scales, the development of Ridgway et al.'s (2008) screener based on a critique of these scales, and the similarity between items in these scales and those in later studies (e.g. Andreassen et al., 2015), the items from these three tools formed the basis of the item pool for this study. Items from other sources were also added in an attempt to develop an enhanced screener for

CBB, which captured all relevant aspects of the disorder. Items measuring feelings of power or being in control of one's own life (De Sarbo and Edwards, 1996), feelings of regret (Black, 2001; Krueger, 1988), feelings of pleasure in the act of buying (Clark and Calleja, 2008; Krych, 1989; Robert and Jones, 2001), and irresistibly purchasing goods for no reason (Clark and Calleja, 2008; Lejoyeux et al., 1997) were included. Additionally, measures of CBB's antecedents and consequences were retained in the item pool despite representing 'indirect measures' (Ridgeway et al., 2008; Achziger et al., 2015) because recent studies (Andreassen et al., 2015; Mueller et al., 2015) have endorsed their effectiveness to screen for the disorder. Measures of self-control impairment were also included, e.g.: *I have often bought a product that I did not need, while knowing that I have very little money left* (Valence et al., 1988) and *I often buy things even though I can't afford them* (Faber and O'Guinn, 1989). These are similar to the items relating to lack of self-control used by Tangney et al. (2004): *Sometimes I can't stop myself from doing something, even if I know it is wrong*. Items relating to addiction were also included, e.g.: *Felt anxious or nervous on days I didn't go shopping* (Faber and O'Guinn, 1989).

A total of 40 screening items were included in a questionnaire survey, including measures of impulsivity, compulsivity, loss of self-control and addiction in line with current theory relating to CBB. . All items, presented in five-point disagreement/agreement scales, underwent a rigorous evaluation process to ensure that each one was clearly understood by respondents and free from misinterpretation. The reliability pre-test of the items included a protocol analysis (Babbie, 2010; Robson, 2003) with four individuals and a pilot test with 18 respondents. The key issues from the pre-tests and the subsequent modification of the items relate to issues of consistency of item presentation in the present tense, clarification of item content, and updating the language (e.g. changing *spendthrift* into *reckless spender*).

Study participants

Given the incidence of CBB in society, a random sample of the general population would be unlikely to produce sufficient numbers of respondents. Young adults have a higher prevalence of CBB compared with older age groups (Achziger et al., 2015; Neuner et al., 2005; Ridgway et al., 2008; Roberts and Roberts, 2012). Compulsive buyers also tend to have lower incomes than non-compulsive buyers (Koran et al., 2006; Maraz et al., 2015). On this basis and in line with

other CBB studies (e.g. Manolis and Roberts, 2008; Mowen and Spears, 1999; Ridgeway et al., 2008), a sample of university students, 90.7% of whom were aged between 18 and 34 years, was taken to reflect compulsive buyers' demographic and economic characteristics. A total of 22,000 subjects were invited by e-mail to complete an online survey which produced 1711 responses (7.7%). However, 722 of these were discarded either due to incompleteness (11%) or to achieve a high level of cultural homogeneity in the sample: 49% were non British; 40% were not students. The final sample of 989 provided a high level of homogeneity and confidence (97%) in the sample quality with a 3 to 3.5% error margin (De Vaus, 2002). Additionally, each gender cluster: 345 males (34.9%) and 644 females (65.12%) separately provided a good level of confidence above 95% (sampling error <5%), recommended by Field (2009). The non-British student respondents to the survey (n = 372) were used to cross validate the proposed new screener in comparison with three extant screening tools (Faber and O'Guinn, 1989; Ridgway et al., 2008; Valence et al., 1988). This second sample consisted of students from a wide range of nationalities, aged between 18 to 34 years; 166 (44.6%) were male and 206 (55.4%) were female.

RESULTS

Examining the dimensionality of CBB

The dimensionality of CBB was examined using exploratory (EFA) and confirmatory factor analyses (CFA) with SPSS Version 22 and AMOS Version 22, respectively. The EFA produced a three-dimensional model of CBB and on the basis of a thematic analysis of items loading on each factor, the dimensions were labelled: *Impulsive Purchasing* ($\alpha = .86$), *Self-control Impaired Spending* ($\alpha = .87$) and *Compulsive Purchasing* ($\alpha = .87$). CFA was used to test the factorial validity of the model (Figure 1); the results show that even after three error covariances were added, the model fit was still unsatisfactory: CMIN/DF = 5.69, RMR = .5, AGFI = .93, NFI = .96, TLI = .95, CFI = .96, RMSEA = .07 (Blunch, 2011; Schumacker and Lomax, 2010).

Two possible reasons were identified; firstly, two of the items loading on the IP dimension: *I buy things I don't need* and *I buy things I don't plan to buy* were, on reflection, considered to be relevant for non-compulsive purchasers i.e. these items may have been given high scores by non-compulsive purchasers who were buying unnecessary or unplanned goods (Wood, 2005).

Secondly, the two items: *I consider myself an impulse purchaser* and *I am often impulsive in my*

buying behavior, have similar meanings; it is, therefore, possible that their values were polarized, distorting the model. The items: *Others might consider me a shopaholic* (CP) and *If any money is left at the end of the pay period, I just have to spend it* (SIS) were removed in an effort to improve the model fit and provide a more parsimonious solution, but model fit was still unsatisfactory.

Figure 1 about here

In Ridgway et al.'s (2008) study, the impulsive dimension consisted of the items: *I consider myself an impulse purchaser*, *I buy things I did not plan to buy* and *I buy things I don't need*. Therefore, in considering possible alternative model re-specifications, it was thought that these three items may behave in the same way without Valence et al.'s (1988) variable *I am often impulsive in my buying behavior*. Additionally, the latter variable could be substituted for *I consider myself an impulse purchaser*, given their similarity. Therefore, two alternative models were examined: EFa included *I am often impulsive in my buying behavior* from Valence et al. (1988), whereas EFb used *I consider myself an impulse purchaser* from Ridgway et al. (2008); all other items were identical in both models. Both EFA a and b produced two dimensional solutions, explaining 70% of the variance in the data in model (a) and 71% in (b).

Validating the two-dimensional CBB model with CFA

Models *a* and *b* were then subjected to CFA. Model *a* (Figure 2) produced the best fit: CMIN/DF = 1.51, RMR = .02, AGFI = .98, NFI = .99, TLI = .99, CFI = .99, RMSEA = .02. Moreover, the convergent and discriminant validity test statistics confirmed the model's legitimacy; for SIS: CR = 0.85, AVE = 0.58, MSV = 0.57, and ASV = 0.57; for CP: CR = 0.83, AVE = 0.62, MSV = 0.57 and ASV = 0.57. A second-order structural model was used to test the extent to which the dimensions of Model *a* have CBB as a common causality (Figure 3). The model fit statistics were excellent: CMIN/DF = 1.51, RMR = .02, AGFI = .98, NFI = .99, TLI = .99, CFI = .99, RMSEA = .02. The convergent validity statistics were also good. For SIS: CR = .85, AVE = .58; for CP: CR = .83, AVE = .62; for CBB: CR = .86, AVE = .76. The result indicates that the two dimensions have a significant, substantial influence on CBB (SIS: .85; CP: .89). On this basis, seven items were included in the final version of the proposed new two-dimensional CBB

screening scale (Table 1). The screener's nomological validity was also established and compared with that of the other three screeners used in this study. First, compulsive buying indexes were developed for each scale by aggregating respondent ratings on their respective items; second, the indexes were correlated with measures of different but related constructs, which were theoretically predicted to produce (1) high positive, (2) medium positive, and (3) low negative correlations, respectively. The results in Table 2 indicate that although the Ridgway et al. (2008) and Valence et al. (1988) scales produced high and medium positive correlations in line with theoretical expectations, they produced non-significant low negative correlations. The Faber and O'Guinn (1992) scale produced lower than theoretically predicted high and medium positive correlations, and a notably higher than predicted low negative correlation with the third construct. This demonstrates that the new screener is more theoretically coherent than the other three.

Figure 2 about here

Figure 3 about here

Table 1 about here

Table 2 about here

Validating the screener with an independent data set

The screening tool was tested with the second sample of non-British students ($n = 372$). First, the model was tested on the new data set using CFA. This produced a good fit: CMIN/DF = 2.09, RMR = .04, AGFI = .96, NFI = .97, TLI = .98, CFI = .98, RMSEA = .05, indicating that the CBB construct has external validity. Second, the screener was used to identify compulsive buyers in the new sample. Previous studies have used an arbitrary discriminant point (e.g. Faber and O'Guinn, 1989; Valence et al., 1988) or a fixed discriminant point (e.g. Ridgway et al., 2008), but this ignores the staged development of CBB (Clark and Calleja, 2008; De Sarbo and Edwards, 1996; Edwards, 1993). Therefore, two (low and high) groups of compulsive buyers were identified, based on two CBIs calculated from respondents' scores on the five-point agreement scales for each of the screener's seven items. The low level CBI was derived from an aggregate score of 3 (middle point of Likert scale) \times 7 screener items (21) plus 1 (22) and represents a minimum discriminant point to distinguish between compulsive and non-compulsive buyers. The high level CBI, was derived from an aggregate score of 4 \times 7 items (28) plus 1 (29);

35 (5 x 7) being the maximum score. Respondents who scored between 22 and 28 were categorized as having a low level of CBB whereas those scoring between 29 and 35 were categorized as exhibiting a high level of compulsivity.

The screening of the 372 subjects in the sample identified 54 (14.52%) with low (mild) levels of CBB and seven (1.88%) with high (severe) levels of CBB. The use of low and high values provides a more comprehensive picture of the distribution of the disorder in comparison with previous studies, which have produced only one figure for the proportion of compulsive buyers in samples: 6% (Faber and O'Guinn, 1989), 7% (Koran et al., 2006), 8.9% (Ridgway et al., 2008), 9% (Roberts and Jones, 2001), 10% (Dittmar, 2005), 15% (Yurchisin and Johnson, 2004), and 17% (Kwak et al., 2004). The results from this research may indicate that previous studies have underestimated low levels of compulsivity and/or overestimated high levels of CBB. However, a direct comparison with previous research is difficult because of the differences in screening tool items focusing on different aspects of the disorder, different methods for determining discriminant points and cultural differences between the samples. Nevertheless, the results in Table 3 are consistent with previous studies in regard to identifying a higher incidence of CBB among females (e.g. d'Astous, 1990; Ridgway et al., 2008; Shoham and Makovec Brencic, 2003). CBB incidence among gender subgroups by age categories is shown in Tables 4 and 5, for females and males, respectively. The decline in the prevalence of CBB with age is both non-linear and gender specific.

Table 3 about here

Table 4 about here

Table 5 about here

Using the new sample, the proposed screener was also compared directly with Ridgway et al.'s (2008), Faber and O'Guinn's (1992) and Valence et al.'s (1989) screening tools, while adopting the two discriminant points for low and high levels of CBB (Table 6). The new screener identified significantly more cases of CBB than Faber and O'Guinn's (1992) screener, which was to be expected given the lower incidence of CBB in previous studies which used Faber and O'Guinn's (1992) tool e.g. 9% (Roberts and Jones, 2001). However, it is interesting that it

identified a similar proportion of cases to Ridgeway et al.'s (2008) screener (which detected 8.9% in their study), and significantly less than Valence et al.'s (1989) screener, which also identified a lower percentage of CBB incidence in previous studies (e.g. Garcia, 2007: 5.8%). The comparison with Valence et al.'s (1989) screener is particularly interesting given that five of the new screener's seven items were sourced from the former. This pattern is consistent across the four screeners for the identification of low level (mild) CBB cases but inconsistent for the high level CBB cases; the proposed new screener identified the highest number of high level (severe) cases, 11.50% of all CBB cases it identified, compared with 9.43% (Ridgeway et al., 2008) and 4.82% (Valence et al., 1989). Faber and O'Guinn's (1992) 'Clinical screener' failed to identify any severe cases. It is interesting to note the high number of mild cases detected by all of the screeners compared with the number of severe cases. This may indicate that only a small proportion of mild cases develop further, but since most CBB research is based on cross-sectional studies, little is known about the directionality of these relationships (Lieb, 2015; Müller et al., 2014).

Table 6 about here

To further investigate the discrepancy between the results obtained from the four screeners and to facilitate an evaluation of the proposed screener's discriminant validity, a severe CBB case identification comparison among the screeners was conducted (Table 7). It is notable that cases 135 and 201 were identified as severe by two of the screeners and only cases 73 and 372 were identified as severe by three of the screeners. Case 372 was identified by Faber and O'Guinn (1989) as being mild, but the 'Clinical Screener' failed to identify any severe cases. This may have resulted from its inclusion of items relating to the antecedents and consequences of CBB, which have diluted its screening power. From the seven severe cases identified by the proposed new screener, cases 53, 135, 167 and 194 were identified as mild by Valence et al.'s (1988) scale and cases 53, 167, and 201 were identified as mild by Ridgeway et al.'s (2008) screener. The reduced screening ability of these two scales could be attributed to their inclusion of items designed to identify impulsivity rather than loss of self-control. The high level of compulsive consumers in the sample identified by the proposed screener compared with the other instruments is consistent with the beliefs of other researchers (e.g., Muller and de Zwaan, 2004; Ridgeway et

al., 2008) that CBB incidence is higher than prior estimates. Overall, this indicates that the new screener may discriminate more effectively between mild and severe cases of CBB and possibly between non-compulsive and mild compulsive buying behavior cases, although further testing is needed to verify the findings.

Table 7 about here

DISCUSSION AND CONCLUSIONS

Dimensions of compulsive buying behavior

The study has identified two dimensions of CBB: *Self-control Impaired Spending* (SIS) and *Compulsive Purchasing* (CP) whilst the *Impulsive Dimension* (IP) is not directly represented in the model despite including all of the items relating to impulsiveness from earlier screeners in the study's item pool. The SIS dimension therefore challenges the strand of current theory which alleges that CBB is embedded in the locus of control caused by impulsivity (Edwards, 1993; Ridgway et al., 2008; Shoham and Makovec Brencic, 2003). Instead, CBB's impulsive dimension is represented indirectly through the SIS dimension because self-control represents the capacity to resist temptations, purchases and other expenditures that are likely to be regretted (Baumeister, 2002). The SIS dimension underlines the importance of self-control deficiency in CBB (Achtziger et al., 2015; Baumeister et al., 1994; Baumeister, 2002; Baumeister et al., 2008; Claes et al., 2010; Rose, 2007; Tangney et al., 2004; Vohs and Faber, 2007). The confirmation of SIS alongside CP rather than an *Impulsive Purchasing* dimension is therefore significant.

Individual differences in consumer spending self-control influence different interpretations of external stimuli and considerations of the consequences of their behavior (Haws et al., 2012); this indicates that the screening of CBB may not be adequately undertaken by using items addressing general ideas of impulsivity (Wood, 2005). The SIS dimension supports the argument that CBB relates more closely to conditions that are characterized by an impaired impulse control and suggests that impulse purchasing may be indirectly rather than directly linked with CBB in that loss of spending self-control increases an individual's vulnerability to external stimuli (Baumeister, 2002). Moreover, the notion of self-control impairment also resonates with CBB's *ego-dystonic* character in contrast to ICD's *ego-syntonic* traits (McElroy et al., 1994) in that the

act of spending is a form of compensation for an inner imbalance and an apparent solution to anxiety (De Sarbo and Edwards, 1996; Lejoyeux et al., 1997; Scherhorn et al., 1990; Valence et al., 1988). The SIS dimension therefore supports the view that CBB is a continuous and chronic failure in self-regulation, exacerbated by the influence of CP (Faber and O'Guinn, 1992; Faber and Vohs, 2003). This dimension also resounds with both recent definitions of CBB as a form of behavioral addiction and its links with other addictive behaviors (Aboujaoude, 2014; Albrecht et al., 2007; Andreassen, 2014; Black, 2007; Davenport et al., 2012; Foxall et al., 2008; Hartston, 2012; Workman and Paper, 2010). Addictive behaviors may be related to individual differences in psychological distress such as anxiety, which has often been associated with shopping addiction (Otero-López and Villardefrancos, 2014; Roberts et al., 2014; Maraz et al., 2015).

The SIS dimension is twinned with a *Compulsive Purchasing* (CP) dimension which reflects the disorder's characteristic obsession with buying (*Much of my life centers around buying things*) and a compulsion from within (*I sometimes feel that something inside pushes me to go shopping*) activated by the need to release psychological strain (*For me, shopping is a way of facing the stress of my daily life and relaxing*) as explained by Valence et al. (1988). The last item also reflects the addictive aspect of CBB in terms of salience of dependency to buy for mood modification (Andreassen et al., 2015). The CP and SIS dimensions of CBB are inextricably linked. The obsessive-compulsion to buy is provoked by anxiety, which elicits an action to release the tension it causes (Aardema and O'Connor, 2003; 2007; Christenson et al., 1994; Faber and O'Guinn, 1989; 1992; Lejoyeux et al., 1997) and without the ability to self-control through the allocation of self-regulatory resources, the individual is unable to rationalize the consequences of their behavior or resist the compulsion to buy in order to release their inner tension. The two-dimensional model therefore suggests that the uncontrollable motivation to buy (Andreassen, 2014) results from the combination of both compulsive and self-control impaired impulsive elements which are characteristic of behavioral addiction.

A new screening tool for 'compulsive' purchase behavior

The evaluation of previous CBB screeners showed that they have failed to discriminate effectively between compulsive and non-compulsive behavior in relation to the impulsive items. On the basis of this analysis, the study makes a methodological contribution in the form of the

new screener, which focusses on ‘compulsive’ purchase behavior. Seven items used in previous screening tools and related to the core traits and key mechanism of CBB including its addictive character (albeit limited), while excluding items relating to the antecedents or consequences of CBB and non-compulsive consumer buying behavior, were found to be effective in screening for the disorder. No items from later studies in the literature, which were included in the questionnaire survey, survived the scale development process to be included in the new screener. The seven-item construct has high levels of both internal consistency and construct validity. The model and screener were also tested using an independent data set. The relatively high level of compulsive consumers identified by the proposed new screener is consistent with the beliefs of other researchers regarding CBB levels (Muller and de Zwaan, 2004; Ridgeway et al., 2008), while the high prevalence of CBB among females and the decline in the prevalence of CBB with age is consistent with the findings from previous research (d’Astous, 1990; Ridgway et al., 2008; Shoham and Makovec Brencic, 2003 Davenport et al., 2012; Maraz et al., 2015). In addition, the comparative analysis of the four screening tools using individual cases identified as having high levels of CBB indicates that the proposed new screener may discriminate more effectively between mild and severe cases of CBB and possibly between non-compulsive and mild compulsive cases, although further testing of the model, as outlined below, is required to verify the findings.

The study’s adoption of two discriminating points to identify consumers with low and high levels of CBB is also important because of the staged development of the disorder (Clark and Calleja, 2008; De Sarbo and Edwards, 1996; Edwards, 1993) and/or different levels of CBB severity relating to individual differences in consumer spending self-control (Haws et al., 2012) and different self-esteem perceptions (Andreasson et al., 2015). The results suggest that previous studies may have underestimated low severity and/or developing cases. Distinguishing between low and high levels of CBB is also important in relation to gender because the ratio of female to male CBB prevalence was found to be 1.8:1 in the low level CBB category, but 2.5:1 in the high level category. This indicates that women are generally more susceptible to CBB and less resistant to its development into a more serious condition.

The study of CBB determinants, dimensions and distribution is critically important to advance the understanding of this particular aspect of consumer behavior and how to address it.

Therefore, this study, focusing on the core characteristics of the disorder, could provide improved opportunities for more effective diagnosis and intervention, which is important given the profound and potentially devastating financial consequences of compulsive spending. The brevity of the seven-item screener also means it can be included in time-limited surveys (Koronczai et al., 2011). The research therefore has important practical implications.

Limitations and recommendations for further research

This study builds on and refines previous knowledge on CBB to make a theoretical and methodological contribution to the consumer behavior literature, and provides a foundation for the further study of the disorder; however, it has a number of limitations. The two-dimensional CBB model and screener were based on an evaluation and subsequent testing of 40 items from a number of widely recognized scales (primarily Faber and O'Guinn, 1989; Ridgway et al., 2008; Valence et al., 1988) and other studies (Black, 2001; Clark and Calleja, 2008; De Sarbo and Edwards, 1996; Krueger, 1988; Krych, 1989; Robert and Jones, 2001). While these studies included some scale items which addressed more recent strands of CBB theory relating to loss of self-control (Achtziger et al., 2015; Baumeister, 2002; Baumeister et al., 2008; Shlosser et al., 1994; Tangney et al., 2004) and behavioral addiction (Aboujaoude, 2014; Albrecht et al., 2007; Andreassen, 2014; Davenport et al., 2012; Hartston, 2012), they were given much less emphasis. Therefore, while the results in the current study reflect the prominence of self-control impairment and the addictive characteristics of CBB, and the study acknowledges the importance of more recent research on these aspects of the disorder, future research on CBB should place further emphasis on these characteristics in the design of screening tools.

The samples used in the study reflect the age, gender and income characteristics of compulsive consumers and are comparable with previous CBB studies, which are subject to similar sampling constraints because of the nature of the topic. Nevertheless, the participants may be better educated than typical compulsive shoppers (Black, 2007; Davenport et al., 2012; Maraz et al., 2015) and as such, the proportion of compulsive buyers identified in the samples cannot be generalized because the variation in lifestyles may reflect different levels of anxiety and self-

control. In addition, while the study reflects previous research in its cross-sectional design, the temporal dimension of CBB has been neglected in that the development of the disorder among participants over time has not been examined. Longitudinal designs are therefore needed both with a sample from the general population and with individuals fitting the clinical category of compulsive buyers, although this would be problematic if not impractical. However, given the need for further comparative analysis of the screeners to establish the external validity of the new instrument, future research should attempt to obtain a larger, more diverse sample of consumers, notwithstanding the constraining characteristics of CBB research outlined above. This additional evaluation of the scales should include testing on a sample of known compulsive buyers to establish if the new screener identifies any false-positive cases and compare the results with those from the other three scales.

Moreover, the current study has not addressed the link between CBB and consumer personality traits. Following work by Mikolajczak-Degrauwe et al. (2012), Andreassen et al. (2013) and Thompson and Prendergast (2015), the positive links between CBB and both extroversion and neuroticism could be examined further in future research.

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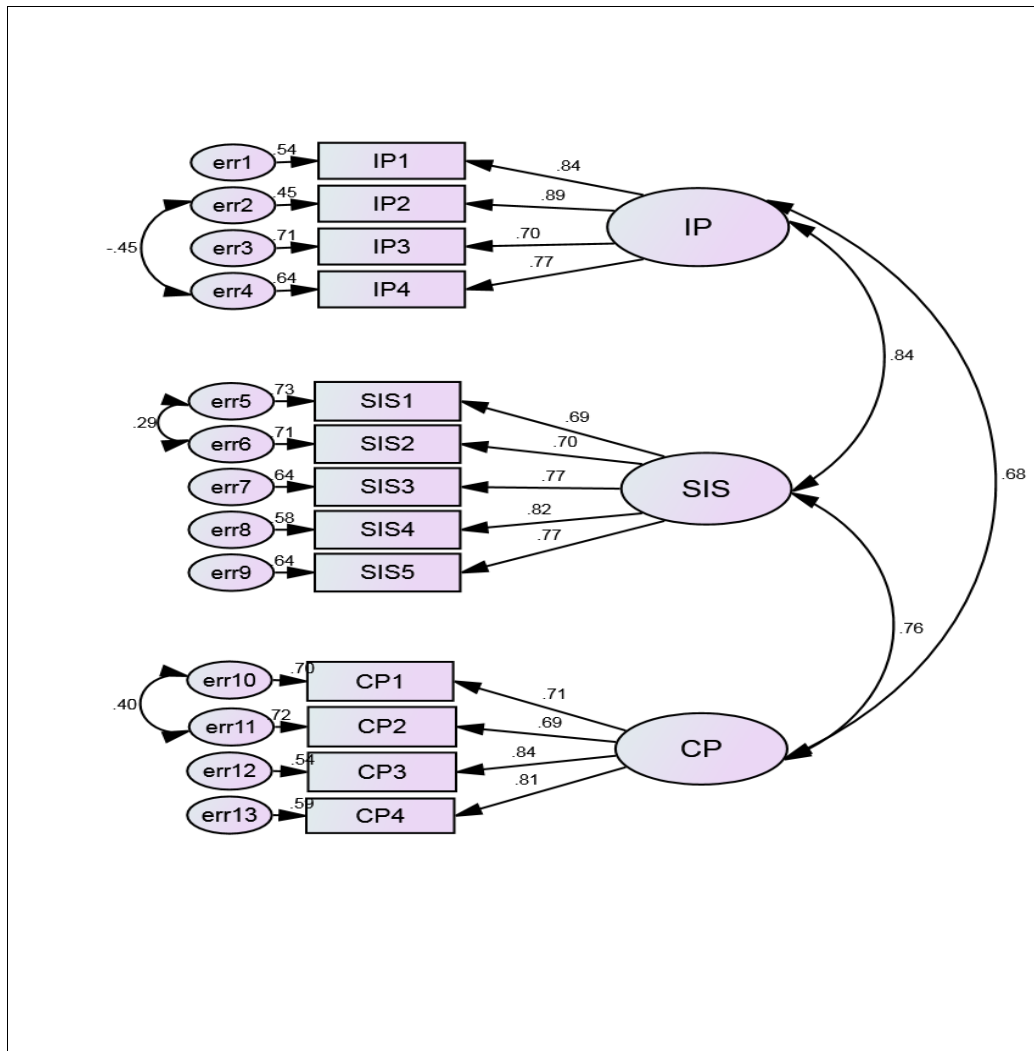
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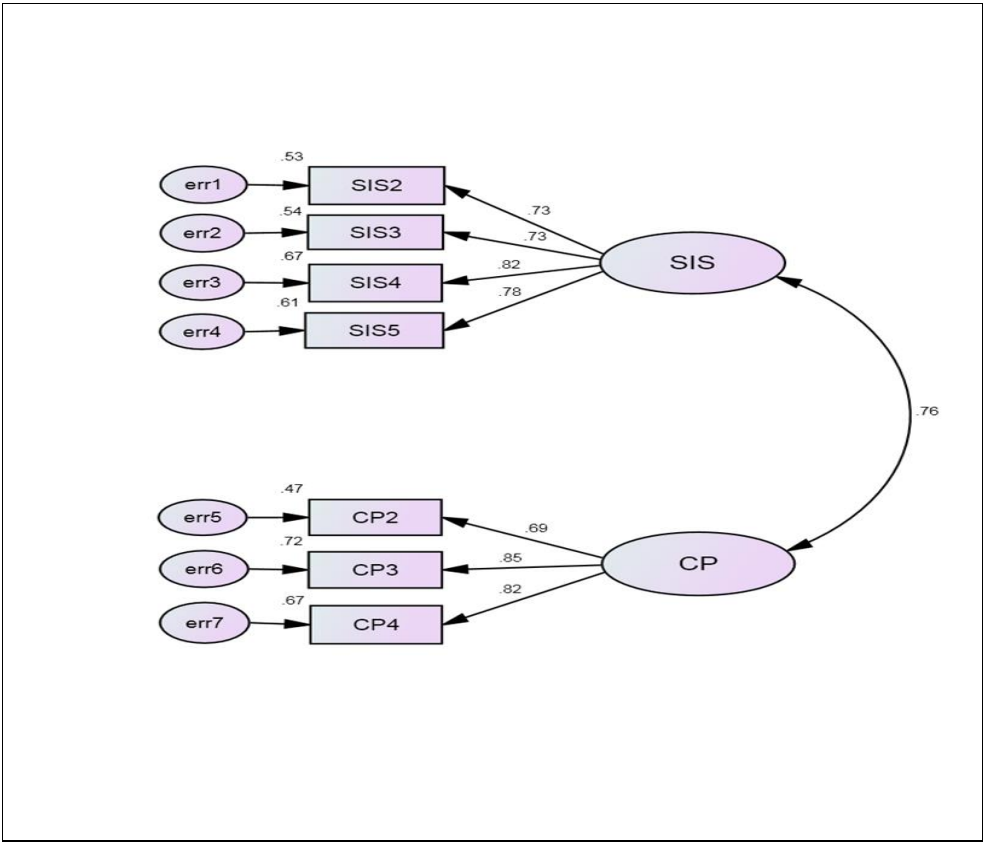
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Figure 1: CBB First Order Measurement Model



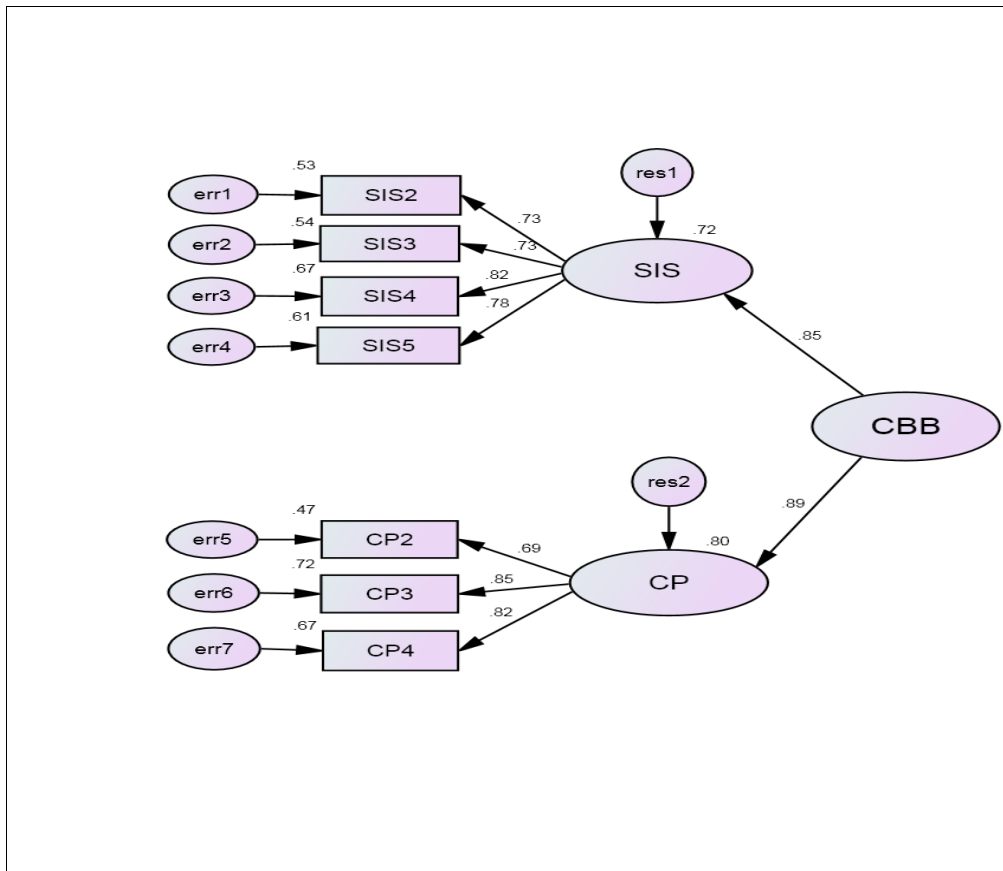
Notes: IP: Impulsive Purchasing; SIS: Self-control Impaired Spending; CP: Compulsive Purchasing;
 IP1: I consider myself an impulse purchaser;
 IP2: I am often impulsive in my buying behavior;
 IP3: I buy things I did not plan to buy;
 IP4: I buy things I don't need;
 SIS1: If any money is left at the end of the pay period, I just have to spend it;
 SIS2: I buy things even though I can't afford them;
 SIS3: When I have money, I cannot help but spend part or the whole of it;
 SIS4: I am a reckless spender;
 SIS5: I have often bought a product that I did not need, while knowing that I have very little money left;
 CP1: Others might consider me a shopaholic;
 CP2: Much of my life centers around buying things;
 CP3: I sometimes feel that something inside pushes me to go shopping;
 CP4: For me, shopping is a way of facing the stress of my daily life and relaxing.

Figure 2: CBB First Order Measurement Model *a*



Notes: SIS: Self-control Impaired Spending; CP: Compulsive Purchasing;
SIS2: I buy things even though I can't afford them;
SIS3: When I have money, I cannot help but spend part or the whole of it;
SIS4: I am a reckless spender;
SIS5: I have often bought a product that I did not need, while knowing that I have very little money left;
CP2: Much of my life centers around buying things;
CP3: I sometimes feel that something inside pushes me to go shopping;
CP4: For me, shopping is a way of facing the stress of my daily life and relaxing.

Figure 3: CBB Two-Dimensional Structural Model.



Notes: CBB: Compulsive Buying Behavior; SIS: Self-control Impaired Spending; CP: Compulsive Purchasing.
 SIS2: I buy things even though I can't afford them;
 SIS3: When I have money, I cannot help but spend part or the whole of it;
 SIS4: I am a reckless spender;
 SIS5: I have often bought a product that I did not need, while knowing that I have very little money left;
 CP2: Much of my life centers around buying things;
 CP3: I sometimes feel that something inside pushes me to go shopping;
 CP4: For me, shopping is a way of facing the stress of my daily life and relaxing.

Table 1: New Screener for Compulsive Buying Behavior**Compulsive Buying Dimensions and Scale Items****Self-control Impaired Spending (SIS)**

- I have often bought a product that I did not need, while knowing that I have very little money left (Valence et al., 1988)
- I am a reckless spender (originally ‘I am a spendthrift’ from Valence et al., 1988)
- I often buy things even though I can’t afford them (Faber and O’Guinn, 1989)
- When I have money, I cannot help but spend part or the whole of it (Valence et al., 1988)

Compulsive Purchasing (CP)

- Much of my life centers around buying things (Ridgway et al., 2008)
- For me, shopping is a way of facing the stress of my daily life and relaxing (Valence et al., 1988)
- I sometimes feel that something inside pushes me to go shopping (Valence et al., 1988)

Table 2: Screeners' Nomological Validity Comparison

	Proposed Screener	Ridgeway et al. (2008)	Faber and O’Guinn (1992)	Valence et al. (1988)
1. I shop for long periods of time	.55*	.54*	.41*	.54*
2. My urge to buy is often associated with adverts I have seen on TV, newspapers or the Internet	.33*	.30*	.24*	.38*
3. I always pay off my credit card(s) debts at the end of each month	-.18*	-.08 ^{ns}	-.33*	-.11 ^{ns}

Notes: * Significant at the 0.01 level (2-tailed), ^{ns} Non Significant

1. A common trait of compulsive buyers (Edwards, 1993; McElroy et al., 1994) – Expected Correlation: High/Positive.

2. Although the urge to buy is triggered by an inner need, it is possible that to a certain extent, advertisements feed a cognitive and subconscious evaluation of the self (Valence et al., 1988; Kwak et al., 2007) – Expected Correlation: Medium/Positive.

3. Compulsive buyers make excessive use of their credit cards (d’Astous, 1990; Dittmar, 2005) – Expected correlation: Low/Negative.

Table 3: Cases of Compulsive Buying Behavior by Gender

	Female (n = 206)		Male (n = 166)		Total (n = 372)	
	n	%	n	%	n	%
Mild CBB	35	16.99	19	11.45	54	14.52
Severe CBB	5	2.43	2	1.02	7	1.88
Total	40	19.41	21	12.65	61	16.40

Table 4: Cases of Compulsive Buying Behavior among Females by Age

	Age 18-24 (n = 134)		Age 25-34 (n = 57)		Age 35-44 (n = 14)		Age 45-54 (n = 1)	
	n	%	n	%	n	%	n	%
Mild CBB	27	20.15	6	10.53	1	7.14	1	100
Severe CBB	3	2.24	2	3.51	-	-	-	-
Total	30	22.39	8	14.04	1	7.14	1	100

Table 5: Cases of Compulsive Buying Behavior among Males by Age

	Age 18-24 (n = 94)		Age 25-34 (n = 52)		Age 35-44 (n = 15)		Age 45-54 (n = 5)	
	n	%	n	%	n	%	n	%
Mild CBB	11	11.70	6	11.54	1	6.67	1	20.00
Severe CBB	1	1.06	1	1.92	-	-	-	-
Total	12	12.77	7	13.46	1	6.67	1	20.00

Table 6 Comparison of CBB Incidence Identified by the Screening Tools

	Proposed Screener		Ridgway et al. (2008)		Faber and O'Guinn (1992) 'Clinical Screener'		Valence et al. (1988)	
	n	%	n	%	n	%	n	%
Mild CBB	54	14.5	48	12.9	17.0	4.60	79	21.2
Severe CBB	7	1.9	5	1.3	-	-	4	1.1
Total CBB	61	16.40	53	14.25	17.0	4.60	83	22.31

Table 7 Comparison of Severe CBB Cases Identified by the Screening Tools

Proposed Screener	Ridgway et al. (2008)	Faber and O'Guinn (1992) 'Clinical Screener'	Valence et al. (1988)
53	-	-	-
73	73	-	73
135	135	-	-
167	-	-	-
194	-	-	-
201	-	-	201
-	204	-	-
-	239	-	-
-	-	-	312
372	372	-	372