

*Compulsive Buying Among Young Adults: A Behavioural Segmentation*

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### Abstract

**Purpose** – The purpose of this study is to re-examine the characteristics of compulsive buying behaviour (CBB) based on a new improved screener. The study analyses young compulsive buyer attitudes, decision making, product preferences, the impact of credit card use and post-purchase perspectives in relation to compulsive buying behaviour severity.

**Design/methodology/approach** – The study takes a quantitative approach to the analysis of compulsive behaviour among young consumers, using data from a questionnaire survey and a large sample. A wide range of statistical procedures and structural equation modelling are used in the analysis.

**Findings** - The segmentation of compulsive buyers, on the basis of disorder severity, provides important insights into the asymmetrical between-group variation in anxiety levels, product preferences, feelings, attitudes and credit card impact, and the within-group variability in daily compulsivity patterns and associated shopping behaviour.

**Originality/value** – The study compares non-compulsive behaviour with occasionally compulsive, mildly compulsive and severely compulsive consumers using an improved screening tool. It identifies critical criteria that distinguish between mild and severe forms of the disorder, which have hitherto been neglected yet represent key diagnostic and predictive factors which can inform both early intervention and our understanding of CBB and its complexity.

**Keywords** - compulsive buying behaviour; mildly compulsive; severely compulsive, decision-making, credit cards.

**Paper type** – Research paper.

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### Introduction

Compulsive buying behaviour (CBB) is a phenomenon characterized by an uncontrollable urge coupled with growing tension that can be relieved only by making a purchase (Lejoyeux et al., 1997). CBB research has focused on the following areas: its causes rooted in anxiety and low self-esteem (Faber & O'Guinn, 1989; Roberts & Roberts, 2012, Valence et al., 1988; Venu Gopal, 2013), its characteristics and consequences (Alemis & Yap, 2013; De Sarbo and Edwards, 1996; Dittmar, 2005; Spinella et al., 2014), compulsive buyer's buying habits (Clark & Calleja, 2008), credit card influence (Park & Davis Burns, 2005), and compulsive buyers' attitude towards money and payments (Harnish et al., 2018). These behavioural traits and impacts have, however, been identified using different screening tools (e.g. Valence et al., 1988; Faber & O'Guinn, 1989; Edwards, 1993; Ridgway et al., 2008), which has highlighted a disagreement about the core dimensions of the disorder, namely impulsivity (e.g. Sherhorn et al., 1990; Davenport et al., 2012), compulsivity (e.g. Kwak et al., 2004) or both (e.g. Ridgway et al., 2008). A more recent study (Maccarrone-Eaglen & Schofield, 2017) examined this issue and favourably compared a new diagnostic tool with three existing screeners. It found that impulsiveness is only indirectly related to CBB, while confirming that the disorder results from the combined effects of compulsion and impaired self-control (Achtziger et al., 2015; Baumeister et al., 2008; Tangney et al., 2004; Vohs and Faber, 2007). This resonates with CBB's ego-dystonic character, i.e. when the individual's conscious behaviour is incongruous with self-believes and values, in contrast to impulsion's ego-syntonic traits, i.e. when the individual's conscious behaviour is consistent with self-believes and values (McElroy et al., 1994). A second study by Maccarrone-Eaglen & Schofield (2017), using

samples from four different countries: U.K. Spain, China and the Czech Republic, found the same core dimensions: compulsive purchasing and self-control impaired spending, which supported the effectiveness of the new 2017 diagnostic tool.

The new screening tool effectively distinguishes between compulsive and non-compulsive behaviour, its seven items being directly related to the core traits and key mechanisms of CBB rather than its antecedents and consequences, which characterize many previous screeners (Maccarrone-Eaglen and Schofield, 2017). As such, the comparative efficacy of the new diagnostic tool calls into question the accuracy of the compulsive buyer profiles and behavioural attributions provided by previous studies. This is a key issue given the serious psychological and financial consequences of this behavioural addiction and its increasing incidence, particularly among young people in more westernized economies (Aboujaoude, 2014; Black, 2007; Davenport, Houston, & Griffiths, 2012; Hartston, 2012). This study, therefore, addresses this gap in knowledge by using the new screener (Maccarrone-Eaglen and Schofield, 2017) to re-examine compulsive buyers' distinguishing characteristics, attitude towards purchasing, their decision-making process in relation to purchasing, product preferences, the impact of credit card use on their condition and their post-purchase perspective. Moreover, the study makes an additional contribution through its comparative analysis of non-compulsive consumers with both mildly compulsive and severely compulsive consumers to identify critical diagnostic and predictive attitudinal and behavioural factors.

The study is particularly relevant to the consumer behaviour discipline because it provides a new platform for addressing both the economic and psychological consequences associated with the disorder (Faber & O'Guinn, 1989), such as distress, financial loss and social problems (Dittmar,

2005; Wong & Xiao, 2009), including damage to relationships with family and friends, loneliness, debt and depression (Alemis & Yap, 2013; Spinella et al., 2014; Cheng-Xi Aw et al., 2018). It also addresses a particular gap in the literature relating to differences in compulsive consumer attitudes, decision making, product preferences, impact of credit card use and post-purchase perspectives based on the severity of their disorder. The results, therefore, offer important insights, which will be beneficial to both counsellors and policy makers to address and mitigate the negative effects of CBB.

## **THEORETICAL BACKGROUND**

### **Antecedents and Characteristics of CBB**

Previous research has shown that a stressful upbringing (Black, 2007; Baker et al., 2013; Singh and Kumar Nayak, 2015; Grougiou et al.; 2015), strict parenting during childhood (Elliott, 1994), limited education on independent thinking (De Sarbo & Edwards, 1996) and a lack of guidance on money management (Valence et al., 1988) may result in a predisposition to anxiety and/or low self-esteem. This, in turn, may trigger the development of a reactive behaviour, such as compulsive purchasing, to relieve tension (McQueen et al., 2014; Valence et al., 1988; Venu Gopal, 2013) and obtain a temporary sense of both power and control (De Sarbo & Edwards, 1996); the act of buying compensates for or neutralizes negative emotions or fear of missing opportunities (McQueen et al., 2014). Anxiety was also found to increase the use of social networking sites which, in turn, increased online compulsive purchasing (Sharif & Yeoh, 2018). Compulsive buyers engage in irrational consumption to gain prestige, or to conform and feel they are part of a group (Attiq and Rauf-i-Azam, 2015; Heisley & Cours, 2007; Khare, 2013; Phau & Woo, 2008). This is particularly the case when they are concerned with social comparison (Islam et al., 2018), have unrealistic

expectations of themselves (O'Guinn & Faber, 1989; De Sarbo & Edwards, 1996), often lose touch with reality (Schlosser et al., 1994) or are concerned with self-appearance (Roberts, 2012), especially when comparing themselves with celebrities (Reeves et al., 2012).

Previous studies have found that all social classes are affected by CBB in equal proportion (Lee & Mysyk, 2004) whereas CBB is prevalent in women (D'Astous, 1990; Faber & O'Guinn, 1992; Elliott, 1994; Christenson et al., 1994; Dittmar, 2005; Lejoyeux et al., 1995; Neuner et al., 2005; Maccarrone-Eaglen & Schofield, 2017; Otero-Lopez, 2015; Ridgway et al., 2008) and is negatively correlated with age (D'Astous, 1990; Neuner et al., 2005; Garcia, 2007; Ridgway et al., 2008). Therefore, using the new screener to distinguish between non-compulsive (NC), non-compulsive with occasional tendency (NCO), mildly compulsive (MC) and severely compulsive (SC) consumers, 12 hypotheses were formulated, the first of which is given below:

H1: There are significant differences in the demographics of NC, NCO, MC and SC consumers.

Compulsive buyers often display procrastination, indecision (De Sarbo & Edwards, 1996) and compulsive collecting tendency (Frost et al., 1998), typical symptoms of anxiety and depression (Muller et al., 2010), they also manifest comorbidity with other compulsive disorders (Black et al., 2015) such as gambling (Claes et al., 2011; Granero et al., 2016; Trautmann-Attmann & Widner Johnson, 2009). In addition, compulsive purchasers tend to respond positively to direct mail (Valence et al., 1988) and experience mounting anxiety when they cannot go shopping (Faber & O'Guinn, 1989) and a sense of restlessness because of their preoccupation with spending (Saraneva and Saaksjarvi, 2008); this is intrusive, unrelenting and irrational until buying takes place (McElroy et al., 1994). On the basis of these findings, we hypothesised that there are significant differences between NC, NCO, MC and SC consumers on the basis of:

H2: procrastination and indecision;

H3: collecting behaviour;

H4: gambling behaviour;

H5: responding to direct mail;

H6: experiencing tension and restlessness when unable to shop.

### **The Compulsive Urge to Buy**

Compulsions disturb conscious behaviour (McElroy et al., 1994) because the urge to buy is irresistible, with a strength that could be compared to the need to vomit (Krueger, 1988). Christenson et al. (1994) found that the urge to buy can start at home (58%), at work (25%), in shopping malls (16.7%) or whilst driving (4.2%), while others have found that in store marketing activities exacerbate the disorder (e.g. Kwak et al., 2004). The frequency of occurrence of compulsive urges has been found to vary significantly from every hour to every month and more rarely every few years (Christenson et al., 1994). Some compulsive buyers attempt to reject the compelling urge to buy, though in vain (Valence et al., 1988; Claes et al., 2011); consequently, they may experience a sense of defeat and keep a façade of rationality with other people (Valence et al., 1988). On the basis of this literature, it was hypothesised that:

H7: There are significant differences between NC, NCO, MC and SC consumers regarding their urge to buy characteristics.

### **Compulsive Buying Indicators: Process and Characteristics**

Black (2007) identifies four stages in the CBB buying process: 'anticipation', when the urge to buy manifests itself; 'preparation', when the buyer decides where to shop and how to dress for the event; 'shopping', which involves a feeling of excitement; and 'spending', which ultimately

changes the previous emotions into remorse (Valence et al., 1988; Kwak et al., 2004). Compulsive buyers indulge in long shopping sessions (McElroy et al., 1994), which often take priority over other important activities (Clark & Calleja, 2008).

Compulsive buyers also purchase large quantities (Clark & Calleja, 2008) of mainly apparel products, while focusing on their symbolic meaning rather than the goods per se (Xu, 2008; Lejoyeux & Weinstein, 2010). In some cases, the perceived value of the purchase relates to an improvement in their self-image (Roberts et al., 2014) or in 'winning' against sellers by purchasing items which are in a sale (Krueger, 1988). They are often interested in expensive items (Clark & Calleja, 2008) and while Kukar-Kinney et al. (2011) found they are both brand- and prestige-conscious, a more recent study has shown that compulsive buyers are not concerned with specific brands because they are driven by the need to buy rather than the product itself (Horvath & vanBirgelen, 2015). As such, we hypothesised that:

H8: There are significant differences between the NC, NCO, MC and SC consumer buying process and characteristics.

Credit cards are also believed to facilitate compulsive consumption (D'Astous, 1990; McElroy et al., 1994; Black, 2001; Park & Davies Burns, 2005; Dittmar, 2005; Kellett & Bolton, 2009; Norum 2008; Phau & Woo, 2008, Wang & Xiao, 2009). They remove the immediate need for money and blur compulsive shoppers' awareness of spending, thereby worsening their condition (Roberts & Jones, 2001), their level of anxiety (Modesto Veludo-de-Oliveira et al., 2014), and their financial situation (Alemis & Yap, 2013; Cheng-Xi Aw et al., 2018). However, recent studies suggest that credit cards do not impact on compulsive buying behaviour (e.g. Khare, 2013) and that it is compulsive buying that mediates credit card use among young consumers (Nga et al., 2011).



However, the inconclusive findings from previous studies may have resulted, at least in part, from their use of different screening scales. It was therefore hypothesised that:

H9: There are significant differences between NC, NCO, MC and SC consumers re: the impact of their credit card use.

At the end of their long shopping sessions compulsive buyers experience a sense of guilt and regret (Valence et al., 1988; Kwak et al., 2004) and often they do not use their purchases (Ridgway et al., 2008). We therefore also hypothesised that there are significant differences between NC, NCO, MC and SC consumers regarding:

H10: experiencing guilt after shopping;

H11: experiencing regret after shopping;

H12: not using their purchases.

## **METHOD**

Data was collected using a questionnaire survey designed around the new screening tool (Maccarrone-Eaglen & Schofield, 2017) together with the CBB characteristics and influences on compulsive purchasing behaviour identified in the literature. The instrument included questions presented on five-point disagreement/agreement scales together with dichotomous and multiple-choice items. Open-ended questions were also included to explore issues not addressed in previous studies e.g. colour preference, the answers to which were clustered and coded into numerical data for analysis. A rigorous evaluation of the questionnaire was undertaken to ensure that each question and related instructions were well-defined and understood by survey participants; this included a reliability pre-test using a protocol analysis and a pilot study with 21 respondents

(Babbie, 2010; Robson, 2003). Minor modifications, such as changing a few words/expressions to improve the clarity of questions, were made as a result.

Given the higher incidence of CBB among young consumers (Achtziger et al., 2015; Neuner et al., 2005; Roberts and Roberts, 2012) who tend to have lower incomes compared with non-compulsive buyers (Koran et al., 2006; Maraz et al., 2015), a self-selected convenience sample of 1417 students was used in the study. This comprised of 62.9% females and 91.8% aged 18 to 34; further details are given in Table 1. The respondents were invited by e-mail to complete the questionnaire survey via a weblink to the online tool SurveyMonkey, which was active over a period of two weeks. On the basis of Maccarrone-Eaglen & Schofield's (2017) categorization of compulsiveness, a compulsive buying index (CBI) was computed by aggregating respondents' ratings (from 1 to 5) on the seven variables in the screening scale. Four groups were then identified on the basis of the CBI scores:

1. Severely compulsive (SC): ratings from 29 ( $4 \times 7 + 1$ ) to 35 ( $5 \times 7$ );
2. Mildly compulsive (MC): ratings from 22 ( $3 \times 7 + 1$ ) to 28 ( $4 \times 7$ );
3. Non-compulsive with an occasional tendency to be compulsive (NCO): ratings from 15 ( $2 \times 7 + 1$ ) to 21 ( $3 \times 7$ );
4. Non-compulsive (NC): ratings from 7 ( $1 \times 7$ ) to 14 ( $2 \times 7$ ).

This facilitated the comparative analyses of sub-group characteristics using SPSS version 23; the structural equation modelling was undertaken using AMOS version 25.

## RESULTS AND DISCUSSION

### Demographic Characteristics of Compulsive Buyers

The demographic profile of the respondents by compulsive category is presented in Table 1. As expected from previous studies (e.g. Dittmar, 2005; Maccarrone-Eaglen & Schofield, 2017), there was a higher proportion of female consumers in both MC and SC categories compared with the NC category; however, interestingly, males and females were equally represented in the NCO category, indicating that while both genders experience similar sporadic urges to buy, the development of CBB into a problematic disorder is more prevalent in women. Consumer age was significant, with a higher incidence of CBB in both SC and MC categories in the 18-24 age group; this supports the findings from previous studies (e.g. Dittmar, 2005; Black, 2007). There was also a significantly higher incidence of CBB among undergraduates compared with postgraduate students; however, this may indirectly reflect the respondents' age differences. Given that CBB has its foundation in an inner emotional/psychological imbalance such as anxiety (Singh and Kumar Nayak, 2015), it was considered appropriate to test if being in a relationship affects the condition; however, the result was non-significant. Respondent ethnicity and occupation also exhibited non-significant results. Therefore, while there were significant differences between groups in gender, age and education, reflecting the findings of previous research, there were no significant differences between them on the basis of the other categories. As such, hypothesis 1 is only partially accepted.

*Table 1 about here*

### **General Behavioural Characteristics of Compulsive Buyers**

One-way ANOVA tests (Table 2) were used to examine differences in behavioural characteristics between NC, NCO, MC and SC consumers. There were significant differences in procrastination and indecision, typical symptoms of anxiety (Muller et al., 2010), between NC (NC and NCO) and both MC and SC groups, with a moderate effect size ( $\eta^2$ ), but interestingly, the differences between the MC and SC groups were non-significant. Hypothesis 2 was therefore, rejected.

The tendency to collect presented significant differences between NC and NCO, MC and SC groups, while differences between NCO and both MC and SC groups, and between MC and SC groups were non-significant (Table 2); this supports previous research (Frost et al., 1998; Ridgway et al., 2008), although the effect size is small. As such, hypothesis 3 was rejected. The same effect size was found for the relationship between CBB and gambling (Table 2), where significant differences were identified between NC and NCO, MC and SC groups, and also between NCO and MC groups, but differences between NCO and SC, and between MC and SC groups were non-significant, supporting Granero et al.'s (2016) study, which identified a relatively limited comorbidity between CBB and addictive gambling. Therefore, the findings do not support hypothesis 4.

*Table 2 about here*

Valence et al.'s (1988) findings identify a strong predisposition among compulsive buyers to respond to direct mail whilst Faber & O'Guinn's (1989) study revealed an increasing anxiety and tension when compulsive buyers cannot shop. The large effect sizes and highly significant differences between all of the groups strongly support both their findings and hypotheses 5 and 6,

respectively. They also suggest that they are critical indicators of important behavioural differences between the developmental stages of the disorder.

### **The Urge to Buy**

There are significant differences between all four groups on the statement *I have a strong urge to buy something* (Table 3) with a very large effect size. By contrast, *I try to resist the urge to buy* is non-significant in relation to all group comparisons. The data frequencies show a general tendency to attempt to resist the urge: NCO: 83.56%; MC: 84.58%; SC: 89.58%, whilst for many compulsive consumers, their ability to resist the urge to buy appears to depend on the type of goods: NCO: 52.08%; MC: 42.86%; SC: 50.00%. The significant differences between the groups regarding urges, but non-significant differences on resistance mean that hypothesis 7 is only partially accepted.

*Table 3 about here*

The length of time respondents were able to resist the urge to buy was also measured. The small majority of SC consumers (52.08%) fail to resist more than two hours (with 25% unable to resist beyond one hour and 16.67% resisting for up to one week). By comparison, 43.61% of MC consumers are unable to resist for more than two hours (with 13.53% unable to resist beyond one hour and 14.29% resisting for up to one week). For both SC and MC consumers the urge to buy can occur at any time of day, although SC compulsions are stronger in the morning, peak at home (18.8%) in particular when reflecting about themselves and their lives (18.8%) and become slightly less intense through the afternoon and/or evening (Figure 1). SC consumer urges are also more common when surfing the internet (for reasons other than shopping) and in shopping

centres, when there is also a morning peak and a slight decrease throughout the day. By comparison, it is interesting that MC consumer compulsions have a limited manifestation in the morning, but increase consistently through the afternoon and evening, particularly in shopping centres (up to 13.7%) at home (up to 11.5%) and while surfing the internet (up to 16%).

*Figure 1 about here*

The data also shows that the majority of SC consumers (66.6%) cannot think about anything else but purchasing when the urge to buy manifests itself compared with only 27.3% of MC consumers. Interestingly, 56.3% of SC consumers are clear about what they want to purchase when they experience the urge to buy compared with 37.8% of MC consumers, and 68.8% of them dress up when they go shopping, as reported by Black (2007), compared with 47.1% of MC consumers.

### **The Shopping Session**

The results confirm previous findings (Clark & Calleja, 2008) describing compulsive buyers' shopping experiences as long ritualistic sessions lasting, on average, three hours: 38.29% of SC consumers browse and buy for over three hours and 51.06% for over two hours, while 32.57% of MC consumers browse and buy for over three hours, and 61.31% for over two hours. However, it should also be noted that 23.41% of SC and 20.68% of MC consumers make a purchase within half an hour; this is not surprising, given that the majority of SC and a large number of MC consumers have in mind what to purchase when they experience the urge to buy. In order to further understand compulsive buyers' attitudes and their decision-making processes, one-way ANOVA tests were used to examine the differences between SC, MC, NCO and NC ratings on a

range of compulsive buying indicators (Table 4). As expected, there were significant differences between all of the groups on all variables with large effect sizes with the exception of the non-significant difference between MC and SC groups on 'I buy things I don't plan to buy'. While this confirms the efficacy of the four other indicators for screening between these behavioural segments, hypothesis 8 can only be partially accepted.

*Table 4 about here*

Table 5 shows that for *I just want to buy things, I don't care what*, the majority of MC (75.9%) and 50% of SC consumers disagreed, which supports the evidence presented earlier for SC and MC consumers having specific purchases in mind when the urge to buy takes effect.

Nevertheless, it should be noted that 31.2% of SC consumers either agree or strongly agree with the statement compared with only 10.9% of MC consumers, which indicates that a proportion of compulsive consumers purchase more indiscriminately as the condition worsens. The results in Table 5 also show significant differences between the groups, with a large effect size, for *I buy things because they are in a sale*. While only a minority of consumers in each of the four groups appear to be influenced by the stimulus of sales: 3.7% (NC), 9.1% (NCO), 16.6% (MC) and 36.2% (SC), the impact of sales increases with the severity of compulsion. This may reflect the impaired self-control dimension of compulsive purchasing in relation to the additional stimulus. Feeling powerful when buying also increases significantly with increasing compulsivity, with a very large effect size: from 13.5% (NC) to 66.6% (SC); it is interesting that even the NCO category is at 33%. This supports De Sarbo & Edwards' (1996) findings, and the high level of agreement in both the SC and MC categories confirms the sense of inner strength that compulsive buyers gain from purchasing.

*Table 5 about here*

It should be noted that while there was general disagreement across the groups in relation to the statement: *I just want to buy things, I don't care what*, there is a significant increase in agreement with increasing compulsivity in relation to *I buy things I don't need*, with a very large effect size: from 15.9% (NC) and 45.5% (NCO) to 75.2% (MC) and 87.5% (SC). This indicates that while compulsive purchasers generally still care about what they buy, they recognize that they may not need it. The number of unplanned purchases also increases with increasing compulsivity, with a very large effect size: from 39.7% (NC) to 89.6% (SC). However, the non-significant differences between MC and SC consumers and the high number of unplanned purchases among NC consumers indicates that this variable cannot be considered as either a critical indicator of CBB severity or an exclusive feature of the disorder. By contrast, the first four variables in Table 5 do distinguish between mild and more severe forms of the disorder; therefore, these were examined further with a regression analysis (Table 6).

*Table 6 about here*

Interestingly, indiscriminate purchasing is significant for both MC and SC consumers, but with a higher beta value for the latter; this indicates that while a minority of SC consumers have something in mind when urges compel them to buy, the strength of the urges pushes them to acquire anything that may release their anxiety. Sales are non-significant for both MC and SC consumers, which suggests that their purchases are driven by compulsive rather than impulsive urges. Interestingly, both feeling powerful when purchasing and buying unneeded items are



significant for SC, but not for MC consumers. The experience of a sense of power may reflect the level of importance of the action of buying for SC consumers; this provides a temporary feeling of control at releasing anxiety, while the indiscriminate purchasing is indicative of the more extreme need to release anxiety through buying; both variables mirror the coping mechanisms which are adopted with the increasing severity of the disorder.

The results relating to the compulsive buyers' product choices support, in part, the findings of previous studies e.g. Lejoyeux & Weinstein (2010). The data show that compulsive consumers purchase a wide range of goods and services among which apparel products are of most interest to both male and females in both MC and SC categories. While there is no significant difference relating to gender in the MC category, there are differences between male and female SC consumers. For example, females purchase more perfumes and cosmetics, toiletries, jewellery, magazines and home entertainments; by comparison, male SC consumers purchase more food and soft drinks, alcohol, and electronic accessories.

### **Credit Card Influence**

Three specific items from Roberts and Jones' (2001) 12 item scale were used to evaluate the extent to which the use of credit cards impacts on CBB: *I am less concerned with prices of products when I use credit card(s)*; *I am more impulsive when I shop with a credit card(s)*; *I spend more when I use credit card(s)*. The three items presented a very high internal consistency (Cronbach's Alfa .97), therefore, structural equation modeling with AMOS 25 was then used to examine the influence of credit card use on compulsive buying behaviour. To facilitate a direct comparison with previous studies (e.g. D'Astous, 1990; McElroy et al., 1994; Black, 2001; Roberts & Jones, 2001; Park & Davies Burns, 2005; Dittmar, 2005; Norum 2008; Kellett & Bolton, 2009; Phau &

Woo, 2008, Wang & Xiao, 2009; Alemis & Yap, 2013; Khare, 2013; Cheng-Xi Aw et al., 2018), no differentiation was made between MC and SC consumers. The relationship between credit card use and compulsive buying is shown in Figure 2. There is a good fit between the model and the data: (NFI: .98; TLI: .96; CFI: .98; RMSEA: .06), although the variance explained by credit cards (CCC) on compulsive purchasing (CBB) is low.

To examine further the relationship between credit card use and compulsive behaviour, a series of one-way analyses of variance were undertaken to compare attitudinal differences between the NC, NCO, MC and SC groups on all of the 12 items in Roberts and Jones' (2001) scale (Table 7). There are significant differences between all of the groups, with a large effect size, for both *I frequently use available credit on one credit card to make a payment on another card* and *I worry how I will pay off my credit card debt*. By comparison, there are significant differences on *I often make only the minimum payment on my credit cards* between non-compulsive consumers and the other three groups, with a moderate effect size. Overall, while there is evidence for significant differences between the groups on the impact of credit cards in relation to some of the items, there is also evidence of no differences on other items. As such, hypothesis 9 is only partially supported.

*Table 7 about here*

It is interesting that there is a significant difference between MC and SC consumers regarding credit card influence on concern over price: *I am less concerned with the price of a product when I use a credit card(s)*, but no difference in relation to credit card influence on increasing either impulsivity or expenditure. This could be crucial in explaining the controversy in the literature

about the effect of credit cards on CBB, highlighting the importance of differentiating between the two groups because of their different attitudes towards pricing. Overall, given the significant differences between the MC and SC categories and the large effect sizes, the variables: *I frequently use available credit on one credit card to make a payment on another card, I worry how I will pay off my credit card debt also, and I am less concerned with the price of a product when I use a credit card(s)* appear to be critical in distinguishing between MC and SC categories.

Therefore, it was important to undertake a further comparative analysis between MC and SC consumers in regard to these items using OLS regression analysis (Table 8) to identify the impact of CBB on each individual variable. The results are non-significant for MC consumers indicating that they may be able to manage the repayment of their credit card debts and, with regard to the effects of prices on their condition, either apply a rational approach to spending or they spend the money necessary to satisfy their compulsions regardless of the method of payment. By comparison, while SC consumers presented a non-significant result for the repayment of credit card debts with other credit cards, the result was significant for both *I am less concerned with the price of a product when I use a credit card(s)* and *I worry how I will pay off my credit card debt*, indicating that credit cards contribute to their excessive spending, which they are aware of and concerned about. This may also explain the low variance in the relationship (SEM analysis) between credit card use and CBB when MC and SC consumers are combined together.

*Table 8 about here*

### **Post-purchase Attitudes**

Post-purchase attitudinal differences between NC, NCO, MC and SC groups were examined using one-way ANOVA tests (Table 9). There were significant differences, with a small effect size, between the groups in relation to feeling depressed after shopping with the exception of MC and SC consumers. The results are similar for post-purchase regret, but with significant differences between all four groups, with a moderate effect size; as such, hypothesis 10 is accepted. There are also significant differences between the four groups, with a large effect size, for post-purchase self-questioning about the reasons for buying (Valence et al., 1988; Ridgway et al., 2008). This appears consistent with the majority of compulsive buyers having in mind what to purchase when they experience the urge to buy. The result relating to having unopened bags of shopping at home (Ridgway et al., 2008) highlights significant differences between the groups, with a large effect size, as would be expected. Hypothesis 11 is therefore accepted. Post-purchase guilt among compulsive buyers (e.g. Kwak et al., 2004) shows significant differences, with a large effect size, between the non-compulsive and compulsive consumer groups (including NCO and both MC and SC groups), although, as was the case with depression, the difference between MC and SC consumers is non-significant. As a result, hypothesis 12 is only partially accepted. It is interesting to note the higher effect size for post-purchase guilt compared with the relatively low effect size for feeling depressed.

*Table 9 about here*

Overall, the post-purchase attitude results also indicate that *I regret shopping, I buy something and when I get home I am not sure why I have bought it, and I have bags of shopping at home, which I have not opened yet* can distinguish between mild and more severe compulsive cases. An

OLS regression analysis was therefore undertaken to further examine these differences (Table 10).

*Table 10 about here*

The results show that post-purchase regret is significant for MC but not for SC consumers; this may indicate that the former are still able to feel some remorse, whereas SC consumer compunction is diminished despite the consequences because of the intensity of the urges associated with their extreme condition. The non-significance of uncertainty about the reasons for purchasing probably reflects the findings relating to having something in mind before purchasing. By comparison, the accumulation of unopened bags of shopping is significant for both MC and SC consumers, but while the relatively low beta value for the former reflects their less irrational consumption, the statistic for SC consumers is indicative of their more disordered purchasing at this later stage in the development of the condition.

## **CONCLUSION**

This study makes an important contribution to the existing knowledge of CBB by firstly using the recently developed and more effective screening tool (Maccarrone-Eaglen and Schofield, 2017) to re-examine the distinguishing characteristics of the disorder, the compulsive buyers' decision-making process, their product preferences, the impact of credit card use on their condition, and their post-purchase attitudes. Secondly, significant differences in these criteria have been identified across NC, NCO, MC and SC groups through the testing of 12 hypotheses. This is important given the complexity of the disorder. Thirdly, the analysis has determined the critical

criteria that distinguish between mild and severe forms of the disorder, which have hitherto been neglected and yet they represent key diagnostic and predictive attitudinal and behavioural factors.

### **General Characteristics of Compulsive Buyers**

The results show that there are significant differences between non-compulsive and compulsive consumers on a wide range of variables, for example, there was both a higher incidence of CBB in the 18-24 age group, and a higher proportion of female consumers in both MC and SC consumer groups, but equal representation of male and female consumers in the NCO category. This suggests that while both genders experience occasional compulsive buying urges and have the potential to progress into a more serious condition, its development into a problematic disorder is more prevalent in women. Together with Granero et al.'s (2016) findings, this indicates that the level of compulsivity beyond that experienced by NCO consumers continues with increased intensity for females while for males, it may develop into a different type of disordered behaviour e.g. gambling, which is more prevalent in young males. Therefore, further research should be undertaken to examine the development of CBB and related compulsive behaviours in adolescent males. Moreover, given that CBB is prevalent in young consumers, that a student sample was used in this study, and that significant differences in compulsivity were found between undergraduate and postgraduate students, the impact of education level should also be examined in future research.

The comparative analysis of mildly and severely compulsive urges to buy showed that, in general, SC consumer compulsions, while continually intense, peak in the morning, mainly at home, and become slightly less intense through the afternoon and evening whereas MC consumer urges inversely reflect this pattern by beginning at a relatively low level of intensity in the morning and becoming increasingly powerful throughout the day. The majority of both MC and SC consumers

shop for long periods of time and comparatively more SC consumers have something in mind when they experience the urge to make a purchase, possibly because of their perpetual anxiety and continuous need to compulsively purchase. Further research is therefore needed to increase our understanding of the evolution of CBB and identify appropriate interventions to address the development of the condition.

Interestingly, the findings showed a higher propensity among MC consumers to feel anxious or nervous on days when not shopping compared with SC consumers; this may result from SC consumers' conditioning through habitual anxiety and/or more frequent relief from anxiety through repeated shopping compared with MC consumers' whose resistance may exacerbate their anxiety levels.

### **Compulsive Buyers' Purchasing Behaviour**

Previous research reported that compulsive buyers dress up (Black, 2007) before engaging in long ritualistic shopping sessions (Clark & Calleja, 2008) and this study found that this is the case for both MC and SC consumers. Moreover, while these two sub-groups are clearly distinguished on the basis of the variable: *I just want to buy things, I don't care what*, which is a critical indicator of severe compulsivity that reflects their degree of impaired self-control, it is interesting that half of the SC consumers indicated that they have specific purchases in mind when the urge to buy takes effect. There were also significant differences between MC and SC consumers on the variable *I feel powerful when I buy goods*, showing the stronger effect of buying on SC consumers compared with MC consumers who are more conditioned by the pressure of their anxiety when not shopping and more preoccupied with fulfilling their ritualistic purchasing (Valence et al., 1988). Differences between the two categories were also identified in relation to *I buy things I*

*don't need*; the majority of MC consumers exhibited a more rational approach and a predisposition to purchasing items which are needed, while those with more severe forms of the condition tended to purchase more indiscriminately. Overall, this suggests that some critical indicators distinguish more effectively between MC and SC consumers than between non-compulsive and compulsive consumers; further research is therefore needed to verify this finding.

Although the results confirmed the findings from previous research that compulsive consumer purchases tend to focus on particular types of goods such as apparel products (e.g. Xu, 2008; Lejoyeux & Weinstein, 2010), this study has shown that there are differences between both male and female and SC and MC consumers for example, female SC consumers prefer cosmetics, magazines and household products while male SC consumers focus on food, alcohol and personal accessories.

In addition, this study found a critical distinction between SC and MC consumers with regard to the impact of the use of credit cards on their behaviour. MC consumers are not affected by the use of credit cards while SC consumers are less concerned with prices and more concerned with debt repayment when purchasing with credit cards. These findings not only emphasize behavioural differences between the two compulsive categories but may also explain the extant disagreement in the literature about credit card influence because previous studies did not distinguish between MC and SC groups. However, differences of opinion in previous research may also result from the use of different CBB screening tools; those who found credit cards to have influenced CBB (Joireman et al. 2010; Norum, 2008; Parks & Davis Burns, 2005, Wang & Xiao, 2009) adopted Faber & O'Guinn's (1992) scale, while Khare (2013) found no influence using Valence et al.'s (1988) screener.



### **Post Purchase Attitude**

In general, there are high levels of post-purchase guilt in both compulsive sub-groups, however, a critical difference between MC and SC consumers relates to regret. SC consumers' lack of regret may be justified by the absence of alternative solutions to the relief of their anxiety other than buying products and services. By comparison, MC consumers possibly experience regret because they have longer periods between urges, less pressure and are therefore capable of more rational behaviour. Surprisingly, the results relating to experiencing post-purchase depression, a typical CBB trait, were non-significant and, as such, did not support the findings from previous research. However, Ridgway et al.'s (2008) post-purchase findings relating to unopened bags of shopping at home were supported in relation to SC consumer behaviour.

### **Final Remarks**

The more interesting and important findings from the study relate to the significant differences between the MC and SC categories because of the insights they provide for CBB diagnosis. This study has identified two sets of critical variables which have the potential to distinguish between both NC and MC consumers and between MC and SC consumers, respectively. The items that indicate a mild form of CBB are: *I feel anxious/nervous on days I don't shop* and *I regret shopping*, whereas those that indicate a severe form of CBB are: *When I have an urge to buy I cannot think about anything else; I feel powerful when I buy goods; I buy things I don't need, and I have bags of shopping at home, which I have not opened yet*. These are important findings which make a significant contribution to the literature on CBB and to counselling practitioners because of the different levels of support which should be offered in relation to the severity of the condition. However, further research is needed to establish the external validity of these

results and to test the potential of these variables for possible use as sub-items in Maccarrone-Eaglen & Schofield's (2017) screening tool.

While the study provides new insights into compulsive buying behaviour, its limitations should also be acknowledged. First, although the overall sample size for the study is relatively large and the size of the compulsive sub-group is consistent with previous CBB studies, the subdivision of compulsive consumers into mild and severe categories resulted in a relatively small SC group. Further research is therefore needed, using both MC and SC consumers, to corroborate the findings from this study. Second, the study has considered NCO, MC and SC categories of CBB, but its cross-sectional design precludes consideration of the disorder's temporal dimension in that its progression among participants over time has not been examined. Future studies should therefore use a longitudinal design to facilitate the analysis of CBB development and its attendant characteristics. The relative importance of primary compulsive triggers, their individual and combined influences and the complexity of the temporal sequencing of events following initial stimulus through to the place of purchase, including the ideomotor effect of secondary stimuli require further investigation. Additionally, the post-purchase condition and subsequent buying behaviour should also be included in future research. This will increase understanding of the CBB mechanisms and processes in both mildly and severely compulsive consumers.

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**Table 1****Demographic Profile of Respondents**

	df	$\chi^2$	phi	Sub-Category	Total	%	NC	%	NCO	%	MC	%	SC	%
Gender	3	35.8***	.16	Male	526	37.1	263	50	186	35.4	70	13.3	7	1.3
				Female	891	62.9	335	37.6	319	35.8	196	22	41	4.6
Age	9	29.7***	.15	18-24 years	1001	70.6	380	38	373	32.9	212	21.2	36	3.6
				25-34 years	301	21.2	153	50.8	99	32.9	41	13.6	8	2.7
				35-44 years	90	6.3	50	55.6	28	31.1	9	10	3	3.3
				45-54 years	26	1.8	15	57.7	6	23.1	4	15.4	1	3.8
Education (Studying for)	9	32.0***	.15	Bachelor	1082	76.3	427	39.5	386	35.7	227	21	42	3.9
				Masters	202	14.2	111	55	65	32.2	23	11.4	3	1.5
				PhD	57	4.0	31	54.4	19	33.3	5	8.8	2	3.5
				Other	77	5.4	29	37.7	36	46.8	11	14.3	1	1.3
Relationship	3	1.1 <sup>ns</sup>	.03	In relationship	795	56.5	338	42.5	280	35.2	147	18.5	30	3.7
				Single	612	43.5	253	41.3	223	36.4	118	19.3	18	2.9
Ethnicity	15	14.6 <sup>ns</sup>	.10	White	1148	81.0	487	42.4	415	36.1	211	18.4	35	3.1
				Black	73	5.1	35	48	24	32.9	12	16.4	2	2.7
				Indian	46	3.2	21	45.7	14	30.4	7	15.2	4	8.7
				Chinese	20	1.4	7	35	7	35	6	30	-	-
				Other Asian	87	6.1	30	34.5	32	36.8	19	21.8	6	6.9
				Mixed	44	3.1	18	41	14	31.8	11	25	1	2.3
Occupation	12	19.5 <sup>ns</sup>	.12	FT student	1069	75.4	456	42.7	389	36.4	194	18.1	30	2.8
				FT stud/PT work	261	18.4	93	35.6	93	35.6	61	23.4	14	5.4
				PT student	34	2.4	19	55.9	8	23.5	6	17.6	1	2.9
				PT stud/FT work	33	2.3	19	57.6	9	27.3	3	9.1	2	6.1
				PT stud/PT work	21	1.5	11	52.4	7	33.3	2	9.5	1	4.8

Notes: NC: Non-Compulsive, NCO: Non-Compulsive with Occasional CBB occurrence, MC: Mild Compulsive, SC: Severely Compulsive, \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , ns: non-significant.

**Table 2****Agreement with Compulsive Buying Indicators by Compulsive Group Category**

	df	F	$\eta^2$	NC/NCO	NC/MC	NC/SC	NCO/MC	NCO/SC	MC/SC
I'm an indecisive person	3	36.46***	.07	.46***	.80***	.95***	.34***	.49**	.15 <sup>ns</sup>
I delay important decisions	3	38.82***	.08	.32***	.79***	1.25***	.47***	.92***	.45 <sup>ns</sup>
I'm often late for appointments	3	28.71***	.06	.31***	.69***	.96***	.39***	.66***	.27 <sup>ns</sup>
As a teenager I was told what to do with money	3	17.86***	.04	.33***	.49***	.86***	.17 <sup>ns</sup>	.53**	.36 <sup>ns</sup>
As a teenager I sometimes had money to indulge	3	6.59***	.01	.20**	.32***	.46*	.13 <sup>ns</sup>	.27 <sup>ns</sup>	.14 <sup>ns</sup>
Collecting things is important to me	3	22.94***	.05	.45***	.57***	.63***	.12 <sup>ns</sup>	.22 <sup>ns</sup>	.09 <sup>ns</sup>
I feel the need to gamble	3	23.57***	.05	.30***	.56***	.62***	.26**	.32 <sup>ns</sup>	.06 <sup>ns</sup>
I often respond to direct mail offers	3	129.98***	.21	.63***	1.06***	1.60***	.42***	.97***	.54***
I feel anxious/nervous on days I don't shop	3	95.07***	.16	.12***	.45***	1.15***	.32***	1.02***	.70***

Notes: ANOVA and Tukey HSD mean differences, NC: Non-Compulsive, NCO: Non-Compulsive with Occasional CBB occurrence, MC: Mildly Compulsive, SC: Severely Compulsive;

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , ns: non-significant.

**Table 3****Differences in Respondents' Urge to Buy by Group Category**

	<b>df</b>	<b>F</b>	<b><math>\eta^2</math></b>	<b>NC/NCO</b>	<b>NC/MC</b>	<b>NC/SC</b>	<b>NCO/MC</b>	<b>NCO/SC</b>	<b>MC/SC</b>
I have a strong urge to buy something	3	309.07***	.39	.53***	1.23***	2.51***	.70***	1.98***	1.29***
I try to resist the urge to buy	3	1.25 <sup>ns</sup>	.00	.04 <sup>ns</sup>	.02 <sup>ns</sup>	.05 <sup>ns</sup>	.02 <sup>ns</sup>	.01 <sup>ns</sup>	.03 <sup>ns</sup>
If resisting: always, sometimes, depends on the product	3	11.40***	.03	1.22**	2.21***	3.17***	.99 <sup>ns</sup>	1.95 <sup>ns</sup>	.96 <sup>ns</sup>

Notes: ANOVA and Tukey HSD mean differences, NC: Non-Compulsive, NCO: Non-Compulsive with Occasional CBB occurrence, MC: Mild Compulsive, SC: Severely Compulsive, \* $p < .05$ ,

\*\* $p < .01$ , \*\*\* $p < .001$ , ns: non-significant.

**Table 4****Compulsive Buying Indicators by Group Category**

	<b>df</b>	<b>F</b>	<b><math>\eta^2</math></b>	<b>NC/NCO</b>	<b>NC/MC</b>	<b>NC/SC</b>	<b>NCO/MC</b>	<b>NCO/SC</b>	<b>MC/SC</b>
I just want to buy things, I don't care what	3	165.03***	.26	-.28***	-.85***	-1.67***	-.57***	-1.38***	-.81***
I buy things because they are in a sale	3	58.37***	.11	-.35***	-.69***	-1.30***	-.34***	-.95***	-.61***
I feel powerful when I buy goods	3	150.96***	.23	-.83***	-1.34***	-1.79***	-.51***	-.96***	-.46*
I buy things I don't need	3	223.93***	.32	-1.05***	-1.74***	-2.19***	-.68***	-1.14***	-.45*
I buy things I don't plan to buy	3	136.98***	.23	-.86***	-1.33***	-1.63***	-.47***	-.78***	-.30 <sup>ns</sup>

Notes: ANOVA and Tukey HSD mean differences, NC: Non-Compulsive, NCO: Non-Compulsive with Occasional CBB occurrence, MC: Mild Compulsive, SC: Severely Compulsive, \* $p < .05$ ,

\*\* $p < .01$ , \*\*\* $p < .001$ , ns: non-significant.

**Table 5****Compulsive of Compulsive Buying Indicators by Group Category**

	df	$\chi^2$	V	Cat.	Total	NC	%	NCO	%	MC	%	SC	%
I just want to buy things; I don't care what	12	432.28***	.32***		<b>1404</b>	<b>597</b>		<b>500</b>		<b>265</b>		<b>48</b>	
				1	1000	541	90.6	344	68.8	108	40.8	7	14.6
				2	681	49	8.2	128	25.6	93	35.1	17	35.4
				3	196	7	1.2	19	3.8	35	13.2	9	18.8
				4	94	--	--	8	1.6	26	9.8	10	20.8
				5	35	--	--	1	0.2	3	1.1	5	10.4
I buy things because they are on sale	12	196.56***	.22***		<b>1412</b>	<b>596</b>		<b>504</b>		<b>265</b>		<b>47</b>	
				1	406	236	39.6	125	24.8	40	15.1	5	10.6
				2	681	291	48.8	254	50.4	122	46.0	14	29.8
				3	196	47	7.9	79	15.7	59	18.5	11	23.4
				4	94	19	3.2	37	7.3	31	11.7	7	14.9
				5	35	3	0.5	9	1.8	13	4.9	10	21.3
I feel powerful when I buy goods	12	395.43***	.31***		<b>1409</b>	<b>594</b>		<b>503</b>		<b>264</b>		<b>48</b>	
				1	296	233	39.2	52	10.3	11	4.2	--	--
				2	395	198	33.3	153	30.4	38	14.4	6	12.5
				3	313	87	14.6	132	26.2	84	31.8	10	17.2
				4	384	71	12.0	150	29.8	108	40.1	19	39.5
				5	57	5	1.5	16	3.2	23	8.7	13	27.1
I buy things I don't need	12	601.08***	.38***		<b>1411</b>	<b>594</b>		<b>504</b>		<b>265</b>		<b>48</b>	
				1	310	257	43.3	43	8.5	8	3.0	2	4.2
				2	336	181	30.5	131	26.0	23	8.7	1	2.1
				3	199	61	10.3	101	20.0	34	12.8	3	6.3
				4	494	91	15.3	215	42.7	166	62.4	22	45.8
				5	72	4	0.6	14	2.8	34	12.8	20	41.7
I buy things I don't plan to buy	12	439.7***	.32***		<b>1412</b>	<b>596</b>		<b>503</b>		<b>265</b>		<b>48</b>	
				1	164	142	23.8	20	3.9	1	0.4	1	2.1
				2	170	110	18.5	52	10.3	6	2.3	2	4.2
				3	201	107	18.0	66	13.1	26	9.8	2	4.2
				4	730	222	37.2	326	64.8	167	63.0	15	31.3
				5	147	15	2.5	39	7.6	65	24.5	28	58.3

Notes: V: Cramer's V; NC: Non-Compulsive, NCO: Non-Compulsive with Occasional CBB occurrence, MC: Mild Compulsive, SC: Severely Compulsive, \*p < .05, \*\*p < .01, \*\*\*p < .001, <sup>ns</sup> non-significant

Sub-Category: 1= Strongly Disagree; 2= Disagree; 3= Neither; 4= Agree; 5 Strongly Agree.

**Table 6****Comparison of Compulsive Buying Indicators by Mild and Severe Group Categories**

<b>Mildly Compulsive</b>			
	<b>B</b>	<b>SE B</b>	<b>Beta</b>
I just want to buy things; I don't care what	.34	.12	.18**
I buy things because they are in a sale	.18	.12	.10 <sup>ns</sup>
I feel powerful when I buy goods	.10	.12	.05 <sup>ns</sup>
I buy things I don't need	.11	.13	.05 <sup>ns</sup>
Notes: $R^2 = .07$ ; * $p < .05$ , ** $p < .01$ , *** $p < .001$ , <sup>ns</sup> non-significant			
<b>Severely Compulsive</b>			
	<b>B</b>	<b>SE B</b>	<b>Beta</b>
I just want to buy things; I don't care what	.70	.23	.48**
I buy things because they are in a sale	-.19	.21	-.15 <sup>ns</sup>
I feel powerful when I buy goods	.49	.24	.26*
I buy things I don't need	.53	.25	.28*
Notes: $R^2 = .20$ ; * $p < .05$ , ** $p < .01$ , *** $p < .001$ , <sup>ns</sup> non-significant.			



**Table 7****Attitude to Credit Card Use by Group Category**

	df	F	$\eta^2$	NC/NCO	NC/MC	NC/SC	NCO/MC	NCO/SC	MC/SC
My credit cards are usually at their maximum credit limit	3	32.36***	.18	-.67***	-1.32***	-2.04***	-.66***	-1.37***	-.71 <sup>ns</sup>
I frequently use available credit on one credit card to make a payment on another card	3	29.90***	.16	-.39**	-.97***	-1.73***	-.58***	-1.33***	-.75*
I worry how I will pay off my credit card debt	3	31.00***	.17	-.87***	-1.19***	-2.15***	-.32 <sup>ns</sup>	-1.27**	-.95*
I often make only the minimum payment on my credit cards	3	14.28***	.09	-.56**	-.96***	-1.47**	-.39 <sup>ns</sup>	-.90 <sup>ns</sup>	-.51 <sup>ns</sup>
I am less concerned with the price of a product when I use a credit card (s)	3	39.71***	.20	-.83***	-1.39***	-2.31***	-.56**	-1.48***	-.93*
I am more impulsive when I shop with a credit card(s)	3	37.03***	.19	-.91***	-1.40***	-1.92***	-.49**	-1.01*	-.52 <sup>ns</sup>
I spend more when I use a credit card(s)	3	43.27***	.22	-.95***	-1.45***	-2.15***	.50*	-1.20**	-.71 <sup>ns</sup>
I have too many credit cards	3	14.21***	.08	-.43**	-.72***	-1.46***	-.29 <sup>ns</sup>	-1.03**	-.74 <sup>ns</sup>
I always pay off my credit card(s) debts at the end of each month	3	2.37 <sup>ns</sup>	.01	.04 <sup>ns</sup>	.21 <sup>ns</sup>	-.89 <sup>ns</sup>	-.18 <sup>ns</sup>	-.89 <sup>ns</sup>	-.67 <sup>ns</sup>
I am rarely late in making payments on my credit cards	3	.34 <sup>ns</sup>	.00	.12 <sup>ns</sup>	.03 <sup>ns</sup>	.10 <sup>ns</sup>	-.09 <sup>ns</sup>	-.02 <sup>ns</sup>	.07 <sup>ns</sup>
I rarely go over my available credit limit	3	1.27 <sup>ns</sup>	.01	.14 <sup>ns</sup>	.33 <sup>ns</sup>	.25 <sup>ns</sup>	.18 <sup>ns</sup>	.10 <sup>ns</sup>	-.08 <sup>ns</sup>
I rarely take cash advances on my credit cards	3	.80 <sup>ns</sup>	.01	.15 <sup>ns</sup>	.26 <sup>ns</sup>	.17 <sup>ns</sup>	.11 <sup>ns</sup>	.02 <sup>ns</sup>	.10 <sup>ns</sup>

Notes: ANOVA and Tukey HSD mean differences, NC: Non-Compulsive, NCO: Non-Compulsive with Occasional CBB occurrence, MC: Mild Compulsive, SC: Severely Compulsive; \*p < .05,

\*\*p < .01, \*\*\*p < .001, ns: non-significant

**Table 8****Impact of Credit Card Use on CBB**

<b>Mild Compulsive</b>			
	<b>B</b>	<b>SE B</b>	<b>Beta</b>
I am less concerned with the price of a product when I use a credit card(s)	.10	.07	.09 <sup>ns</sup>
Notes: R <sup>2</sup> = .01			
I frequently use available credit on one credit card to make a payment on another card	.09	.08	.07 <sup>ns</sup>
Notes: R <sup>2</sup> = .01			
I worry how I will pay off my credit card debt	.08	.07	.07 <sup>ns</sup>
Notes: R <sup>2</sup> = .01			
<b>Severely Compulsive</b>			
	<b>B</b>	<b>SE B</b>	<b>Beta</b>
I am less concerned with the price of a product when I use a credit card(s)	-.31	.30	-.34*
Notes: R <sup>2</sup> = .12			
I frequently use available credit on one credit card to make a payment on another card	-.29	.16	-.27 <sup>ns</sup>
Notes: R <sup>2</sup> = .07			
I worry how I will pay off my credit card debt	-.28	.13	-.31*
Notes: R <sup>2</sup> = .10			
Notes: *p < .05, **p < .01, ***p < .001, <sup>ns</sup> non-significant			

**Table 9****Post-Purchase Attitude to Buying by Group Category**

	df	F	$\eta^2$	NC/NCO	NC/MC	NC/SC	NCO/MC	NCO/SC	MC/SC
I feel depressed after shopping	3	27.38***	.05	-.17***	-.40***	-.54***	-.23***	-.37**	-.14 <sup>ns</sup>
I regret shopping	3	43.31***	.08	-.29***	-.50***	-.80***	-.21***	-.55***	-.34*
I buy somethings and when I get home I am not sure why I have bought it	3	83.79***	.15	-.34***	-.76***	-1.11***	-.42***	-.77***	-.35*
I have bags of shopping at home, which I have not opened yet	3	102.16***	.17	-.36***	-.87***	-1.50***	-.50***	-1.18***	-.63*
At times I have felt somewhat guilty after buying something because the purchase seemed unreasonable	3	120.29***	.20	-.86***	-1.25***	-1.59***	-.39***	-.73***	-.34 <sup>ns</sup>

Notes: ANOVA and Tukey HSD mean differences, NC: Non-Compulsive, NCO: Non-Compulsive with Occasional CBB occurrence, MC: Mild Compulsive, SC: Severely Compulsive, \*p < .05,

\*\*p < .01, \*\*\*p < .001, ns: non-significant.

**Table 10****Comparison of Mild and Severe Groups Post-Purchase Attitude**

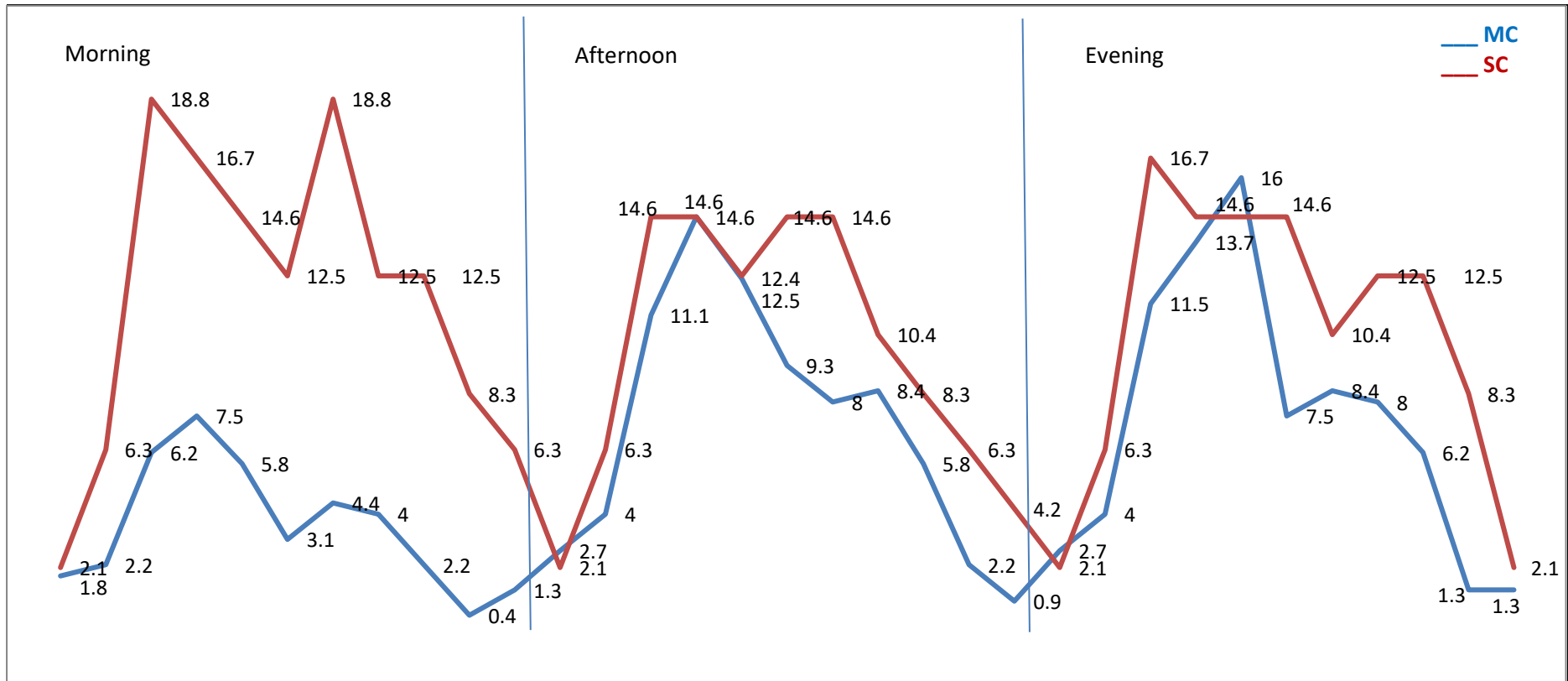
<b>Mildly Compulsive</b>			
	<b>B</b>	<b>SE B</b>	<b>Beta</b>
I regret shopping	.31	.15	.14*
I buy something and when I get home I am not sure why I have bought it	.09	.15	.04 <sup>ns</sup>
I have bags of shopping at home, which I have not opened yet	.24	.11	.14*

Notes:  $R^2 = .05$ ; \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , <sup>ns</sup> non-significant

<b>Severely Compulsive</b>			
	<b>B</b>	<b>SE B</b>	<b>Beta</b>
I regret shopping	-.16	.22	-.10 <sup>ns</sup>
I buy something and when I get home I am not sure why I have bought it	-.13	.25	-.07 <sup>ns</sup>
I have bags of shopping at home, which I have not opened yet	.69	.19	.49**

Notes:  $R^2 = .25$ ; \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , <sup>ns</sup> non-significant.

**Figure 1. Comparison of Mild and Severe Group Daily Urge to Buy Patterns**



**Figure 2: Impact of Credit Card Use on CBB**

