Journal of Economic Psychology 33 (2012) 461–470

Contents lists available at SciVerse ScienceDirect

Journal of Economic Psychology

journal homepage: www.elsevier.com/locate/joep

The impact of financial management practices and financial attitudes on the relationship between materialism and compulsive buying

Thi H. Pham [a], Keong Yap [b,*], Nicki A. Dowling [c]

[a] School of Psychology and Psychiatry, Monash University, Building 17, Clayton Campus, Wellington Road, Victoria 3800, Australia
[b] Division of Psychology, School of Health Sciences, RMIT University, Plenty Road, Bundoora, Victoria 3080, Australia
[c] Problem Gambling Research and Treatment Centre, Melbourne Graduate School of Education, Old Geology Building, University of Melbourne, Victoria 3010, Australia

ARTICLE INFO

Article history:
Received 8 March 2011
Received in revised form 9 December 2011
Accepted 19 December 2011
Available online 28 December 2011

JEL classification:
P46

PsycINFO classification:
3920
3300

Keywords:
Compulsive buying
Materialism
Financial attitudes
Financial management practices
Cognitive-behavioral therapy

ABSTRACT

Although materialism has a robust relationship with compulsive buying, psychological theories also suggest that financial attitudes and financial management practices would significantly predict compulsive buying severity even after controlling for materialism. We also expected that financial attitudes and financial management practices would moderate the relationship between materialism and compulsive buying. Results partially supported our hypotheses. Financial management practices, but not financial attitudes, significantly predicted compulsive buying severity after controlling for materialism. In addition, financial management practices, but not financial attitudes, significantly moderated the relationship between materialism and compulsive buying severity. These findings support the inclusion of financial management components in current psychosocial interventions and indicate that highly materialistic individuals with poor financial management practices are particularly prone to compulsive buying problems. Further implications and suggestions for future research are discussed.

© 2011 Elsevier B.V. All rights reserved.

1. Introduction

Many people make purchases impulsively and buy things that they do not need. Such impulse buying behavior is typically triggered by an environmental cue like an attractive shopping display or a desired item being on sale. Although, shoppers who buy on an impulse may regret their actions after some reflection, in most cases, the impulse buying behavior occurs infrequently and does not lead to serious financial or social problems (Faber, 2010). By contrast, individuals who shop compulsively engage in repetitive and extreme forms of buying behavior, often in an attempt at dealing with some internal stimulus like high levels of stress and anxiety or low self-esteem (DeSarbo & Edwards, 1996). Consequently, they typically report an irresistible impulse to buy, exhibit a loss of control over their buying behavior, and persist in buying behavior despite adverse consequences (Dittmar, 2004). Such compulsive buying results in severe psychological and financial problems, including exacerbated negative emotions, strained interpersonal relationships, and financial debt (Miltenberger et al.,

* Corresponding author. Tel.: +61 3 9925 6692; fax: +61 3 9925 7303.
E-mail addresses: thihp@unimelb.edu.au (T.H. Pham), keong.yap@rmit.edu.au (K. Yap), n.dowling@unimelb.edu.au (N.A. Dowling).

0167-4870/$ - see front matter © 2011 Elsevier B.V. All rights reserved.
doi:10.1016/j.joep.2011.12.007

2003). Compulsive buying is estimated to occur in 2% to 16% of the general population (Dittmar, 2004) and is increasingly recognized as a serious clinical problem requiring psychological and psychiatric treatment (Black, Repertinger, Gaffney, & Gabel, 1998).

1.1. Compulsive buying and materialism

Faber (1992) suggested that individuals engaged in compulsive buying to deal with marked feelings of inadequacy and low self-esteem. Consistent with this theory, Faber and Christenson (1996) found that compared with normal consumers, compulsive buyers were more emotional and in particular, more likely to experience negative moods like boredom, sadness, and anxiety prior to a decision to shop. Furthermore, compulsive buyers were also more likely than normal consumers to experience improvements to negative mood while shopping. Expanding on Faber's conceptualization of the disorder, Dittmar (2004) proposed a two-factor model to explain why compulsive buyers specifically engaged in shopping to manage low self-esteem and negative moods, as opposed to other forms of addictive behaviors. She suggested that compulsive buyers tend to subscribe to materialistic values such that their identity and self-esteem are dependent upon the amount and type of material possessions in their life. As a result, materialistic individuals see the acquisition of material goods as the primary way of attaining success, happiness, and a sense of identity (Richins, 1994, 2004). Dittmar suggested that materialistic individuals who have low self-esteem and see themselves as not meeting up to their ideal identity would consequently be more likely to engage in compulsive buying.

Consistent with Dittmar's theory, several studies have found a relationship between materialism and compulsive buying (e.g., Dean, Carroll, & Yang, 2007; Goldberg, Gorn, Peracchio, & Bamossy, 2003; Hanley & Wilhelm, 1992). For example, Mowen and Spears (1999) found that materialism accounted for 28% of the variance in compulsive buying levels within a university population. Likewise, Dittmar (2005) found that compulsive buyers had significantly higher levels of materialistic value endorsement than residentially matched controls. She also found that materialistic value endorsement was more predictive of compulsive buying inclinations than age and gender. To further support her argument, she found that a sample comprising of consumer research panelists, who have consistently higher ratings of materialism than the general population, reported significantly higher levels of compulsive buying than a residentially matched control group.

The relationship between materialism and compulsive buying was further supported by findings that showed more frequent pro-spending attitudes among individuals with high materialistic values compared to individuals low on materialism (e.g., Richins, 1994; Rindfleisch, Burroughs, & Denton, 1997; Roberts, 2000; Watson, 2003; Yurchisin & Johnson, 2004). Also consistent with Dittmar's research, Kyrios, Frost, and Steketee (2004) found strong associations between compulsive buying and cognitions that placed a high value on the acquisition of objects. In particular, compulsive buyers had strong emotional attachments to objects and obtained relief from negative emotions through the acquisition of objects.

1.2. Interaction between materialism and money conservation

Although the relationship between materialism and compulsive buying is well established, it is obvious that not all individuals with materialistic values develop problems with compulsive buying. To explain such variations, Tatzel (2002) proposed a taxonomy of "money worlds" and suggested that attitudes towards money conservation interacted with materialism to influence how much individuals spent on material items. Of particular interest in our examination of compulsive buying are two categories of consumers with high levels of materialism: the *big spender* and the *value seeker*. Tatzel suggested that individuals who are materialistic and "loose with money" (i.e., easy-going and relaxed about spending money) can be categorized as *big spenders.* These individuals spend money without much thought about the price of items. Instead, the primary aim of the *big spender* is to acquire and keep items as a means of attaining happiness, power, and prestige. In this attempt to grasp the elusive goal of happiness through the acquisition of material possessions, they are more prone to compulsive buying problems and high levels of debt. On the other hand, Tatzel suggested that individuals who are materialistic but "tight with money" (i.e., frugal and unwilling to spend money) could be categorized as *value seekers.* These individuals are less prone to compulsive buying. While they also place a high value on material possessions, they are more conscious of the importance of getting the best value for their money and therefore are willing to delay gratification until they can obtain the best bargain.

In support of Tatzel's theory, Troisi, Christopher, and Marek (2006) found that materialism and low money conservation predicted impulsive buying. They also found a significant interaction between materialism and money conservation on attitudes toward debt; *value seekers* (i.e., high materialism, high money conservation) were more likely to have negative attitudes toward debt. However, they failed to find any interaction between materialism and money conservation on impulse buying. There was therefore no support for the idea that *big spenders* (i.e., high materialism and low money conservation) were more prone to impulse buying. Limitations of the study included low reliability of the scales used in the study and a lack of variability in their sample which comprised mainly of college students. As suggested by Troisi and colleagues, materialism and money conservation may simply have an additive effect on impulse buying. Further research of the model with better measures might yield different results. Another limitation with the study by Troisi and colleagues is the use of impulse buying as an outcome measure. There might only be small differences in impulse buying across the different "money worlds" because impulse buying is part of normal buying behavior (Rook & Fisher, 1995) and can occur for items regardless of their monetary value. For example, *big spenders* might impulsively purchase a branded item in an upmarket boutique store while *value seekers* might impulsively purchase a similar item at a charity shop or at a sale. Perhaps a measure of compulsive buying might have yielded different results. Unfortunately, there is a scarcity of research into the relationship between compulsive buying, materialism, money conservation, and related constructs like financial management practices and financial attitudes.

1.3. Financial attitudes and financial management practices

Although compulsive buyers primarily aim to deal with self-discrepancy and negative mood through their excessive spending (Miltenberger et al., 2003), these compulsive buying episodes often lead to or exacerbate financial problems, which in turn paradoxically contribute to stress and negative mood (Roberts, 1998). It is not surprising that many compulsive buyers report a tendency to overspend, experience some form of debt, and prefer using credit cards over other payment methods (Lo & Harvey, 2011; Ridgeway, Kukar-Kinney, & Monroe, 2006; Roberts, 2000; Roberts & Jones, 2001). Indeed, successive episodes of compulsive buying have been found to contribute to financial problems ranging from moderate credit card debt to bankruptcy (Black, 2007; Roberts & Pirog, 2004). It is therefore likely that the presence or absence of pre-existing financial management practices might have an impact on whether or not compulsive buying becomes a clinical problem.

Financial management practices help individuals or households keep track of their income and expenditure in order to improve their financial status. These practices involve behaviors such as budgeting, making payments on time, saving money, managing one's credit card debt, and having an idea of one's net worth (Davis & Weber, 1990; Parrotta & Johnson, 1998). Financial management practices are recommended by financial counselors as a way of putting a halt to excessive spending, and it is likely that compulsive buyers are not aware of or do not engage in these practices. Likewise, individuals who are *loose with money* would also not engage in financial management practices (Tatzel, 2002). *Big spenders* are therefore expected to be high on materialism but have low engagement in financial management practices while *value seekers* are expected to be high on materialism and have greater use of financial management practices. It also follows that because financial management practices are an indicator of money conservation, such practices might moderate the relationship between materialism and compulsive buying (Tatzel, 2002).

It has therefore been suggested by several researchers that financial counseling for compulsive buyers to improve their financial management practices could effectively disrupt the cycle of compulsive buying and consequential debt (Black, 2001; Lown & Cook, 1990; Roberts, 1998). Not surprisingly, financial management practices such as cash management and eliminating credit card use feature in Burgard and Mitchell's (2000) cognitive-behavioral group program for compulsive buying. In a study of the treatment's efficacy, Mitchell, Burgard, Faber, Crosby, and de Zwann (2006) found that after 10 weeks of treatment, compulsive buyers had significant reductions in compulsive buying episodes compared with the wait-list control group. These improvements were maintained at the 6-month follow-up. As there were many components to the treatment, it is impossible to conclude whether financial management practices played a specific and significant role in the treatment outcome. Nevertheless, the demonstration of treatment efficacy provides some preliminary evidence that improving financial management practices could help individuals with compulsive buying.

In addition to this indirect evidence from treatment outcome studies, there is also some evidence to show that financial management practices have an impact on financial problems in the general population. For example, Hayhoe, Leach, Turner, Bruin, and Lawrence (2000) examined financial practices in 480 university students and found that the skill of tracking and prioritizing how money should be spent was linked to the presence and the depth of financial stressors. In addition, they found that a lack of financial management practices increased behaviors that led to debt, such as paying for items with insufficient funds. Hayhoe and colleagues also reported that female students who were already in debt often regretted making certain purchases and had trouble saving money.

In addition to financial management practices, financial attitudes may also influence compulsive buying. These attitudes reflect an individual's values regarding various aspects of saving money (Lim & Teo, 1997; Parrotta & Johnson, 1998). Whilst positive or negative attitudes towards consistently planning, achieving, and maintaining one's goals to saving money do not necessarily constitute the actual behavior, Parrotta and Johnson found that people are more likely to engage in sound financial management practices if they have a positive outlook towards saving money. This may mean that individuals will be less likely to buy superfluous items impulsively if they are taught to take on positive financial attitudes and consistently engage in pro-saving behaviors. It is not surprising that several studies have shown a relationship between financial attitudes and financial hardship (e.g., Hayhoe & Wilhelm, 1998; Lim, Teo, & Loo, 2003). Although it is unlikely that financial attitudes would guarantee immunity from compulsive buying, Tatzel's (2002) model suggests that materialistic individuals who have negative financial attitudes would have a tendency towards compulsive buying. That is, similar to financial management practices, financial attitudes should also moderate the relationship between materialism and compulsive buying.

1.4. Research aims and hypotheses

Although the literature on compulsive buying indicates that many compulsive buyers have significant financial problems and that dealing with these problems has an impact on the disorder, the relationship between compulsive buying, financial attitudes, and financial management practices have not been extensively explored (Ridgeway et al., 2006; Roberts, 2000; Roberts & Jones, 2001). While there is a strong relationship between materialism and compulsive buying, researchers have not examined the impact of financial attitudes and financial management practices on this relationship. As suggested by

Tatzel (2002), it is possible that financial attitudes and financial management practices have a significant influence on the strength of the relationship between materialistic value endorsement and compulsive buying.

The aim of this study is to investigate the relationship between financial management practices, financial attitudes, and materialism, and their relative influence on compulsive buying. We hypothesize that (1) compulsive buying will be positively correlated with materialism, (2) compulsive buying will be negatively correlated with financial attitudes and financial management practices, (3) materialism, financial attitudes, and financial management practices will predict compulsive buying, with financial attitudes and financial management practices remaining significant predictors even after controlling for materialism, and (4) financial attitudes and financial management practices will moderate the relationship between materialism and compulsive buying.

2. Method

2.1. Participants

The sample comprised of 118 participants (73 females and 45 males) recruited via word of mouth, advertisements posted around Monash University in Melbourne, Australia, and from psychology and sociology classes at Monash University. Participants were between the ages of 18 and 63 years (M = 27.2 years, SD = 10.3 years, Mdn = 23.0 years). Sixty-five (55.1%) individuals currently have or had previously owned a credit card, whilst 53 (44.9%) participants have never owned a credit card. Weekly incomes (after tax) ranged from AUS$50 to $1800 ($M$ = $448, SD = $326, Mdn = $400). A majority of participants had paid work; 37.3% were fully employed, 45.8% had casual or part-time employment and 16.9% were unemployed.

2.2. Materials

Participants were administered a survey comprising measures evaluating demographic characteristics (including age, gender, credit card use, employment status, and weekly income), compulsive buying, financial management practices, financial attitudes, and materialism. The following self-report measures were used:

2.2.1. Compulsive Buying Scale (CBS; Faber & O'Guinn, 1992)

The level of compulsive buying in participants was measured using Faber and O'Guinn's (1992) 7-item Compulsive Buying Scale (CBS). An example of items from this questionnaire is *I felt anxious or nervous on days I didn't go shopping*. Participants rated frequency or degree of agreement to items on a 5-point Likert scale. The first item was measured separately (1 = *strongly agree* and 5 = *strongly disagree*) from the last six statements (1 = *very often* and 5 = *never*). An equation (see Faber & O'Guinn, 1992) was used to calculate an index of the severity of compulsive buying problems; lower scores indicated more compulsive buying problems and scores equal to or lower than −1.34 indicated a high likelihood of clinically significant compulsive buying. The CBS possesses high internal consistency (α = .95) and external validity, classifying 89.8% of the general population and 85.3% of the compulsive buying group correctly. Cronbach's alpha of the scale in the current sample was acceptable (α = .78). The equation by Faber and O'Guinn was used to calculate the CBS score as an index of compulsive buying severity. There were 10 participants (8.5%) in the current sample who obtained a CBS score of less than or equal to −1.34, indicating clinically significant compulsive buying problems.

2.2.2. Financial Management Scale (FMS; Parrotta & Johnson, 1998)

The FMS comprised 35 items that measured a wide range of financial management practices including cash management, credit management, risk management, capital accumulation, retirement, and estate planning (e.g., 'I follow a weekly or monthly budget.'). Participants rated each item on a 5-point Likert scale (1 = 'strongly disagree' and 5 = 'strongly agree'). Overall financial management practices were measured by summing up scores on all items after addressing nine reverse-scored items; higher scores indicated better financial management practices. The FMS has adequate construct validity and good internal consistency (α = .86) (Parrotta & Johnson, 1998). The internal consistency reliability of the scale in the current sample was high (α = .88).

2.2.3. Modified Financial Attitudes Scale (MFAS; Parrotta & Johnson, 1998)

The 15-item MFAS is a measure of attitudes towards planning and saving money (e.g., *It is important for a family to develop a regular pattern of saving and stick to it.*). Participants rated each item on a 5-point scale (1 = *strongly disagree* and 5 = *strongly agree*). Financial Attitudes were calculated after summing all items, with higher scores indicating positive attitudes towards saving money. The MFAS has adequate construct validity and internal consistency reliability (α = .75) (Parrotta & Johnson, 1998). Cronbach's alpha for the scale in the current sample was good (α = .77).

2.2.4. Material Values Scale Short Form (Richins, 2004)

The 15-item MVSSF was used to assess materialism in participants. The MVSSF has three subscales with five items each: Success (e.g. *I like to own things that impress people*), Centrality (e.g., *I like a lot of luxury in my life*), and Happiness (e.g., *I'd be happier if I could afford to buy more things*). Each item is rated on a 5-point scale (1 = *strongly disagree* and 5 = *strongly agree*).

There are six reverse-scored items. The total score on all items indicates the level of materialism with higher scores indicating elevated levels of materialism. The MVSSF has good construct validity and internal consistency reliability ($\alpha = .86$) (Richins, 2004). Cronbach's alpha of the scale in the current sample was good ($\alpha = .85$).

2.3. Procedure and data analysis

Ethics approval was obtained from the Monash University Standing Committee on Ethics in Research Involving Humans (SCERH). Participants either completed the questionnaires online or were given hard copies of the questionnaire with reply-paid envelopes. All statistical analyses were performed with SPSS 17.0. Pearson product-moment correlations and multiple regression analyses were used to ascertain the relationship between the variables and to assess the influence of independent variables (FMS financial management practices, MFAS financial attitudes, and MVSSF materialism) on CBS compulsive buying. Since the CBS adopted lower scores to indicate greater problems with compulsive buying, the operationalized forms of the hypotheses were (1) CBS compulsive buying will be negatively correlated with MVSSF materialism, (2) CBS compulsive buying will be positively correlated with FMS financial management practices and MFAS financial attitudes, (3) MVSSF materialism, MFAS financial attitudes, and FMS financial management practices will predict CBS compulsive buying, with MFAS and FMS making significant contributions to the regression model after controlling for MVSSF, (4) FMS financial management practices and MFAS financial attitudes will moderate the relationship between CBS compulsive buying and MVSSF materialism.

There were only 14 missing values (<5% of all actual values), which were replaced using series mean substitution, a conservative procedure, as suggested by Tabachnick and Fidell (1996). There were no extreme univariate outliers for all variables, and differences between the mean and the 5% trimmed mean for each variable were very small. The Shapiro–Wilks test showed a significant departure from normality for CBS compulsive buying (negatively skewed) and MVSSF materialism (positive kurtosis). However, residuals for all multiple regressions using non-transformed data were normally distributed. Non-transformed data was therefore used in the data analyses in order to facilitate ease of interpretation of the results. Residual scatterplots were examined to test the primary assumptions for each multiple regression. The assumptions of linearity and homoscedasticity of the residuals were satisfied. Assumptions of multicollinearity were also tested by examining the variance inflation factor, which indicated that this assumption was not violated. Mahalanobis distances for each regression analysis was computed and multivariate outliers were identified with the employment of the $p < .001$ criterion. In all three multiple regressions conducted, there were only 10 multivariate outliers in total. However, five of these had CBS compulsive buying scores of less than or equal to -1.34, indicating clinically significant compulsive buying. Further inspection revealed no error in data recording. Due to this over-representation of compulsive buyers amongst the multivariate outliers, all outliers were kept in the analysis to ensure generalizability of the results.

3. Results

3.1. Preliminary analysis

There was no significant difference between males and females on CBS compulsive buying, $t(116) = 1.21$, $p = .23$. Descriptive statistics for the CBS and intercorrelations between CBS, MVSFF materialism, FMS financial management practices, and MFAS financial attitudes presented in Table 1. As expected, there was a moderate negative correlation between CBS compulsive buying and MVSSF materialism, and moderate positive correlations between CBS compulsive buying and both MFAS financial attitudes and FMS financial management practices.

3.2. Prediction of compulsive buying

To examine if financial attitudes and financial management practices contributed significantly to the prediction of compulsive buying over and above materialism, a two-step hierarchical multiple regression was conducted with CBS compulsive

Table 1
Means, standard deviations, and correlation Matrix of CBS compulsive buying, MVSSF materialism, MFAS financial attitudes, and FMS financial management practices ($n = 118$).

	M	*SD*	CBS	MVSSF	MFAS
1. CBS compulsive buying	1.30	1.78			
2. MVSSF materialism	43.68	8.92	$-.44^{**}$		
3. MFAS financial attitudes	55.7	8.26	$.41^{**}$	$-.09$	
4. FMS financial management practices	115.23	17.75	$.51^{**}$	.13	$.68^{**}$

Note: CBS = Compulsive Buying Scale; MVSSF = Material Values Scale Short Form; MFAS = Modified Financial Attitudes Scale; FMS = Financial Management Scale.
** $p < .01$.

Table 2
Hierarchical regression analyses predicting CBS compulsive buying ($n = 118$).

Variable	B	$SE\ B$	β	sr^2
Step 1				
MVSSF materialism	−.089	.017	−.436**	.436
Step 2				
MVSSF materialism	−.075	.015	−.377**	.373
MFAS financial attitudes	.026	.021	.121	.089
FMS financial management practices	.038	.010	.376**	.276

Note: CBS = Compulsive Buying Scale; MVSSF = Material Values Scale Short Form; MFAS = Modified Financial Attitudes Scale; FMS = Financial Management Scale.
** $p < .001$.

Table 3
Hierarchical regression analyses predicting CBS compulsive buying and probing the interaction between MVSSF materialism and MFAS financial attitudes ($n = 118$).

Variable	B	$SE\ B$	β	sr^2
Step 1				
MVSSF materialism	−0.081	0.015	−0.404**	−.403
MFAS financial attitudes	0.080	0.017	0.372**	.371
Step 2				
MVSSF materialism	−0.081	0.015	−0.406**	−.405
MFAS financial attitudes	0.073	0.017	0.338**	.317
MVSSF × MFAS	0.002	0.001	0.103	.097

Note: Centered data used for predictor variables; CBS = Compulsive Buying Scale; MVSSF = Material Values Scale Short Form; MFAS = Modified Financial Attitudes Scale. Step 1 adjusted $R^2 = .316$, Step 2 adjusted $R^2 = .320$. $\Delta R^2 = .009$, $\Delta F(1,114) = 1.60$, $p = 0.21$.
** $p < .001$.

Table 4
Hierarchical regression analysis predicting CBS compulsive buying and probing the interaction between MVSSF materialism and FMS financial management practices ($n = 118$).

Variable	B	$SE\ B$	β	sr^2
Step 1				
MVSSF materialism	−0.075	0.015	−0.376**	−.373
FMS financial management practices	0.046	0.007	0.458**	.454
Step 2				
MVSSF materialism	−0.076	0.014	−0.380**	−.376
FMS financial management practices	0.041	0.008	0.410**	.388
MVSSF × FMS	0.001	0.001	0.155*	.148

Note: Centered data used for predictor variables; MVSSF = Material Values Scale Short Form; FMS = Financial Management Scale. Step 1 adjusted $R^2 = .385$, Step 2 adjusted $R^2 = .402$. $\Delta R^2 = .022$, $\Delta F(1,114) = 4.27$, $p = 0.04$.
* $p < .05$.
** $p < .001$.

buying scores as the dependent variable. MVSSF materialism was entered in the first step. FMS financial management practices and MFAS financial attitudes were entered in the second step. Step 1 of the regression analysis showed that materialism accounted for 18% of the variance, adjusted $R^2 = .18$, $F(1,116) = 27.22$, $p < .001$. The final model accounted for 39% of the variance in the prediction of CBS scores, adjusted $R^2 = .39$, $F(3,114) = 25.74$, $p < .001$. Results showed a significant increase in R^2 with addition of FMS financial management practices and MFAS financial attitudes, and that only financial management practices made a significant contribution to the second step in this model (see Table 2).

3.3. Moderating effect of financial attitudes and financial management practices

The moderating effects of financial attitudes and financial management practices on the relationship between materialism and compulsive buying were examined. As recommended by Aiken and West (1991), continuous predictor variables were centered prior to regression analyses. Separate hierarchical multiple regression analyses were conducted with CBS as the dependent variable (see Tables 3 and 4). In the first analysis, MVSSF materialism and MFAS financial attitudes were entered in the first step. The product term between MVSSF and MFAS was entered in the second step. The results showed that financial attitudes did not significantly moderate the relationship between MVSSF and CBS (see Table 3).

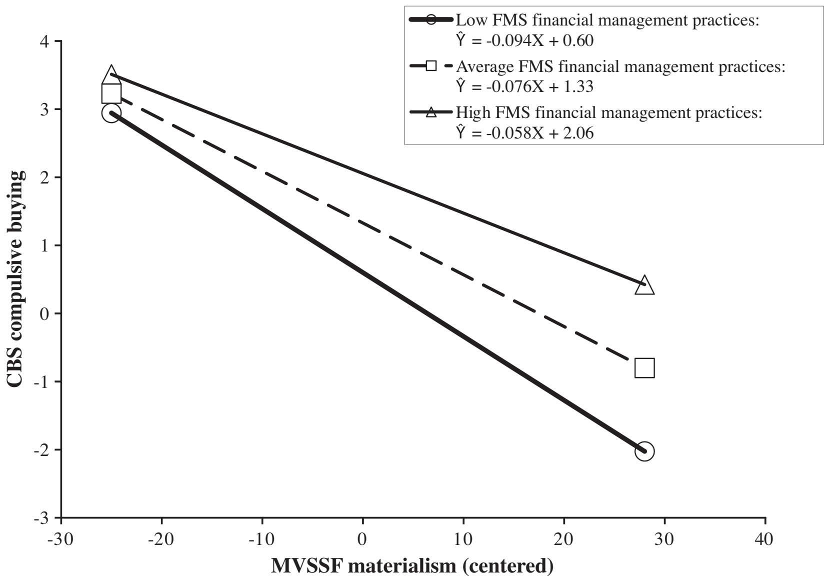

Fig. 1. Interaction effect between materialism and financial management practices on compulsive buying. *NB.* CBS = Compulsive Buying Scale, MVSSF = materialism, FMS = Financial Management Scale.

In the second analysis, MVSSF materialism and FMS financial management practices were entered in the first step. The product term between MVSSF and FMS was entered in the second step. Results showed that a significant R^2 change in the second step, $\Delta R^2 = .022$, $\Delta F(1,114) = 4.27$, $p = 0.04$, indicating a small but significant interaction between MVSSF materialism and FMS financial management practices, $\beta = 0.155$, $p < .05$. In other words, our results showed that financial management practices moderated the relationship between materialism and compulsive buying.

3.4. Interaction between materialism and financial management practices

A series of simple regression equations were generated in order to probe the significant interaction between materialism and financial management practices. Following Cohen and Cohen's (1983) suggestion, three values of FMS were chosen to calculate simple regression equations: (1) the mean FMS, (2) one standard deviation above FMS mean, and (3) one standard deviation below FMS mean. This allowed us to ascertain the relationship between materialism and compulsive buying at different levels of FMS. The results of the computations of simple regression equations for the three values were plotted in Fig. 1. The plot of the interaction indicated that financial management practices did not have an impact on compulsive buying for low levels of materialism. However, at high levels of materialism, financial management practices had a buffering effect on compulsive buying. As can be seen from the graph, none of the individuals with average and above scores on the FMS met Faber and O'Guinn's CBS cutoff score for compulsive buying (-1.34) regardless of their level of materialism. On the other hand, individuals with low scores on the FMS were more likely to meet the CBS cutoff score if they had high levels of materialism.

4. Discussion

The results of the present study supported most of the hypotheses. As expected, there was a moderate positive correlation between compulsive buying and materialism. There were also moderate negative correlations between compulsive buying and both financial attitudes and financial management practices. Materialism, financial attitudes, and financial management practices significantly predicted compulsive buying, and these factors accounted for 39% of the variance. However, after controlling for materialism, only financial management practices contributed significantly to the regression model. Finally, our results showed that financial management practices, but not financial attitudes, moderated the relationship between materialism and compulsive buying. In examining the interaction, we found that highly materialistic individuals were more prone to compulsive buying if they engaged in poor financial management practices. On the other hand, highly materialistic individuals with good financial management practices were less likely to report compulsive buying problems. In other words, our results showed that financial management practices were a protective buffer to the impact of materialism on compulsive buying. The present study is the first to identify a main effect of financial management practices on compulsive buying, and the moderating effect of financial management practices on the relationship between materialism and compulsive buying.

4.1. Implications of study

Our findings are consistent with previous studies that have found a relationship between compulsive buying and materialism (Dittmar, 2005; Roberts, 2000; Watson, 2003). They lend further support for Dittmar's (2005) two-factor model, which highlights the role of materialism as a predisposing factor. The study was also consistent with Tatzel's (2002) taxonomy of "money worlds". Results showed that there was no relationship between materialism and either financial attitudes or financial management practices. That is, individuals who are materialistic can vary in their attitudes and ability to conserve money. In particular, our study supports Tatzel's characterization of the *big spender* as an individual who is more prone to compulsive buying because of high levels of materialism and low money conservation. The participants in our study who were materialistic but had poor financial management practices were indeed more likely to be compulsive buyers as opposed to materialistic participants with good financial management practices.

Dittmar had suggested that critical reflection on materialistic values and the role of the media in encouraging such values in at-risk populations might help prevent further increases in the rates of compulsive buying. However, Dittmar also noted that such an intervention is difficult because it runs counter to the prevailing culture that values consumerism and consumption. We therefore suggest that in addition to countering materialistic values, financial education and counseling directed at improving financial management practices might also have a considerable impact on preventing compulsive buying. Specifically, the teaching of basic personal financial management practices such as cash and credit management, budgeting, and saving could perhaps form practical units in high school curriculums and might assist in the prevention of compulsive buying. Several studies have shown that many young people have low levels of personal financial literacy and can benefit from financial literacy training (Consumer and Financial Literacy Taskforce, 2004; Financial Services Authority, 2006a). These studies provide support for the inclusion of financial literacy programs into the school curriculum (Financial Services Authority, 2006b; Russell, Brooks, & Nair, 2006) and one would expect such programs to also have an impact on compulsive buying. However, it should be noted that financial literacy may not necessarily translate into behavior change and long term evaluation of such programs on behavioral outcomes are required.

With regards to the treatment of compulsive buying, our study supports the inclusion of financial management components in current psychosocial interventions. However, because of the limited impact of financial attitudes, we suggest that simply increasing positive attitudes to financial behaviors, like saving money, is unlikely to have a significant impact on compulsive buying, unless there is an actual engagement in that practice. Consequently, one might need to add additional practical components for financial management practices in clinical interventions so that patients are not only aware of but also able to consistently use these new skills. In addition, regular monitoring of financial management practices and long term follow-up sessions might encourage the actual ongoing practice of these skills.

4.2. Limitations of study and further research

The present study is cross-sectional; it is therefore possible that the impact of financial management practices on compulsive buying is not causal. Individuals who are unable to engage in financial management practices might also have compulsive buying problems because of a third variable. For example, personality features like low levels of conscientiousness and high levels of impulsivity might result in both poor financial management practices and compulsive buying. Several researchers have already found an association between such personality factors and compulsive buying (e.g., DeSarbo & Edwards, 1996; Mowen & Spears, 1999). Future research with the inclusion of these personality factors would help clarify their impact on financial management practices and materialism.

Our study is also limited by its use of a non-clinical and predominately university sample. Given that university students differ from the general population in several ways (e.g., income, age, experiences with money, attitudes to spending, and financial management practices), caution should be observed in generalizing the findings to other members or groups of the population, and to a clinical population. However, Dittmar (2005) reported that younger people are particularly vulnerable to compulsive buying and consistent with this, there was a considerable proportion of individuals in our sample (8.5%) who could be classified as compulsive buyers based on Faber and O'Guinn's cutoff score for the CBS. It is therefore likely that we would find a similar relationship between financial management practices and compulsive buying in a clinical sample.

In our study, we measured compulsive buying as a unitary construct. However, several researchers have noted that compulsive buyers are not a homogenous group (Dittmar, 2004). In a cluster analysis of compulsive buyers, DeSarbo and Edwards (1996) reported two distinct groups: an *internal* and an *external* compulsive buying group. The *internal* compulsive buying group had more severe compulsive buying problems. These individuals were more impulsive and dependent, had lower self-esteem, and higher levels of anxiety. By contrast, individuals in the *external* compulsive buying group were more materialistic, socially isolated, avoidant, and were in greater denial about their problems. As the focus of the current study was on materialism, the results are more relevant to the *external* compulsive buying group. Recently, Faber (2010) suggested that this group of compulsive buyers should be categorized as excessive buyers rather than compulsive buyers and argued that individuals who suffered from compulsive buying disorder are not necessarily materialistic. The current study therefore applies to compulsive buyers who may not fulfill a clinical diagnosis of an impulse-control disorder, but would nonetheless suffer serious financial and interpersonal problems as a result of their buying behavior.

As already noted, it is also possible that personality variables like impulsivity might explain the relationship between financial management practices and compulsive buying. Consequently, addressing financial management practices in such a clinical population might not be effective in a severely impaired population. Recently, Mueller et al. (2010) suggested that individuals with an ''undercontrolled'' personality would have more severe compulsive buying problems and would be treatment-resistant. In their study of 68 treatment-seeking compulsive buyers, they indeed found such a cluster of individuals who, similar with DeSarbo and Edward's group of *internal* compulsive buyers, were more anxious, interpersonally sensitive, and impulsive. These individuals had more severe compulsive buying problems and were less responsive to cognitive-behavioral therapy. It is possible that such individuals might also have difficulties in engaging and persisting in good financial management practices. Whether improvements in financial management practices in such a group would lead to changes in compulsive buying severity is as yet unknown. It is possible that impulsivity does not preclude successful financial management intervention if there are strategies to manage such personality characteristics; further research on the impact of financial management practices in a clinical group of compulsive buyers is therefore crucial.

Acknowledgment

Thanks to Effie Z. Chen for her assistance in data collection.

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.

Black, D. W. (2001). Compulsive buying disorder: Definition, assessment, epidemiology and clinical management. *CNS Drugs, 15*, 17–27.

Black, D. W. (2007). A review of compulsive buying disorder. *World Psychiatry, 6*, 14–18.

Black, D. W., Repertinger, S., Gaffney, G. R., & Gabel, J. (1998). Family history and psychiatric comorbidity in persons with compuslive buying: Preliminary findings. *American Journal of Psychiatry, 155*, 960–963.

Burgard, M., & Mitchell, J. E. (2000). Group cognitive-behavioral therapy for buying disorders. In A. Benson (Ed.), *I shop, therefore I am – Compulsive buying and the search for self* (pp. 367–397). New York: Aronson.

Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analyses for the behavioral sciences* (2nd ed.). Hillsdale, New Jersey: Lawrence Erlbaum.

Consumer and Literacy Taskforce (2004). *Australian consumers and money*. Canberra, ACT: Commonwealth of Australia. <http://cfltaskforce.treasury.gov.au/content/_download/DiscussionPaper/html/index.asp>.

Davis, E. P., & Weber, J. A. (1990). Patterns and obstacles to financial management. *Financial Counseling and Planning, 1*, 41–51.

Dean, L. R., Carroll, J. S., & Yang, C. (2007). Materialism, perceived financial problems, and marital satisfaction. *Family and Consumer Sciences Research Journal, 35*, 260–281.

DeSarbo, W. S., & Edwards, E. A. (1996). Typologies of compulsive buying behavior: A constrained clusterwise. *Journal of Consumer Psychology, 5*, 231–262.

Dittmar, H. (2004). Understanding and diagnosing compulsive buying. In R. H. Coombs (Ed.), *Handbook of addictive disorders: A practical guide to diagnosis and treatment* (pp. 411–451). New Jersey: John Wiley & Sons.

Dittmar, H. (2005). Compulsive buying – A growing concern? An examination of gender, age, and endorsement of materialistic values as predictors. *British Journal of Psychology, 96*, 467–491.

Faber, R. J. (1992). Money changes everything: Compulsive buying from a biopsychosocial perspective. *American Behavioral Scientist, 35*, 809–819.

Faber, R. J. (2010). Diagnosis and epidemiology of compulsive buying. In A. Müller & J. E. Mitchell (Eds.), *Compulsive buying: Clinical foundations and treatment* (pp. 3–19). New York: Routledge.

Faber, R. J., & Christenson, A. G. (1996). In the mood to buy: Differences in the mood states experienced by compulsive buyers and other consumers. *Psychology and Marketing, 13*, 803–820.

Faber, R. J., & O'Guinn, T. C. (1992). A clinical screener for compulsive buying. *Journal of Consumer Research, 19*(3), 459–469.

Financial Services Authority (2006a). *Financial capability in the UK: Establishing a baseline*. London: Author. <www.fsa.gov.uk/pubs/other/fincap_baseline.pdf>.

Financial Services Authority (2006b). *Financial capability in the UK: Delivering change*. London: Author. <http://www.fsa.gov.uk/pubs/other/fincap_delivering.pdf>.

Goldberg, M. E., Gorn, G. J., Peracchio, L. A., & Bamossy, G. (2003). Understanding materialism among youth. *Journal of Consumer Psychology, 13*(3), 278–288.

Hanley, A., & Wilhelm, M. S. (1992). Compulsive buying: An exploration into self-esteem and money attitudes. *Journal of Economic Psychology, 13*, 5–18.

Hayhoe, C. R., Leach, L. J., Turner, P. R., Bruin, M. J., & Lawrence, F. C. (2000). Differences in spending habits and credit use of college students. *The Journal of Consumer Affairs, 34*, 113–133.

Hayhoe, C. R., & Wilhelm, M. S. (1998). Modeling perceived economic well-being in a family setting: A gender perspective. *Financial Counseling and Planning, 9*, 21–34.

Kyrios, M., Frost, R. O., & Steketee, G. (2004). Cognitions in compulsive buying and acquisition. *Cognitive Therapy and Research, 28*, 241–258.

Lim, V. K. G., & Teo, T. S. H. (1997). Sex, money and financial hardship: An empirical study of attitudes towards money among undergraduates in Singapore. *Journal of Economic Psychology, 18*, 369–386.

Lim, V. K. G., Teo, T. S. H., & Loo, G. L. (2003). Sex, financial hardship and locus of control: An empirical study of attitudes towards money among Singaporean Chinese. *Personality and Individual Differences, 34*, 411–429.

Lo, H., & Harvey, N. (2011). Shopping without pain: Compulsive buying and the effects of credit card availability in Europe and the Far East. *Journal of Economic Psychology, 32*, 79–92.

Lown, J. M., & Cook, J. (1990). Attitudes toward seeking financial counseling: Instrument development. *Financial Counseling and Planning, 1*, 93–115.

Miltenberger, W., Redlin, J., Crosby, R., Stickney, M., Mitchell, J., Wonderlich, S., et al (2003). Direct and retrospective assessment of factors contributing to compulsive buying. *Journal of Behavior Therapy and Experimental Psychiatry, 34*, 1–9.

Mitchell, J. E., Burgard, M., Faber, R., Crosby, R. D., & de Zwann, M. (2006). Cognitive behavioral therapy for compulsive buying disorder. *Behaviour Research and Therapy, 44*, 1859–1865.

Mowen, J. C., & Spears, N. (1999). Understanding compulsive buying among college students: A hierarchical approach. *Journal of Consumer Psychology, 8*, 417–430.

Mueller, A., Claes, L., Mitchell, J. E., Wonderlich, S. A., Crosby, R. D., & de Zwaan, M. (2010). Personality prototypes in individuals with compulsive buying based on the Big Five Model. *Behaviour Research and Therapy, 48*, 930–935.

Parrotta, J. L., & Johnson, P. J. (1998). The impact of financial attitudes and knowledge on financial management and satisfaction of recently married individuals. *Financial Counseling and Planning, 9*, 59–75.

Richins, M. L. (1994). Special possessions and the expression of material values. *Journal of Consumer Research, 21*, 522–533.

Richins, M. L. (2004). The material values scale: Measurement properties and development of a short form. *Journal of Consumer Research, 31*(1), 209–218.

Ridgeway, N. M., Kukar-Kinney, M., & Monroe, K. B. (2006). New perspectives on compulsive buying: Its roots, measurement and physiology. *Advances in Consumer Research, 33*, 131–133.

Rindfleisch, A., Burroughs, J. E., & Denton, F. (1997). Family structure, materialism, and compulsive consumption. *Journal of Consumer Research, 23*, 312–325.

Roberts, J. A. (1998). Compulsive buying among college students: An investigation of its antecedents, consequences, and implications for public policy. *The Journal of Consumer Affairs, 32*, 295–319.

Roberts, J. A. (2000). Consuming in a consumer culture: College students, materialism, status consumption, and compulsive buying. *The Marketing Management Journal, 10*, 76–91.

Roberts, J. A., & Jones, E. (2001). Money attitudes, credit card use, and compulsive buying among American college students. *Journal of Consumer Affairs, 35*, 213–240.

Roberts, J. A., & Pirog, S. F. (2004). Personal goals and their roles in consumer behaviour: The case of compulsive buying. *Journal of Marketing Theory and Practice, 12*, 61–72.

Rook, D. W., & Fisher, R. J. (1995). Normative influences on impulsive buying behavior. *Journal of Consumer Research, 22*(3), 305–313.

Russell, R., Brooks, R., & Nair, A. (2006). *Evaluation of the youth financial literacy trial program*. Melbourne, Australia: RMIT University. <http://www.anz.com/Documents/OLI/PeterLalorSecColTrialeval_RMIT.pdf>.

Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics* (3rd ed.). New York: Harper Collins.

Tatzel, M. (2002). ''Money worlds'' and well-being: An integration of money dispositions, materialism and price-related behavior. *Journal of Economic Psychology, 23*, 103–126.

Troisi, J. D., Christopher, A. N., & Marek, P. (2006). Materialism and money spending disposition as predictors of economic and personality variables. *North American Journal of Psychology, 8*, 421–436.

Watson, J. J. (2003). The relationship of materialism to spending tendencies, saving, and debt. *Journal of Economic Psychology, 24*, 723–739.

Yurchisin, J., & Johnson, K. K. P. (2004). Compulsive buying behavior and its relationship to perceived social status associated with buying, materialism, self-esteem, and apparel-product involvement. *Family and Consumer Sciences Research Journal, 32*(3), 291–314.