8

Psycho-Social Factors Impacting Credit Acquisition and Use by College Students

James W. Peltier
is a Professor of Marketing and Director of the Institute for Sales Excellence at the University of Wisconsin-Whitewater. His research interests include consumer psychology, decision making, public policy and societal marketing, interactive marketing and student-related issues. He has published in the European Journal of Marketing, International Journal of Advertising, Journal of Public Policy and Marketing, Consumer Affairs, Journal of Advertising Research, Industrial Marketing Management, Journal of Interactive Marketing, Journal of Marketing Education, *among others.*

Nadia Pomirleanu
is Assistant Professor of Marketing at the Lee Business School, University of Nevada-Las Vegas. She received her Ph.D. from the University of Central Florida. Her research interests relate to quality, customer satisfaction and delight, particularly how content generated by consumers when forming pre- and post-purchase evaluations can impact firm strategy. Her research has been published in the Journal of Retailing *and the* Journal of Research in Interactive Marketing.

Michael Endres
earned his Ph.D. in Psychology from Indiana University. After completing post-doctorate work at NeuBehavioral Research, he now is a Research Statistician the Hawaii Department of Health. He has published in the Journal of Abnormal Behavior *and* Behavioral Research.

Ereni Markos
is an Assistant Professor of Marketing at Suffolk University in Boston, MA. She completed her PhD in Marketing at the University of Massachusetts, Amherst and holds a degree in Integrated Marketing Communications from Emerson College in Boston. Her research interests include consumer privacy, digital marketing, retail atmospherics and cross cultural marketing. Her research has been published in the Journal of Interactive Marketing, Journal of Marketing Management, International Journal of Advertising *and the* Journal of Marketing.

Journal of Financial Services Marketing, 18, 271–284, 2013, DOI:10.1057/fsm.2013.20. 'Psycho-social factors impacting credit acquisition and use by college students', by James W. Peltier, Nadia Pomirleanu, Michael Endres and Ereni Markos.

T. Harrison (ed.), *Financial Literacy and the Limits of Financial Decision-Making*

Introduction

In this article, we offer conceptual and empirical insight for understanding the psycho-social variables that impact the acquisition of credit cards by college students and their ultimate use. Along this line of inquiry, and at a time when rising tuition, fewer grants and reduced state support has contributed to historic levels of student debt, a growing stream of research is investigating factors that impact 'financially risky' credit card usage by college students. For example, recent studies discuss parental involvement (Norvilitis and MacLean, 2010), impulsivity and compulsivity (Pinto and Mansfield, 2006; Wang and Xiao, 2009), financial anxiety (Nga *et al,* 2011), social status and materialism (Limbu *et al*, 2012), and locus of control (LOC) (Pirog and Roberts, 2007).

A recent study by Mae (2009) found that college seniors average US$4100 in credit card debt by the time that they graduate. This same study notes that 84 per cent of students own a credit card, the average number of cards per student is 4.6, 40 per cent admit they charge their card knowing they do not have the resources to pay it off and 45 per cent say they experience high levels of anxiety regarding their credit card balance. A factor contributing to high-debt acceptance among college students are the marketing efforts taken by credit card companies to acquire student users through intense direct mail campaigns, Internet and e-mail communications, and campus affinity programs (Sidoti and Devasagayam, 2010; Silver-Greenberg and Elgin, 2008; Thomas *et al,* 2011–2012). Compounding the problem is that college students often lack even a basic understanding of financial knowledge required to make informed choices (Warwick and Mansfield, 2000; Wang, 2012).

In response, the Obama administration received bipartisan support for the Credit Card Accountability, Responsibility, and Disclosure Act of 2009 (CARD). The CARD Act prohibits companies from giving credit cards to students under 21 unless they provide evidence of the ability to pay or have a co-signer, restricts companies from giving away free gifts as part of on campus marketing practices, bars credit bureaus from disclosing student contact information for mail and other marketing efforts, and mandates disclosure of contracts pertaining or agreements regarding credit card marketing.

Although the CARD Act has merit, Hawkins (2012) found that many college students are still qualifying for credit cards without proof of sufficient income to pay off their balances. These students also indicated that they are receiving a large number of credit card marketing efforts via varied communication channels. Equally problematic, the issuer-college disclosure requirement has led to virtually no change in the number of agreements for in campus marketing efforts. Protection from credit card acquisition is important in that total credit card debt is highly correlated with the number of credit cards students have at their disposal (Hayhoe *et al,* 2005). While total credit card debt is down from 2009, Transunion reported that the average credit-card debt per borrower approaches $5000, a 4 per cent increase from 2011 (*Wall Street Journal*, 2013). Although external factors such as the financial crisis of 2008 have impacted indebtedness, college students are also to blame because of potentially irrational financial decision-making processes (Amar *et al,* 2011; Bearden and Haws, 2012).

Excessive debt leads to serious economic, social and psychological consequences for college-aged students (Palmer *et al,* 2001; Dwyer *et al,* 2011). Faced with taxing financial situations, graduates with high debt report daily emotional stress, low self-esteem, decreased confidence in managing economic resources and diminished psychological well-being (Norvilitis *et al* (2003); Goetz *et al,* 2011. Long-term detriments include a higher likelihood to default on student loans, bankruptcy and damaged credit history, increased college dropout rate, difficulty finding employment after graduation, poor mental health and, in some cases, attempted suicide (Berg *et al,* 2010; Robb and Pinto, 2010). Although these psychosocial effects vary among college-aged students, the impact is significant and warrants attention (Harrison, 2012). Research is thus needed to understand psycho-social stressors to students' financial well-being and for informing public policy seeking to limit predatory practices by credit companies (Slowik, 2012).

Despite these concerns, research is needed that investigates the variety of factors affecting students' decisions to acquire and use credit cards (Chudry *et al,* 2011; Limbu *et al,* 2012). Lacking are comprehensive and integrative models that examine a range of antecedent factors and psychological processes that may lead to potentially risky credit behaviors of college students (Xiao *et al,* 2011). Moreover, because acquiring a credit card is new to many college students, integrative research that investigates the psychological and sociological drivers of credit card acquisition and their use is warranted (Chan *et al,* 2012).

The purpose of this article is to answer the call for more comprehensive research that frames credit card acquisition and use in terms of personality traits, psychological constructs and social behaviors (Xiao *et al,* 2011; Chan *et al,* 2012; Harrison, 2012; Limbu *et al,* 2012). We develop and test two empirical models to determine the convergence and divergence of these antecedents on *how many* credit cards people acquire and *how much debt* they accrue. We contribute to the literature by empirically investigating the conceptual underpinnings of these two divergent credit card behaviors. To our knowledge, this is the first study to examine how these antecedents differentially affect two distinct credit card behaviors, both of which have economic and psycho-social implications.

Literature review and model development

Credit card acquisition versus credit card debt balance

The bulk of credit card research has focused on debt acquisition rather than the number of credit cards acquired. The CARD Act, however, was enacted to address both issues. Regarding the acquisition of credit cards, the CARD Act places restrictions on the marketing practices used by credit card companies to acquire customers, and especially when targeting college students. Credit card debt is impacted in part *vis-à-vis* the requirement that students have the ability to pay (on their own and/or parents as cosigners). Although the number of credit cards is positively associated with total credit card debt (Hayhoe *et al,* 2005), we are particularly interested in whether they differ in terms of psycho-social antecedents.

As Figure 8.1 shows, the antecedent variables in our model contain six psycho-social dimensions: parental involvement, LOC, compulsivity, impulsivity, social status and materialism, and financial anxiety.

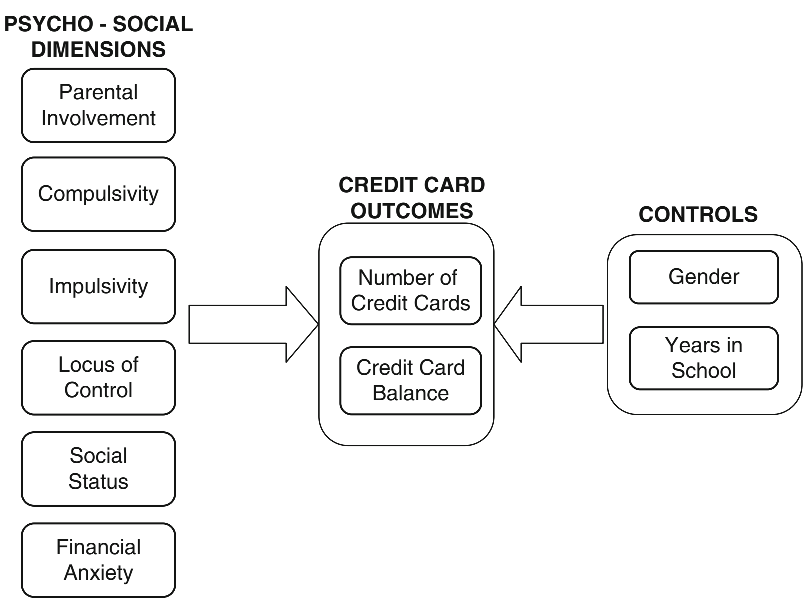

Figure 8.1 Proposed psycho-social credit card model

Although these variables have all been found to independently impact credit card usage, based on calls for comprehensive research that examines their interrelationships, our study seeks to understand their joint direct and indirect impact as well (Xiao *et al,* 2011; Harrison, 2012; Limbu *et al,* 2012). Our two dependent variables are number of credit cards and total credit card debt (Chan *et al,* 2012), outcome variables that to the best of our knowledge have not been compared and contrasted in comprehensive frameworks. In Table 8.1 we summarize key studies used to select our independent variables in our model.

Table 8.1 Review of the literature

	Conceptualization	**Authors**	**General findings**
Parental involvement	Parental involvement seen as a positive mechanism for preparing students for prudent credit card use while attending college	Joo *et al* (2003); Limbu *et al* (2012); Norvilitis and MacLean (2010); Xiao *et al* (2011)	Parental involvement reduces credit card debt
Compulsivity	Part of a broader addictive behavioral trait that consists of recurring, purposeful and often ritualistic consumer spending patterns	Joireman *et al* (2010); Norum (2008); O'Guinn and Faber (1989); Park and Burns (2005); Palan *et al* (2011); Roberts (1998); Roberts and Jones (2001); Wang and Xiao (2009)	Although not well studied in terms of number of credit cards, compulsivity is associated with riskier credit behavior
Impulsivity	Personality trait favoring immediate actions with little consideration for long-term consequences	Baumeister 2002; Bernthal *et al* (2005); Desarbo and Edwards (1996); Mansfield *et al* (2003); Nga *et al* (2011); Palmer *et al* (2001); Pirog and Roberts (2007); Plunkett and Buehner (2007); Soman (2001); Verplanken and Sato (2011)	Impulsivity is associated with riskier credit behavior

(*continued*)

Table 8.1 Continued

	Conceptualization	**Authors**	**General findings**
Social status materialism	Consumers evaluate themselves and others according to their possessions, placing a premium on social status as a lifestyle facilitator	Limbu *et al* 2012); Nga *et al* (2011); Park and Burns (2005); Roberts (1998); Roberts and Jones (2001); Wang and Xiao (2009)	Projecting social status through material possessions and purchases increases credit card usage
Locus of control	Propensity to the underlying cause of outcomes in terms of rewards and punishments. Internals feel they have more control than externals	Caputo (2012); Joo *et al* (2003); Pinto *et al* (2004); Plunkett and Buehner (2007); Tokunga (1993); Warwick and Mansfield (2000); Wang *et al* (2011); Watson (2009); Xiao *et al* 2011	Externals have more positive attitudes toward money and credit, manage credit cards and money more irresponsibly, and have higher credit card debt
Financial anxiety	Emotional anxiety related to money and debt	DeSarbo and Edwards (1996); Joireman *et al* (2010); Lim and Sng (2006); O'Guinn and Faber (1989); Pinto *et al* (2004); Ridgway *et al* (2008); Shapiro and Burchell (2012)	Financial anxiety is associated with greater credit card debt

Consumer socialization

Consumer socialization has been viewed as the process through which children and teens acquire knowledge and attitudes needed for functioning in the marketplace (Ward, 1974). As part of this learning process, young people are influenced by others across a wide range of consumer behaviors through consumption symbolism, social motives and materialism (John, 1999).

Although not the sole socialization mechanism, parental involvement plays a role in teaching children appropriate attitudinal and behavioral skills for interacting in the marketplace (Carlson and Grossbart, 1988; Yu, 2011). Specific to financial skills, parental involvement is a positive mechanism for preparing students for prudent credit card use while attending college (Xiao *et al,* 2011). For example, Joo *et al* (2003) find that the students whose parents frequently used credit cards were more likely to maintain positive attitudes toward credit and credit cards. In contrast, students whose parents mismanaged credit card debt used credit cards less frequently than those who witnessed positive spending habits. As such, positive and frequent parental involvement in both the pre- and post-acquisition stages is associated with lower credit card balances (Norvilitis and MacLean, 2010; Limbu *et al,* 2012). Consistent with the CARD Act, students may receive pre-acquisition support from their parents by having them as co-signers.

Hypothesis 1: Parental involvement is (a) positively related to the number of credit cards and (b) negatively related to total credit card debt.

Compulsive and impulsive buying behaviors

Compulsive buying is defined as the inability to control purchasing behavior and is typically seen through the lens of uncontrollable and irrational decision processes (Lo and Harvey, 2011). Broadly, O'Guinn and Faber (1989) characterize compulsive buying as part of a broader addictive behavioral trait that consists of recurring, purposeful and often ritualistic consumer spending patterns. Compulsive buying thus has the potential to negatively impact consumer welfare because of emotional and interpersonal consequences of debt (Park and Burns, 2005). In many ways, college students are conditioned to associate credits cards with unrestrained spending, partly as a result of vigorous on-campus marketing efforts by credit card companies (Manning, 2000; Pinto and Mansfield, 2006). Research shows that compulsive buyers are likely to have a greater number of credit cards and exhibit less restraint when using these cards (O'Guinn and Faber, 1989; Roberts, 1998; Roberts and Jones, 2001; Wang and Xiao, 2009). Compulsive credit card behavior by college students is due in part to 'living in the moment' (Norum, 2008). Specific to the current context, high levels of compulsivity among college students may lead to more credit cards (Palan *et al,* 2011) and greater debt (Joireman *et al,* 2010).

Impulsive buying behavior has been characterized as an unintended, less deliberate and irresistible decision-making process (Rook and Fisher, 1995; Solomon, 2007; Lai, 2010). Rook and Fisher (1995) argue that impulsivity is a personality trait favoring immediate actions with little consideration for long-term consequences. Consumer researchers define impulsivity in terms of sudden and unplanned buying experiences undertaken to attain immediate gratification without financial forethought (Sengupta and Zhou, 2007; Thomas *et al,* 2011–2012). This immediacy orientation often causes conflict between the urge to consume versus the willpower to resist temptation (Zhang and Shrum, 2009). Credit cards magnify this conflict in that easy use of credit increases the ability and willingness to buy while pushing financial obligations off to a later date (Bernthal *et al,* 2005; Verplanken and Sato, 2011). Of interest, Palmer *et al* (2001) and Pirog and Roberts (2007) argue that credit card acquisition is itself an impulse buy. As a group, students often have low self-control and are more likely to focus on immediate benefits (Baumeister, 2002) and can readily use their credit card without an immediate depletion of funds (Soman, 2001). Research suggests impulsive students are more likely to maintain a credit card balance and to engage in risky financial behavior (Mansfield *et al,* 2003; Plunkett and Buehner, 2007).

Although impulsive buying and compulsive buying are internal consumer traits, clear social-psychological distinctions exist (Faber and O'Guinn, 2008). While both impulsive and compulsive buying behaviors are marked by an inability to control purchase desires (Chudry *et al,* 2011; Wang *et al,* 2011), compulsive buying represents a chronic loss of control, whereas impulse purchases occur through a situation-specific loss of self-control (Baumeister, 2002; Wang and Xiao, 2009). Impulse and compulsive buying differ in terms of triggering mechanisms. Impulsive buying is ignited via an external trigger (for example, marketing stimulus), whereas compulsive buying behavior is a result of stable internal traits (Desarbo and Edwards, 1996). Compulsive spending is thus an ongoing and enduring propensity to buy, whereas impulsive spending represents unreflective and spontaneous buying (Nga *et al,* 2011). We posit:

Hypothesis 2: Compulsive buying behavior is positively related to the (a) number of credit cards and (b) total credit card debt.

Hypothesis 3: Impulsive buying behavior is positively related to the (a) number of credit cards and (b) total credit card debt.

LOC

LOC refers to the propensity to view the world and the underlying cause of outcomes in terms of rewards and punishments (Rotter, 1966).

Consumers with an internal LOC orientation believe that they designate their fate and are in control of their behaviors, rewards and losses (Pinto *et al,* 2004). These individuals take active approaches to secure desired outcomes, accept more responsibility for their actions and use risk avoidance strategies (resist urge to buy) to cope with future losses. People with an external LOC attribute their actions and outcomes to outside forces beyond their control. They are thus more likely to feel the need to take charge of their lives through external controls and risk acceptance mechanisms (that is, purchase) in their environment (DeSarbo and Edwards, 1996).

Research suggests that external LOC consumers and internal LOC consumers hold discrepant views toward credit, money and purchase behaviors (Xiao *et al,* 2011; Caputo, 2012). For the most part, college students feel that credit cards are good when used appropriately (Warwick and Mansfield, 2000), and thus fall under their spending control. Compared with internals, externals are believed to have more positive attitudes toward money and credit, are less likely to manage credit cards and money responsibly, act compulsively, and have higher credit card debt (Tokunga, 1993; Wang *et al,* 2011; Caputo, 2012). Specific to college students, research evidence exists that externals are less risk adverse regarding debt purchases and carry higher balances than internals (Joo *et al,* 2003; Plunkett and Buehner, 2007). Researchers have begun to operationalize LOC credit card behaviors in terms of whether individuals pay off balances with other credit cards or other loans, hide their debt from others, purchase as a form of external self-expression, align with their spending habits to conform with others in their social group and whether they in fact even intend to pay what they owe debt obligation (Joo *et al,* 2003; Watson, 2009; Xiao *et al,* 2011). We propose that:

Hypothesis 4: A positive relationship exists between external LOC and (a) the number of credit cards and (b) total credit card debt.

Status consumption and materialism

Materialistic and status-seeking consumers tend to evaluate themselves and others according to their possessions, placing a premium on social status as a lifestyle facilitator (Bernthal *et al,* 2005). Recent research suggests that projecting a certain social status through material possessions and purchases is directly related to increased credit card usage (Park and Burns, 2005; Limbu *et al,* 2012). For students, credit cards are a means by which they develop and maintain social status (Roberts, 1998; Wang and Xiao, 2009; Nga *et al,* 2011). Students who place greater importance on materialistic purchases often do so to achieve social goals or status (Sidoti and Devasagayam, 2010), which in turn has been found to lead to greater credit card debt (Nga *et al,* 2011; Limbu *et al,* 2012). Along these same lines, Roberts and Jones (2001) found a direct relationship between power and prestige (see also Yamauchi and Templer, 1982) and excessive buying by college students.

Hypothesis 5: A status seeking and materialistic orientation is positively related to (a) the number of credit cards and (b) total credit card debt.

Financial anxiety

Termed financial anxiety, Shapiro and Burchell (2012) position it as a 'conscious and intuitive emotional anxiety toward one's personal finances' (p. 92), often leading to a mismanagement of money and debt. Financial anxiety emerged as an important construct from investigations of financial attitudes (Lim and Sng, 2006), and is based in part on subscales measuring general attitudes toward money, most notably Yamauchi and Templer's (1982) Money Attitude Scale and Furnham's (1984) Money Beliefs and Behavior Scale. Financial anxiety may be explained in part by the notion that excessive buying produces more anxiety (O'Guinn and Faber, 1989; Pinto *et al,* 2004), leading to a cycle of additional shopping as a means of alleviating stress and worry (DeSarbo and Edwards, 1996). This view is supported by recent research showing that compulsive consumers tend to have higher levels of stress consistent with financial anxiety (Ridgway *et al,* 2008; Joireman *et al,* 2010). In this regard, financial anxiety may be both an antecedent and consequence of debt. While financial anxiety as an antecedent for explaining credit card acquisition and debt has been largely untested, and few scales exist to measure this construct (Shapiro and Burchell, 2012), we propose the following:

Hypothesis 6: High anxiety is positively related to the number of credit cards and total credit card debt.

Method

Sample

A total of 205 students enrolled in six marketing classes and two psychology classes at a Midwestern University participated in the study.

Table 8.2 Respondent profile

Gender	Per cent
Male	52
Female	48
Class standing	
Freshman/sophomore	21.5
Junior	51.7
Senior	26.8
Number of credit cards	
One	17.6
Two	39.0
Three	20.0
Four	7.3
Five	16.1
Mean number = 2.65 cards	
Total credit card balance	
Pay balance each month	45.9
\$1–\$500	23.9
\$501–\$1000	7.3
\$1001–\$1500	7.8
>\$1500	15.1

Participating students were offered extra credit. To obtain a needed mix of students with varied class-standing status, these classes ranged from courses available to freshmen (Introduction to Psychology) to those required by juniors and seniors (Principles of Marketing). Table 8.2 provides the profile of respondents. As a note, 22.9 per cent had a credit card balance over \$1000, a benchmark for risky credit behavior (Xiao *et al*, 2011).

Measure development

We first conducted an extensive literature review to identify potential psycho-social dimensions to include in the questionnaire. We then conducted 40 student interviews and three focus groups that involved general discussions of their credit card behaviors. The unpublished findings from this qualitative assessment along with the literature review were used to develop our survey instrument. All questions were original (though adapted from the literature) and were measured on a 5-point Likert scale ranging from 1 = 'strongly disagree' to 5 = 'strongly agree'. The two dependent measures, total number of credit cards and balance carried, were self-reported. The questionnaire was then distributed to the 205 student volunteers.

- *Financial anxiety* (α=0.80): Seven-item measure adapted from Roberts and Jones (2001), Nga *et al,* (2011) and Pinto *et al,* (2000).
- *Impulsivity* (α=0.80): Five-item measure adapted from Rook and Fisher (1995), Pirog and Roberts (2007), Nga *et al,* (2011) and Wang and Xiao (2009).
- *Complusivity* (α=0.73): Four-item measure adapted from Faber and O'Guinn (1992) and Wang and Xiao (2009).
- *Parental involvement* (α=0.78): Five-item measure adapted from Palmer *et al* (2001) and Norvilitis and MacLean (2010).
- *Locus of control* (α=0.70): Five-item measure adapted from Rotter (1966), Roberts and Jones (2001), Pirog and Roberts (2007) and Nga *et al* (2011).
- *Social status and materialism* (α=0.70): Four-item measure adapted from Nga *et al* (2011).
- *Gender and class standing:* Used as control variables to ascertain whether the hypothesized relationships exist after gender and age are accounted for in our models (Joo *et al,* 2003; Lyons, 2004; Hayhoe *et al,* 2005).

Initially, we subjected the data to an exploratory principal components factor analysis to verify dimensionality and the resulting dimensions and items were subjected to an item-to-total correlation analysis and eliminated those with low item-to-total correlations. On the basis of previous research and our extensive item development process, we hypothesized six psycho-dimensions. As hypothesized, six factors emerged, all of which had coefficient α's above the acceptable level of 0.70 for exploratory research (Nunnally, 1978). In that, the average communality across all the dimensions was 0.535 and the factor loadings sufficiently high, a sample of 205 students is acceptable for determining dimensionality (for a review, see MacCallum *et al,* 1999) (Table 8.3).

Results

Using SPSS Version 20, we first correlated the number of credit cards with balance carried, noting a Pearson correlation coefficient of 0.358 (P<0.001), indicating that they are related but also capture different variation. Using multivariate regression, we used factor scores for each

Table 8.3 Factor loadings of survey items on six psychosocial factors and coefficient α's

	Anxiety	Impulsivity	Parent	LOC	Compulsivity	Status
Having a credit card makes me feel stressed	0.781	—	—	—	—	—
Having a credit card makes me feel anxious	0.692	—	—	—	—	—
I look back and regret making credit card purchases	0.687	—	—	—	—	—
I am worried about my credit card spending	0.595	—	—	—	—	—
Having a credit card makes me feel impulsive	0.512	—	—	—	—	—
I envy those who have no credit card debt	0.465	—	—	—	—	—
I use my credit card knowing I don't have the money	0.420	—	—	—	—	—
When using my credit card I buy more than one item	—	0.710	—	—	—	—
With my credit card I buy what I want when I want it	—	0.708	—	—	—	—
I am more likely to buy something if I can pay for it with a credit card	—	0.677	—	—	—	—
Having a credit card makes me feel like I have 'extra' money	—	0.570	—	—	—	—
I spend more money with credit cards than without them	—	0.480	—	—	—	—
My parents have access to my monthly credit card statement	—	—	0.765	—	—	—
My parents pay one or more of my credit card account(s) regularly	—	—	0.761	—	—	—

(*continued*)

Table 8.3 Continued

	Anxiety	**Impulsivity**	**Parent**	**LOC**	**Compulsivity**	**Status**
My parents are aware of what I buy with my credit card	—	—	0.742	—	—	—
My parents influence how I use my credit card	—	—	0.682	—	—	—
My parents gave my first credit card to me	—	—	0.633	—	—	—
I pay credit card balance(s) off with another credit card(s)	—	—	—	0.772	—	—
I have needed a bank loan to pay an overdue credit card balance	—	—	—	0.742	—	—
I use my credit card to keep up with my friend's spending habits	—	—	—	0.584	—	—
I make an effort to hide my credit card debt from people	—	—	—	0.554	—	—
My credit card allows me to maintain the kind of image I want to express	—	—	—	0.483	—	—
I can't go shopping without my credit card	—	—	—	—	0.812	—
When I leave the house I make sure to bring my credit card	—	—	—	—	0.692	—
I do not feel comfortable without a credit card in my possession	—	—	—	—	0.611	—
Having a credit card makes me feel secure	—	—	—	—	0.567	—
What I see on television influences my credit card use	—	—	—	—	—	0.803
I use my credit card to impress people	—	—	—	—	—	0.795
I envy those who have larger credit card spending limits than I do	—	—	—	—	—	0.581
Credit cards are symbols of wealth and prosperity	—	—	—	—	—	0.431
Coefficient α	0.80	0.73	0.78	0.70	0.73	0.70

of the six psycho-social dimensions as independent variables; gender and class standing were used as control variables. The two tested models were:

$$\begin{aligned}\text{Number of credit cards}\\ = \mathrm{B0} + \beta 1_1{}^{*}(\text{Parental involvement})\\ + \beta 2_1{}^{*}(\text{Compulsivity}) + \beta 3_1{}^{*}(\text{Impulsivity})\\ + \beta 4_2{}^{*} + (\text{LOC}) + \beta 5_1{}^{*}(\text{Social status})\\ + \beta 6_1{}^{*}(\text{Financial anxiety})\end{aligned} \quad (1)$$

$$\begin{aligned}\text{Total debt} = \mathrm{B0} - \beta 1_2{}^{*}(\text{Parental involvement})\\ + \beta 2_2{}^{*}(\text{Compulsivity})\\ + \beta 3_2{}^{*}(\text{Impulsivity}) + \beta 4_2{}^{*}(\text{LOC})\\ + \beta 5_2{}^{*}(\text{Social status})\\ + \beta 6_2{}^{*}\ (\text{Financial anxiety})\end{aligned} \quad (2)$$

As Table 8.4 shows, both the regression explaining number of credit cards ($R^2 = 0.211$, $F = 6.36$, $P = 0.000$) and the regression explaining total credit card debt ($\underline{R}^2 = 0.290$, $F = 9.68$, $P = 0.000$) were highly significant. The multivariate tests show that all the psycho-social dimensions, with the exception of parental involvement ($P < 0.10$), significantly contributed to the joint explanation of the dependent variables. However, when we look at the separate regression, except for mental impulsivity and social status, which were significant in both models, each of the remaining variables was significant in only one of the two models, thus supporting our contention that different psycho-social processes influence total debt and the number of cards. Table 8.5 presents a summary of results for each of the hypotheses.

In the number of credit cards model, four of the psycho-social dimensions were significant predictors, as were gender and year in school. All the significant relationships were in the hypothesized direction. In terms of the relative impact of the psycho-social dimensions on the number of credit cards, compulsivity had the strongest influence ($\beta = 0.321$, $P < 0.001$), followed by impulsivity ($\beta = 0.189$, $P < 0.05$) and social status ($\beta = 183$, $P < 0.05$). Parental involvement, anxiety and LOC were not significant predictors of the number of credit cards held by students. For the control variables, women had more credit cards ($\beta = 0.506$, $P < 0.01$), as did respondents with more years in school ($\beta = 0.273$, $P < 0.01$).

Five of the six psycho-social dimensions were significant predictors of the total credit card balances maintained by students. In this model, gender was not a significant predictor of students' outstanding credit card balances. Anxiety ($\beta = 0.437$, $P < 0.001$) and LOC ($\beta = 0.376$,

Table 8.4 Multivariate regression results: Number of credit cards and total credit card debt

Variables	Multivariate	Number of credit cards			Total credit card debt		
	Test Wilk's λ	Standard β	t-value	Significance	Standard β	t-value	Significance
Intercept	0.824 ($P=0.000$)	1.612	5.29	0.000	1.57	4.73	0.000
Parental involvement (Hypothesis 1)	0.975 ($P=0.10$)	–0.092	–1.08	NS	**–0.193**	–2.11	0.036
LOC (Hypothesis 2)	0.912 ($P=0.000$)	0.059	0.697	NS	**0.37**	4.15	0.000
Compulsivity (Hypothesis 3)	0.924 ($P=0.001$)	**0.321**	3.78	0.000	0.021	0.234	NS
Impulsivity (Hypothesis 4)	0.946 ($P=0.004$)	**0.189**	2.24	0.026	**0.278**	3.06	0.003
Social status (Hypothesis 5)	0.932 ($P=0.002$)	**0.183**	2.16	0.032	**0.317**	3.47	0.001
Financial anxiety (Hypothesis 6)	0.903 ($P=0.000$)	0.063	0.735	NS	**0.437**	4.76	0.000
Gender (0=M, 1=F)	0.957 ($P=0.016$)	0.506	2.90	0.004	0.181	0.966	NS
Years in school	0.935 ($P=0.007$)	0.273	2.99	0.003	**0.194**	1.98	0.049

Number of credit cards ($F = 6.36$, $P=0.000$, $R^2=0.211$).
Total credit card debt ($F=9.68$, $P=0.000$, Adjusted $R^2=0.290$).

Table 8.5 Review of hypotheses: Number of credit cards and total credit card debt

	Dependent variable: Number of credit cards		**Dependent variable: Total credit card debt**	
	Hypothesized direction	**Hypothesis supported?**	**Hypothesized direction**	**Hypothesis supported?**
Parental involvement (Hypothesis 1)	+	No	−	Yes
LOC (Hypothesis 2)	+	No	+	Yes
Compulsivity (Hypothesis 3)	+	Yes	+	No
Impulsivity (Hypothesis 4)	+	Yes	+	Yes
Social status (Hypothesis 5)	+	Yes	+	Yes
Anxiety (Hypothesis 6)	+	No	+	Yes

$P<0.001$), neither of which was significant in the total number of credit cards model, were the two strongest predictors of credit card balance. Social status ($\beta=0.317$, $P<0.001$) was the third strongest predictor, followed by impulsivity ($\beta=0.278$, $P<0.01$) and parental involvement ($\beta=-0.193$, $P<0.05$). All but compulsivity variables were in the hypothesized direction.

Discussion and conclusion

Answering the calls for comprehensive models of credit card usage (Norvilitis *et al,* 2006; Pirog and Roberts, 2007; Xiao *et al,* 2011; Chan *et al,* 2012), our results provide preliminary support for such a model. The findings support the psycho-social framework that models predicting the number of credit cards students own and their subsequent level of debt are multidimensional and complex. Specifically, our six psycho-social variables and two control variables accounted for 21.1 per cent of the variation on the number of credit cards acquired and 29 per cent of the variation in total debt accrued. Individually, our results are consistent with past credit card research that compulsivity, impulsivity, financial anxiety, social status and external LOC lead to more credit usage and parental involvement leads to lower balances. Collectively, we extend the research by showing that these variables differentially influence the overall number of credit cards owned and credit card debt accumulation. However, because our sample was relatively small, from only two different courses (though six total sections) and one university, research is needed to determine whether our psycho-social dimensions and results are generalizable in other contexts.

In particular, our findings show that positive parental involvement is associated with lower overall debt *balance*. Parental involvement throughout the socialization process and beyond proves to be an integral component in creating mindful debt practices for young adults (Dotson and Hyatt, 2005). It is not always possible for parents to prevent financial mistakes; however, stricter access to financial instruments for students as well as forms disclosing or highlighting the implications of their decision could prove useful in credit card accumulation.

Through the active control of behaviors (Pinto *et al,* 2004) and the delay losses perspective with an external orientation (Plunkett and Buehner, 2007), we find that LOC is the second most powerful predictor of students' credit card *balances*. In part, the practice of shifting debt from one credit account contributed to higher debt balances. In general, LOC has not been widely studied in this context. Previous research using an either/or approach to LOC has limited research capabilities. By merging psycho-social characteristics that may not be unique to a single group and/or that are more collectively effective, our research contributes to the existing literature base by testing a more comprehensive LOC construct and is consistent with recent findings by Xiao *et al* (2011). Although the CARD Act has not impacted how many cards college students have, public policy in the form of stricter qualification rules as they relate to the number of cards younger people have and/or how balances are transferred should be considered.

Our findings for compulsive and impulse behavior tendencies support the notion that though these factors share some similar characteristics, each influences credit card usage and debt differently. Compulsivity is a long-term and ongoing trait, whereas impulsivity is context-specific (Solomon, 2007). Notably, both compulsivity and impulsivity are significant predictors of the total number of credit cards a person owns. However, impulsivity is a significant predictor of credit card *balances*, whereas compulsivity is not. A possible explanation is that students are relatively inexperienced credit card users and lack the compulsive characteristics associated with long-term credit use. Similarly, inexperience with credit overall may be driving this opposite effect with impulsive buying behaviors because students quickly learn that credit cards allow on-demand purchases. This finding points to an important research avenue warranting further attention.

As anticipated, social status proved to be a significant predictor of the number of credit cards and credit card balance in both models. As college life entails many social encounters, and consumption facilitates social status for college students and consumers in general, this finding supports prior research (Roberts, 1998). On the one hand, aspirational behavior is prompted by the multitude of mass media and advertising expounding the social- and status-enriching benefits credit cards offer. With continuous social demands placed on college students despite social class, additional research is necessary to understand the role of social pressure in student debt accrual. Our results thus lend support to Limbu *et al* (2012) showing that status and materialism lead to increased credit card debt (though not number acquired).

Although not a significant predictor of the *number* of credit cards owned, anxiety is the most influential factor on credit card *balances* maintained. Psychological stress related to credit card debt can have potentially devastating effects on college students (Roberts and Tanner, 2000), particularly when embarking on a new life phase. Our findings show that financial anxiety is associated with greater debt but not the number of credit cards acquired. Developing educational materials and implementable management tools for inexperienced users to moderate debt is a first step in mitigating the debt crisis faced by many entering the workforce. Of interest, a question remains whether financial anxiety leads to a cycle of shopping as a means of alleviate ensuing stress and worry and thus whether it is an antecedent or consequence of credit card debt, or both. As financial anxiety was used as a predictor of credit card acquisition and debt in our models, future research should investigate the sequential ordering of these relationships through structural equation modeling and/or simultaneous equations.

Overall, our findings suggest that young adults in our sample who give in to impulsive behavior have greater financial debt. Combined with financial stress, lack of parental involvement and easy access to credit cards, the psycho-social factors that make up the young student personality can have devastating effects in terms of their financial well-being. As a consequence, collaborative efforts by government, business and society are needed to curtail irresponsible spending. However, governmental or business financial education programs, while efficient in providing the scope for responsible spending, may not be as effective in terms of the implementation of a responsible financial record. Future research should look into the most effective ways of transfer of social behavior in terms of financial awareness.

Finally, although our proposed framework in its current form proves reliable and valid for exploratory purposes, additional research is required to study non-linear, interactive and other more complex models. Moreover, our model only investigated six psycho-social variables, additional psychological, sociological and economic factors influencing credit card usage and total debt should be explored. Subsequent research might endeavor to conceptualize and test these pathways, which would prove beneficial for predicting credit card usage and crisis debt within a college context. Our models should be evaluated across the consumer age lifecycle to determine whether the importance of these psychosocial constructs evolve over time.

References

Amar, M., Ariely, D., Ayal, S., Cryder, C.E. and Rick, S.I. (2011) Winning the battle but losing the war: The psychology of debt management. *Journal of Marketing Research* 48(Special Issue): S38–S50.

Baumeister, R.F. (2002) Yielding to temptation: Self-control failure, impulsive purchasing, and consumer behavior. *The Journal of Consumer Research* 28(4): 670–676.

Bearden, W. and Haws, K.L. (2012) How low spending control harms consumers. *Journal of the Academy of Marketing Science* 40: 181–193.

Berg, C., Sanem, J., Lust, K., Ahluwalia, J., Kirch, M. and An, L. (2010) Health-related characteristics and incurring credit card debt as problem behaviors among college students. *The Internet Journal of Mental Health* 6(2): 1.

Bernthal, M., Crockett, D. and Rose, R.L. (2005) Credit cards as lifestyle facilitators. *Journal of Consumer Research* 32(1): 130–145.

Caputo, R.K. (2012) Patterns and predictors of debt: A panel study, 1985–2008. *Journal of Sociology & Social Welfare* 34(2): 7–29.

Carlson, L. and Grossbart, S. (1988) Parental style and consumer socialization of children. *Journal of Consumer Research* 15 (June): 77–94.

Chan, F.S., Chau, A.W. and Chan, K.Y. (2012) Financial knowledge and aptitudes: Impacts on college students' financial well-being. *College Student Journal* 46(1): 114–132.

Chudry, F., Foxall, G. and Pallister, J. (2011) Exploring attitudes and predicting intentions: Profiling student debtors using an extended theory of planned behavior. *Journal of Applied Social Psychology* 41(1): 119–149.

DeSarbo, W.S. and Edwards, E. (1996) Typologies of compulsive buying behavior: A constrained clusterwise regression approach. *Journal of Consumer Psychology* 5(3): 231–262.

Dotson, M.J. and Hyatt, E.M. (2005) Major influence factors in children's consumer socialization. *Journal of Consumer Marketing* 22(1): 35–42.

Dwyer, R.E., McCloud, L. and Hodson, R. (2011) Youth debt, mastery, and self-esteem: Class-stratified effects of indebtedness on self-concept. *Social Science Research* 40: 727–741.

Faber, R. and O'Guinn, T. (1992) A clinical screener for compulsive buying. *Journal of Consumer Research* 19 (December): 459–469.

Faber, R. and O'Guinn, T. (2008) Compulsive buying: Review and reflection. In: C.P. Haugtvedt, P.M. Herr and F. R. Kardes (eds.) *Handbook of Consumer Psychology*. New York, NY: Psychology Press, pp. 1039–1056.

Furnham, A. (1984) Many sides to the coin: The psychology of money usage. *Personality and Individual Differences* 5(5): 501–509.

Goetz, J., Cude, B.J., Nielsen, R.B., Chatterjee, S. and Mimura, Y. (2011) College-based personal finance education: Student interest in three delivery methods. *Journal of Financial Counseling and Planning* 22(1): 127–142.

Harrison, T. (2012) Editorial. *Journal of Financial Services Marketing* 17(2): 117–119.

Hawkins, J. (2012) The CARD Act on campus. *Washington and Lee Law Review* 69(3): 1471–1534.

Hayhoe, C.R., Leach, L., Allen, M.W. and Edwards, R. (2005) Credit cards held by college students. *Financial Counseling and Planning* 16(1): 1–10.

John, D.R. (1999) Consumer socialization of children: A retrospective look at twenty-five years of research. *Journal of Consumer Research* 29(December): 183–213.

Joireman, J., Kees, J. and Sprott, D. (2010) Concern with immediate consequences magnifies the impact of compulsive buying tendencies on college students' credit card debt. *Journal of Consumer Affairs* 44(1): 155–178.

Joo, S.H., Grable, J.E. and Bagwell, D.C. (2003) Credit card attitudes and behaviors of college students. *College Student Journal* 37(3): 405–419.

Lai, C. (2010) How financial attitudes and practices influence the impulsive buying behavior of college and university students. *Social Behavior and Personality* 38(3): 373–380.

Lim, V.K.G. and Sng, Q.S. (2006) Does parental job insecurity matter? Money anxiety, money motives, and work motivation. *Journal of Applied Psychology* 91(5): 1078–1087.

Limbu, Y.B., Huhmann, B.A. and Xu, B. (2012) Are college students at greater risk of credit card abuse? Age, gender, materialism and parental influence on consumer response to credit cards. *Journal of Financial Services Marketing* 17(2): 148–162.

Lo, H.-Y. and 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(1): 79–92.

Lyons, A.C. (2004) A profile of financially at-risk college students. *Journal of Consumer Affairs* 38(1): 56–80.

MacCallum, R.C., Widaman, K.F., Zhang, S. and Hong, S. (1999) Sample size in factor analysis. *Psychological Methods* 4 (1): 84–99.

Manning, R.D. (2000) *Credit Card Nation*. New York: Basic Books.

Mansfield, P.M., Pinto, M.B. and Parente, D.H. (2003) Self-control and credit card use among college students. *Psychological Reports* 92(2): 1067–1078.

Nga, J.K.H., Yong, L.H.L. and Sellappan, R. (2011) The influence of image consciousness, materialism and compulsive spending on credit card usage intentions among youth. *Young Consumers* 12(3): 243–253.

Norum, P.S. (2008) The role of time preference and credit card usage in compulsive buying behavior. *International Journal of Consumer Studies* 32(3): 269–275.

Norvilitis, J.M. and MacLean, M. G. (2010) The role of parents in college students' financial behaviors and attitudes. *Journal of Economic Psychology* 31(1): 55–63.

Norvilitis, J.M., Szablicki, B.P. and Wilson, S.D. (2003) Factors influencing levels of credit-card debt in college students. *Journal of Applied Social Psychology* 33(5): 935–947.

Norvilitis, J.M., Merwin, M.M., Osberg, T.M., Roehling, P.V., Young, P. and Kamas, M.M. (2006) Personality factors, money attitudes, financial knowledge, and credit-card debt in college students. *Journal of Applied Social Psychology* 36(6): 1395–1413.

Nunnally, J.C. (1978) *Psychometric Theory*. New York: McGraw-Hill.

O'Guinn, T.C. and Faber, R.J. (1989) Compulsive buying: A phenomenological exploration. *Journal of Consumer Research* 16(September): 147–157.

Palan, K.M., Morrow, P.C., Trapp, A. and Blackburn, V. (2011) Compulsive buying behavior in college students: The mediating role of credit card misuse. *Journal of Marketing Theory and Practice* 19(1): 81–96.

Palmer, T.S., Pinto, M.B. and Parente, D.H. (2001) College students' credit card debt and the role of parental involvement: Implications for public policy. *Journal of Public Policy & Marketing* 20(1): 105–113.

Park, H.J. and Burns, L.D. (2005) Fashion orientation, credit card use and compulsive buying. *Journal of Consumer Marketing* 22(3): 135–141.

Pinto, M.B. and Mansfield, P.M. (2006) Direct mail credit card solicitation of college students: An exploratory study. *Services Marketing Quarterly* 27(4): 27–34.

Pinto, M.B., Mansfield, P.M. and Parente, D.H. (2004) Relationship of credit attitude and debt to self-esteem and locus of control in college age students. *Psychological Reports* 94(3): 1405–1418.

Pinto, M.B., Parente, D.H. and Palmer, T.S. (2000) Materialism and credit card use by college students. *Psychological Reports* 86(April): 643–652.

Pirog III, S.F. and Roberts, J.A. (2007) Personality and credit card misuse among college students: The mediating role of impulsiveness. *Journal of Marketing Theory and Practice* 15(1): 65–77.

Plunkett, H.R. and Buehner, M.J. (2007) The relation of general and specific locus of control to intertemporal monetary choice. *Personality and Individual Differences* 42(7): 1233–1242.

Ridgway, N.M., Kukar-Kinney, M. and Monroe, K.B. (2008) An expanded conceptualization and a new measure of compulsive buying. *Journal of Consumer Research* 35(4): 622–639.

Robb, C.A. and Pinto, M.B. (2010) College students and credit card use: An analysis of financially at-risk students. *College Student Journal* 44(4): 823–835.

Roberts, J.A. (1998) Compulsive buying among college students: An investigation of its antecedents, consequences, and implications for public policy. *Journal of Consumer Affairs* 32(2): 295–319.

Roberts, J.A. and Jones, E. (2001) Money attitudes, credit-card use, and compulsive buying among American college students. *Journal of Consumer Affairs* 35(2): 213–240.

Roberts, J.A. and Tanner, J.F. (2000) Compulsive buying and risky behavior in young adults. *Psychological Reports* 86(3): 763–770.

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

Rotter, J.B. (1966) Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs* 80(1): 1–28.

Mae, S. (2009) How undergraduate students use credit cards: Sallie Mae's national study of usage rates and trends, http://static.mgnetwork.com/rtd/pdfs/20090830_iris.pdf, accessed June 2012.

Sengupta, J. and Zhou, R. (2007) Understanding impulsives choice behaviors: The motivational influences of regulatory focus. *Journal of Marketing Research* 44(2): 297–308.

Shapiro, G.K. and Burchell, B.J. (2012) Measuring financial anxiety. *Journal of Neuroscience, Psychology, and Economics* 5(2): 92–103.

Sidoti, P.M. and Devasagayam, R. (2010) Credit cards and college students: Effect of materialism and risk attitude on misuse. *Marketing Management Journal* 20(2): 64–79.

Silver-Greenber, J. and Elgin, B. (2008) The College Credit-Card Hustle, *Business Week*. New York: Bloomberg.

Slowik, J. (2012) Credit CARD Act II: Expanding credit card reform by targeting behavioral biases. *UCLA Law Review* 59: 1292–1342.

Solomon, M.R. (2007) Motivation and values. In: *Consumer Behavior. Buying, Having, and Being*. Upper Saddle River, NJ: Pearson Prentice Hall, pp. 152–191.

Soman, D. (2001) Effects of payment mechanism on spending behavior: The role of rehearsal and immediacy of payments. *Journal of Consumer Research* 27(March): 460–174.

Thomas, V., Fowler, K. and Kolbe, R.H. (2011–2012) The implications of the FTC's clear and conspicuous standards for the communication of credit card information to young consumers. *Journal of Financial Services Marketing* 16(3/4): 195–209.

Tokunga, H. (1993) The use and abuse of consumer credit: Applications of psychological theory and research. *Journal of Economic Psychology* 14(June): 285–316.

Verplanken, B. and Sato, A. (2011) The psychology of impulse buying: An integrative self-regulation approach. *Journal of Consumer Policy* 34(2): 197–210.

Wall Street Journal (2013) Trans Union: Credit Card Delinquencies and Debt Open 2013 with Decline, http://online.wsj.com/article/PR-CO-20130521-903783.html, accessed May 2013.

Wang, A. (2012) Socialization and processing effects on comprehension of credit card advertisement disclosures. *Journal of Financial Services Marketing* 17(2): 163–176.

Wang, J. and Xiao, J.J. (2009) Buying behavior, social support and credit card indebtedness of college students. *International Journal of Consumer Studies* 33(1): 2–10.

Wang, L., Wei, L. and Jiang, L. (2011) The impact of attitude variables on credit debt behavior. *Nankai Business Review International* 2(2): 120–139.

Ward, S. (1974) Consumer socialization. *Journal of Consumer Research* 1(September): 1–14.

Warwick, J. and Mansfield, P. (2000) Credit card consumers: College students' knowledge and attitude. *Journal of Consumer Marketing* 17(7): 617–626.

Watson, S. (2009) Credit card misuse, money attitudes, and compulsive buying behaviors: A comparison of internal and external locus of control (LOC) consumers. *College Student Journal* 43(2): 268–275.

Xiao, J.J., Tang, C., Serido, J. and Shim, S. (2011) Antecedents and consequences of risky credit behavior among college students: Application and extension

of the theory of planned behavior. *Journal of Public Policy & Marketing* 30(2): 239–245.
Yamauchi, K. and Templer, D. (1982) The development of a money attitudes scale. *Journal of Personality Assessment* 46(5): 522–528.
Yu, H. (2011) Parental communication style's impact on children's attitudes toward obesity and food advertising. *Journal of Consumer Affairs* 45(1): 87–107.
Zhang, Y. and Shrum, L.J. (2009) The influence of self-construal on impulsive consumption. *Journal of Consumer Research* 35(February): 838–850.