

# Mindfulness, Money Attitudes and Credit

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## Abstract

Consumer credit is a central feature of modern living, having been an important topic of research for some time. In contrast, mindfulness has only recently gained research prominence. Our study develops a model that links individuals' mindfulness with their credit intentions/use, and that further proposes money attitudes as a mediator variable. Broad support for the model is provided by a sample of students from a Portuguese University and a second sample comprised of adult US residents. The results suggest that mindfulness might play a significant role in shaping consumers' money attitudes and credit intentions/use. Additionally, the study suggests that the relationships of mindfulness and money attitudes with credit are only significant when credit is directed toward the purchase of non-basic products. These results yield a number of considerations for future research and for institutions promoting financial education, which could lead to improved debt management and greater financial well-being.

**Keywords:** Mindfulness; money attitudes; consumer credit.

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In recent years, empirical investigation into the implications of mindfulness has gained increasing attention (Chiesa 2013). Mindfulness refers to a purposeful focus of attention on the present moment, comprising the adoption of an orientation characterized by curiosity, openness and acceptance (Kabat-Zinn 2003; Bishop et al. 2004; Chiesa 2013). Empirical evidence shows that mindfulness, considered either as a state or as a trait, has numerous benefits (e.g., Brown, Ryan, and Creswell 2007). Despite the sizeable amount of research on mindfulness, it has rarely been associated with financial consumer behavior. An exception to this is Rosenberg (2004), who argues that mindfulness constitutes an antidote for consumerism. Relatedly, Brown et al. (2009) state that mindfulness promotes contentment with what one has.

Bearing these considerations in mind, our paper contributes to existing knowledge by relating mindfulness to consumers' financial attitudes and behaviors. Specifically, the current study aims to investigate the relationship of mindfulness with credit intentions, which are a precursor to actual behavior according to the Theory of Planned Behavior (Ajzen 1985), and with credit use. The pervasiveness of credit in modern societies has sparked a quest to try to understand why individuals go into debt (e.g., Chien and Devaney 2001; Davies and Lea 1995; Livingstone and Lunt 1992; Sotiropoulos and D'Astous 2012). We aim to shed light on this issue by investigating whether mindfulness is related with the complex consumer mindset regarding credit.

Our research model considers mindfulness to have both a direct and an indirect relationship with credit, specifically through money attitudes. Hence, both the relationships we establish between mindfulness and money attitudes, and between mindfulness and credit intentions/use, are novel. In addition, the relationship between money attitudes and credit has been insufficiently investigated, with Tokunaga (1993) and Hayhoe, Leach, and Turner (1999) being two of the few exceptions. The role that psychological variables have on money attitudes (e.g.,

Lim 2003; Shafer 2000) and on saving and borrowing behavior (e.g., Nyhus and Webley 2001) suggests that mindfulness, also a psychological variable, should be accounted for when explaining consumer credit attitudes and behaviors. In this context, we note that understanding the relationships between mindfulness, money attitudes and credit might be important for consumers' financial well-being, as well as for financial planners and educators alike. Hence, research on the relationship between mindfulness and financial matters will likely yield a significant contribution to existing knowledge.

## **RESEARCH BACKGROUND**

Research on credit use and abuse is quite vast (e.g., Chien and Devaney 2001; Davies and Lea 1995; Hayhoe, Leach, and Turner 1999; Lea, Webley, and Levine 1993; Livingstone and Lunt 1992; Sotiropoulos and d'Astous 2012; Xiao et al. 2011). Many studies have focused on socio-demographically characterizing heavy credit card users and/or those who have unsustainable levels of debt (e.g., Davies and Lea 1995; Livingstone and Lunt 1992). However, as documented by Livingstone and Lunt (1992), socio-demographic factors play a minor role in differentiating between individuals with and without debt. Thus, other social and psychological antecedents have been explored, such as parental socialization (e.g., Xiao et al. 2011), financial literacy (e.g., Norvilitis et al. 2006; Xiao et al. 2011; Xiao et al. 2014), locus of control (Livingstone and Lunt 1992; Tokunaga 1993), materialism (Watson 2003), and consideration for future consequences (Joireman, Kees, and Sprott 2010), amongst many others. The array of tested antecedents also includes personality. For instance, Harrison and Chudry (2011) have found that extraversion is positively related to the use of overdrafts and borrowing from family, and Nyhus and Webley (2001) documented that neuroticism predicts more debt.

## **Mindfulness**

Although there is no singular, universally-accepted definition of mindfulness, a common denominator across definitions is that mindfulness is a state of conscious awareness about what is occurring in one's present moment (Brown and Ryan 2003). This means that a component of mindfulness is attention. Some researchers identify two attentional elements, namely, attention to present-moment events and experiences, and attention to internal and external stimuli (e.g., Hyland, Lee, and Mills 2015). Another component found in many definitions is an attitudinal one, characterized by a present-moment awareness that is "nonjudgmental", which Bishop et al. (2004) describe as the adoption of a stance characterized by curiosity, experiential openness and acceptance.

Shapiro et al. (2006) posit that mindfulness leads to a shift in perspective, termed "reperceiving," which generates positive outcomes through the following pathways: self-regulation (maintaining stability of functioning and adaptability to change); values clarification (recognizing what is meaningful); cognitive, emotional and behavioral flexibility (adaptive response to the environment in non-conditioned, automatic ways); and exposure (exposure to negative emotional states heightens the acceptance of such emotions, without fear or avoidance behaviors).

Mindfulness has been shown to have a variety of salutary effects, such as an increase in mental and physical health (e.g., Kabat-Zinn, Lipworth, and Burney 1985), improved subjective well-being (e.g., Brown et al. 2009; Howell, Digdon, and Buro 2010), and enhanced performance and cognitive ability (e.g., Ostafin and Kassman 2012). Although, to the best of our knowledge, there is no research providing evidence of a relationship between mindfulness and consumers' financial attitudes and behaviors, there are a couple of studies suggesting the potential of such an avenue of research. Rosenberg (2004, 121) notes that "no work to date has explored the

relationship between mindfulness and consumer attitudes or behavior,” and launches the idea that mindfulness can serve as an antidote to consumerism by raising awareness of both the manipulative role of advertising on consumer behavior and the fulfillment role of consumption in our lives. Brown et al. (2009) develop a similar argument, finding that mindfulness helps reduce the financial desire gap, i.e., the difference between what one wants and what one has. Additionally, they found that the reduction in this gap partly explains the relationship between increases in mindfulness and increases in subjective well-being. Stone (2011) also delves into these issues, suggesting that higher levels of mindfulness lead to better management of one’s financial resources, namely by helping to strike a balance between reflexive (passionate, impulsive and automatic) and reflective (thoughtful and deliberate) processing of money matters, thereby affecting an individual’s money attitudes and behaviors. A potential relationship between mindfulness and money attitudes can further be inferred from Brown and Kasser (2005), who found that mindfulness is positively related to intrinsic values, which suggests that more mindful individuals place greater value on personal development, relationships and community involvement, rather than on financial success, image and popularity.

### **Money Attitudes**

Money attitudes concern an individual’s enduring organization of cognitions, feelings and behavioral predispositions toward money (cf. Hogg and Vaughan 2005). Previous research has established that money attitudes are a multidimensional concept. Several researchers have advanced varying conceptualizations to capture these dimensions, namely Yamauchi and Templer (1982), Furnham (1984) and Tang (1992). The Money Attitudes Scale (MAS) by Yamauchi and Templer (1982) has probably gained the most recognition, due to its parsimony,

diversity of countries, and ethnicities to which it was applied and its psychometric properties (Roberts and Jones 2001; Medina, Saegert, and Gresham 1996). Yamauchi's and Templer's (1982) MAS considers four attitudinal dimensions concerning money: *Power-prestige*, which represents a concern for money as an instrument to gain power over others and as a symbol of status and success; *Retention-time*, which corresponds to a predisposition to plan and refrain from spending in order to be prepared for the future; *Distrust*, which describes attitudes of hesitation, suspicion and doubt in situations involving money; and *Anxiety*, which refers to a perception of money as a cause of worry and anxiety and as a tool to protect oneself from experiencing those feelings.

Money attitudes have been used to explain a variety of individuals' behaviors. For instance, it has been found that money attitudes relate with the willingness to acquire financial products (e.g., Keller, 2006), with the severity of problem gambling (Blaszczynski and Nower 2010), with the risk of experiencing adverse financial events (Von Stumm, O'Creevy, and Furnham 2013), with materialism (Durvasula and Lysonski 2010), and with compulsive buying (Roberts and Sepulveda 1999; Roberts and Jones 2001). Particularly germane to our study is the research that explores the relationship between money attitudes and credit behavior (Hayhoe, Leach, and Turner 1999; Moore and Carpenter 2009; Tokunaga 1993), which is scarce. Tokunaga (1993) found that individuals who use credit cards more frequently perceive money as a source of power/prestige and anxiety, and tend to financially prepare less for the future. Likewise, Hayhoe, Leach, and Turner (1999) found that students with four or more credit cards are less future-oriented. Furthermore, Moore and Carpenter (2009) found that students with high scores in the power-prestige and anxiety dimensions are more likely to engage in poor credit behavior, while those with high scores in distrust are more prone to exhibit positive (responsible) and less prone to exhibit negative (poor) credit behavior.

Moreover, past research has also looked at the antecedents of money attitudes, which appear to be quite varied, including socio-demographics (e.g., Furnham 1984; Tang 1992), materialism (e.g., Christopher, Marek, and Carroll 2004; Shafer 2000), personality traits (Shafer 2000), locus of control (Lim, Teo, and Loo 2003), work ethic and face concern (Lim 2003), childhood family life experiences (Duh 2016), and emotional intelligence (Engelberg and Sjöberg 2006).

## **RESEARCH HYPOTHESES**

Given the above evidence, our research model predicts that mindfulness should relate to credit through money attitudes. Mindfulness may be considered a state as well as a trait (Brown, Ryan, and Creswell 2007). For instance, Brown and Ryan (2003) recognize that mindfulness can vary within a person (depending on an array of factors), as well as across people. This study takes the perspective of trait or dispositional mindfulness, which is the tendency to be mindful in general daily life, thus considering that inter-personal variations in mindfulness drive money attitudes and credit behavior. We expect the beneficial effects of mindfulness to be transmitted to money attitudes and to credit behavior, as depicted in Figure 1.

**[please insert Figure 1 about here]**

### **Mindfulness, Money Attitudes and Credit Intentions/Use**

*Mindfulness and credit.* The rationale linking mindfulness to credit rests predominantly on the general mechanisms through which mindfulness works, such as self-regulation and values clarification (Shapiro et al. 2006). Values clarification is likely to mitigate consumer spending, as individuals who are good at recognizing what is truly meaningful to them are more likely to

adopt behaviors that are less responsive to cultural conditioning (Shapiro et al. 2006). Consumption is a hallmark of modern societies. In this context, values clarification should reduce individuals' propensity to consume and finance it with credit. Relatedly, the self-acceptance quality (accepting attitudes toward oneself) of mindful individuals is also central to understanding their spending moderation (Shapiro et al. 2006). According to Brown et al. (2009), one facet of this self-acceptance is a perception of having enough material possessions, which should reduce the predisposition for consumption spending. In addition to mitigating borrowing desires originated by self-control with spending, mindfulness is also liable to reduce individuals' credit propensity by promoting a deeper understanding of the consequences of getting into debt, given the enhanced cognitive flexibility attributed to mindful individuals (Shapiro et al. 2006). Rosenberg (2004) argues that more mindful individuals decide more carefully on what and when to buy: "With more mindfulness might come more attention to the negative effects of consumerism, and we might choose not to buy certain products at all, to buy less generally, or to recycle and reuse more" (Rosenberg 2004, 117). In support of these arguments, Brown and Kasser (2005) show that mindfulness is positively related to intrinsic values (e.g., relationships and personal development), and negatively related to extrinsic ones, including popularity and wealth. Hence, mindful individuals are more likely to reveal healthier credit attitudes and behaviors, since less consumerism goes hand in hand with less consumer credit. We thus propose the following:

*H1: Mindfulness is negatively related to credit intentions/use.*

*Mindfulness and power-prestige.* Mindfulness helps individuals move away from familial, cultural and societal conditioning, and to more objectively reflect on values (Shapiro et al. 2006). Hence, individuals who are mindful are better able to recognize what is meaningful for them (Shapiro et al. 2006), which should enable them to distance themselves from the symbolic



meaning and idolization of money observed in modern societies (Belk and Wallendorf 1990), as well as from the consumer culture promoted by media, advertising and other sources (Brown et al. 2009). Brown et al. (2009, 728) argue that the attention to present experiences and events “may encourage a savoring of experience, and thereby reduce desires for external pleasures that depend on money and material goods.” Hence, mindful individuals should become less reactive to external stimuli that involve money and material things (Brown and Kasser 2005; Brown et al. 2009; Rosenberg 2004). Additionally, mindfulness entails self-acceptance, which reduces concern for gaining the approval of others and mitigates the comparison of one’s self-worth to that of others (Carson and Langer 2006). Carson and Langer further note that mindful individuals are authentic, in the sense that they do not devote attentional resources towards impressing others, and this should include the possession of material goods. Relatedly, mindfulness appears to promote behavior that is more volitional than the subject of external pressures (Brown and Ryan 2003). Thus, we offer the following:

*H2: Mindfulness is negatively related to Power-prestige.*

*Mindfulness and Retention-time.* Mindfulness involves a finer awareness of the individual’s inner and outer world, and this facilitates access to the entire stock of an individual’s knowledge (Tart 1994). Relatedly, Brown, Ryan, and Creswell (2007) note that mindfulness diminishes distractions in stimuli processing, that it leads to a greater awareness of risks, that it is associated with more informed decisions and that a focus on the present does not equate with living for the present – which could involve hedonism and impulsiveness – nor with having a disregard for future consequences. Hence, mindfulness should lower individuals’ susceptibility to consumerism (Rosenberg 2004) and promote a future-oriented attitude. Moreover, a greater awareness of risks and better decision-making should lead mindful individuals to undertake a more careful management of their funds. Therefore, the following is hypothesized:

*H3: Mindfulness is positively related to Retention-time.*

*Mindfulness and distrust.* Self-acceptance is a characteristic of mindfulness that builds individuals' confidence as good decision-makers (Carson and Langer 2006). Carson and Langer note that mindfulness empowers people with determination, a sense of having control over their own lives and the ability to draw on past experiences to find opportunities for improvement. Moreover, mindfulness leads individuals to relate to negative thoughts and feelings in a novel way, namely by preventing them from ruminative processing and from looking at thoughts as personal and dangerous (Shapiro et al. 2006). Furthermore, mindfulness is associated with "a flexible and open 'mindset' in which one remains actively engaged in the process of drawing novel distinctions about the environment" (Carson and Langer 2006, 31), which should also contribute toward improving one's decision-making abilities. Therefore, higher levels of mindfulness are likely to be associated with enhanced trust, namely regarding situations involving money. Accordingly, mindfulness should build an individual's confidence in their own capacity to make efficient financial decisions and to look at money matters in a more positive mindset. Thus, we propose the following:

*H4: Mindfulness is negatively related to distrust.*

*Mindfulness and anxiety.* One of the mechanisms through which mindfulness works is self-regulation (Shapiro et al. 2006). Brown and Ryan (2003) have shown that individuals with higher scores in mindfulness reported higher self-regulated emotion and behavior. Reperceiving, "the capacity to dispassionately observe or witness the contents of one's consciousness" leads individuals to look at their experiences and emotions more objectively and with fewer maladaptive response patterns (Shapiro et al. 2006, 381). An individual who regularly suffers from anxiety can react to it in an unskillful way (e.g., by drinking or shopping). The process of intentionally being present in each moment, openly and non-judgmentally, helps

one develop coping skills in that they are able to step back and realize that their present emotional state will soon pass, preventing them from engaging in automatic behavioral responses (Shapiro et al. 2006). Thus, mindful individuals are better equipped to deal with anxiety. Accordingly, the greater degree of freedom that mindfulness should enable in responding to money matters is likely to drive individuals to look at money without worry and in a healthier way. We therefore hypothesize the following:

*H5: Mindfulness is negatively related to anxiety.*

### **Money Attitudes and Credit Intentions/Use**

A few studies, specifically Hayhoe, Leach, and Turner (1999), Moore and Carpenter (2009) and Tokunaga (1993), have previously related money attitudes to credit. Based on this and on other literature, we succinctly develop four hypotheses concerning the relationship between money attitudes and credit intentions/use.

*Power-prestige and credit.* The perception of money as an instrument of power and prestige promotes a favorable attitude toward credit, as it enables access to goods and services that bring about status. A positive credit attitude, in turn, should foster borrowing. The relationship between power-prestige and credit card use has been established by Tokunaga (1993). Relatedly, Roberts and Sepulveda (1999) and Roberts and Jones (2001) found a positive association between power-prestige and compulsive buying. Therefore, we offer the following hypothesis:

*H6: Power-prestige is positively related to credit intentions/use.*

*Retention-time and credit.* Retention-time concerns the extent to which individuals spend their money carefully and plan their financial resources to have a secure future (Yamauchi and Templer 1982). It encompasses a more rational view of money (Engelberg and Sjöberg 2006), involves a time horizon that attaches a lower preference to the present, and applies a high discount factor on future rewards (Jain 2012). Hence, such individuals should display a greater predisposition to defer gratification from consumption, which should curtail their acquisition of credit. Not surprisingly, individuals who are less prone to making financial plans and retaining money to ensure a more financially secure future are heavier users of credit cards (Hayhoe, Leach, and Turner 1999; Tokunaga 1993). In addition, Roberts and Sepulveda (1999) found that retention-time is inversely related to compulsive buying. Thus, we expect the following:

*H7: Retention-time is negatively related to credit intentions/use.*

*Distrust and credit.* Distrust in situations involving money should foment a negative credit attitude. Yamauchi and Templer (1982) state that individuals scoring high in this dimension do not have faith in their ability to make efficient purchase decisions. As such, they should refrain from borrowing to finance consumption. Indeed, Roberts and Jones (2001) confirm that distrust significantly reduces compulsive buying. Thus, the following hypothesis is offered:

*H8: Distrust is negatively related to credit intentions/use.*

*Anxiety and credit.* Anxiety has been associated with credit-related problems (Tokunaga 1993). Past research suggests that anxiety compels individuals to act, with consumption being used as a tool to relieve it (Roberts and Jones 2001). Hence, anxiety should stimulate a tolerant attitude toward credit meant to purchase products that act to prevent and ease that feeling. This agrees with the findings of Roberts and Sepulveda (1999) and Roberts and Jones (2001) that anxiety is positively associated with compulsive buying. Thus, the following hypothesis is proposed:

*H9: Anxiety is positively related to credit intentions/use.*

## **METHOD**

### **Sample and Data Collection**

#### ***Sample 1***

For data collection purposes, a self-report questionnaire was distributed among students of a major public university in Portugal. In contrast with the predominant literature, which is based on data collected in countries where tertiary student debt is common, such as the UK and the USA, most students who participated in our study (and most higher education students in Portugal) are not in debt. Generally, parents pay for the tertiary education of their offspring. However, these students will soon enter the labor market and become financially independent. They are likely to borrow soon after leaving university due to having high expectations for their future income, given the academic advantage they will have earned through higher education, being at an entry-level stage of their career (e.g., Chien and Devaney 2001) and in accordance with life-cycle theories (Ando and Modigliani 1963). According to Basef – YTD2016, in a study from Marktest, a Portuguese market research company, 32.7% of Portuguese consumers with a bank account who are 15 years old or older (7,263,000) have a credit card. Of these, only 4.4% belong to the 15-24 age group, a percentage that grows to 18.8% and 26.5% in the 25-34 and 35-44 age groups, respectively. Moreover, of the Portuguese consumers who are 15 years old or older and have a personal loan (excluding mortgages), 2% belong to the 15-24 age range, a percentage that jumps to 23.8% and 29% in the 25-34 and 35-44 age ranges, respectively. Considering the products acquired with personal loans, those in the 25-34 age group are responsible for 30.6% of car loans, 25.7% of household electric appliance loans, 19.2% of

health loans, 23.5% of furniture loans and 23.1% of loans applied toward the purchase of electronic equipment. Hence, university students have a markedly different experience with debt. However, and as noted above, the specificities of the student sample make it an important target for research on credit intentions and money attitudes. Moreover, a vast array of characteristics that shape individuals' willingness to borrow are psychological in nature. As such, they are structural, remaining stable for years. This is another reason why university students, who are about to enter the labor market, are an interesting target population for the study of attitudes and behaviors regarding debt (e.g., Davies and Lea 1995; Xiao et al. 2014).

We distributed 1,942 questionnaires in strategic locations across the university, namely those with a large student presence, such as canteens, libraries and entrances to University faculties to obtain a broad representation of the University's student body. As a result, the distribution of the respondents per faculty closely resembles that of the entire University. Moreover, we note that approximately one third of the students entering the University (first degree) come from the geographical area surrounding it, with the remaining two thirds coming from other areas of the country. This suggests that the sampled students may not differ that much from the students of other Portuguese universities. We obtained valid responses from 682 students, corresponding to a net response rate of 35.1%. Respondents ranged in age from 18 to 29 with a mean of 20.8, most were undergraduates (78%) and 61.8% were females. In addition, of the 682 students in our sample, only 16 reported having a bank loan, and of the 149 students (21.8%) who possess a credit card, only 41 (6%) report occasionally paying interest on the credit card debt. This shows that these students are inexperienced with debt, as is generally the case in Portugal.

### *Sample 2*

Participants, comprised of adult US residents, were recruited through Amazon Mechanical Turk (MTurk) (for a survey on the usage of MTurk see Mason and Suri 2012). MTurk is an online crowdsourcing marketplace of workers who are willing to complete small online tasks (known as “Human Intelligence Tasks” or “HITs”) for monetary compensation, although many workers have reported that they complete HITs because they are fun (Paolacci et al. 2010). Participants in our HIT were paid \$.50 for completing the survey. Recent research has demonstrated that US-based MTurk workers report valid data (Buhrmester et al. 2011), producing results that are generalizable to other populations (Paolacci et al. 2010; Horton et al. 2011; Berinsky et al. 2012). Therefore, an increasing number of studies using data collected through MTurk have been published in top scientific journals (e.g., Balasubramanian et al. 2017; Coleman and Williams 2013; Jones and Paulhus 2011; Xia and Kukar-Kinney 2014).

To ensure data quality, the HIT was restricted to workers with at least a 95% approval rating and 50 or more approved HITs. The original sample consisted of 362 individuals, however, we used two additional criteria to improve data quality. First, participants who gave any response other than “strongly disagree” to an attention check question stating, “I am not reading the questions of this survey”, which was embedded in a set of multiple questions, were eliminated (cf. Peer et al. 2013). Second, given that the total time spent completing a HIT is a quick and easy way to identify poor/low-effort responses (Mason and Suri 2012), the fastest 5% of survey respondents were also removed. Two more respondents were removed due to missing data on one of the variables of the study, leaving a final sample of 305 individuals (62% female; ranging in age from 19 to 76 years old,  $M = 37.1$ ,  $SD = 11.8$ ).

## **Measurement**

The pre-tested questionnaire relied on previously validated measures to assess the constructs of interest. To measure mindfulness, we relied on the widely used, fifteen-item Mindfulness Attention Awareness Scale (MAAS) by Brown and Ryan (2003), using a 5-point frequency scale. We measured money attitudes using the Money Attitudes Scale (MAS) by Yamauchi and Templer (1992), which comprises four dimensions, namely, power-prestige, retention-time, distrust and anxiety. The response format for the MAS was a 5-point Likert-type scale using “totally disagree” (1) and “totally agree” (5) as end points. Finally, the measure for credit intentions (CI) was adapted from Zhu and Meeks (1994), which is similar to the one adopted by Watson (2003). The CI measure was composed of 8 questions inquiring about one’s likelihood to borrow money to purchase the following items: housing, basic necessity goods, furniture, car/other vehicle, health, electric appliances/electronic devices, education and holidays. Response end points ranged from “very low” (1) to “very high” (5). We created an index with these eight items, as the responses to each of them do not necessarily have to be correlated. However, we also conducted an exploratory factor analysis on the eight items and, in sample 1, we identified two factors, one comprising basic necessity goods, health and education, which we will refer to as basic products (CI directed toward the purchase of these items will be designated henceforth as CI\_BP), and the other comprising furniture, car/other vehicle, electric appliances/electronic devices, housing and holidays, which we will refer to as non-basic products (CI\_NBP). The application of exploratory factor analysis to sample 2 also revealed two factors, but with housing included in the CI\_BP index. A number of reasons may explain this. Many students of the University live in a rented apartment/bedroom, which may imply that buying a house is not of primary importance; on the other hand, cultural variations may also explain this. Accordingly, for each sample we estimate a structural model with the index for the eight items of CI, as well as a model comprising the two credit intention factors, CI\_BP and CI\_NBP. Finally, in the questionnaire administered through MTurk, we also



questioned whether over the past two years the respondent (or the spouse/partner) had relied on credit from family, friends, banks, credit card companies or others to buy any of the eight items. Subsequently, we also formed an index for credit use (CU) considering the eight items, as well as a CU\_BP and CU\_NBP, with four items each. After collecting the data, we relied on confirmatory factor analysis (CFA) to assess the psychometric properties of the measures. We note that we relied on item parceling, a practice that is common in latent variable analysis. Item parceling, the aggregation of two or more items, has several advantages compared to reliance on single items, including higher reliability, higher communality and lower likelihood of suffering from distributional violations (Little et al. 2002). MacCallum et al. (2001) add that models relying on parcels are less likely to denote correlated residuals and dual loadings, and are more parsimonious, which is particularly important in our case given the number of items per measure (e.g., mindfulness). These benefits of item-parceling also contribute to improving model fit (Coffman and MacCallum 2005). For this reason, Coffman and MacCallum (2005) state that latent variable models should rely on parcels whenever possible. Accordingly, we applied item parceling to our measures, having relied on random assignment for building the parcels (Little et al. 2002). The overall confirmatory factor analysis for sample 1 yielded quite a reasonable model fit (Table 1):  $\chi^2=389.85$ ,  $df=190$   $p<.01$ ; IFI=.969; TLI=.962; CFI=.968; RMSEA=.039. A similar fit was obtained for sample 2 (please see Table 1). We also obtained convergent validity in both samples, as all items loaded on the appropriate latent variable with a highly significant coefficient. Moreover, all composite reliabilities and Cronbach alphas exceed the 0.70 threshold. Finally, the average variances extracted are above the 0.50 cut-off, and all squared correlations are below the respective average variances extracted, implying discriminant validity. Hence, the measures meet acceptable thresholds for validity and reliability in both samples. These results are for the CFA in which the two credit intentions are distinguished (Table 1); the results when we consider a single measure for CI and CU, which

are omitted, are remarkably similar. Table 2 contains, for each sample, the standard deviations, correlations, Cronbach Alphas, composite reliabilities and average variances extracted when the disaggregated credit intentions are considered; we have also added the standard deviation and correlations involving the single measures for CI and CU to Table 2.

**[please insert table 1 about here]**

**[please insert table 2 about here]**

Given that we relied on a single informant, common-method variance (CMV) emerges as a rival explanation for the relationships observed among construct measures (Podsakoff et al. 2003). To address the extent to which this could be a problem, we initially estimated a single factor model in which all indicators loaded on a general method factor; this resulted in a model with very poor fit, indicating that CMV is not a relevant problem. Additionally, we relied on a procedure that compares simpler with more complex confirmatory factor models (Chaudhuri and Ligas 2009; Zhou, Hirst, and Shipton 2012). Accordingly, when CMV is present, a simpler (with fewer factors) confirmatory factor model should fit as well as or better than a model that is more complex, i.e., one containing more factors. Therefore, we compared the original CFA models with various alternative models containing fewer factors (by merging the measures of two or more constructs). We determined, through several chi-square difference tests, that the predicted models (the more complex ones) always fit better than each of the simpler models we ran, evidence that the relationships observed in the study are not greatly affected by CMV.

## **MODEL ESTIMATIONS AND RESULTS**

To estimate the structural model, we relied on AMOS version 22. We estimate six models (Table 3). For sample 1, we estimate a base model with the unitary measure for CI and a model with the two partial measures for credit intentions, CI\_BP and CI\_NBP. For sample 2, we estimate four models, given that two dependent variables were considered –credit intentions (CI) and credit use (CU)– and each of them is estimated with the respective overall index and the two partial indices (CI\_BP and CI\_NBP; CU\_BP and CU\_NBP).<sup>1</sup> Estimation of the six models yielded good fit statistics (please see footnotes in Table 3). In these estimations, we control for age and gender.<sup>2</sup>

**[please insert table 3 about here]**

We will first consider the results concerning the overall, unitary credit measure (CI and CU). The results indicate that mindfulness only negatively relates directly to CI in sample 1, thereby providing limited support to H1. However, mindfulness relates as predicted to all dimensions of money attitudes across the three estimations. Accordingly, mindfulness is negatively associated with power-prestige, positively with retention-time, and negatively with distrust and anxiety. Hence, the results support H2 through H5. Power-prestige only significantly relates to CI in sample 2 and retention-time is not significantly related to credit across the three estimations. Thus, H6 receives limited support, whereas H7 is rejected. Distrust is negatively

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<sup>1</sup> The usual model estimation approach in structural equation modeling is maximum likelihood. This approach, however, requires continuous observed variables. However, the two disaggregated measures of credit use (CU\_BP and CU\_NBP) each range from 0 to 3 or more, implying that these are ordered categorical variables with four levels. AMOS 22 relies on Bayesian estimation to deal with such variables. This estimation involves an ever-changing process of drawing random samples, a process that one can halt when a certain convergence statistic is attained. However, Byrne (2010) notes that when there are more than three response categories and the model is well specified, the differences between estimation approaches will be minimal. We compared the results of Bayesian estimation with those of the maximum likelihood approach with bootstrapping for significance testing and observed meaningless differences. Hence, we relied on the results obtained through maximum likelihood with bootstrapping, as the latter is the approach recommended for testing the significance of indirect paths.

<sup>2</sup> We ran additional estimations in which we controlled for graduate/undergraduate status in sample 1. Given that meaningless differences were observed, such estimations are omitted.

related to credit and anxiety is positively related to it across the three estimations. The latter results conform with predictions, thereby supporting H8 and H9.

However, the results of the estimations that disaggregate CI and CU into two constructs (BP and NBP) reveal quite a different picture. None of the paths from mindfulness and money attitudes to CI\_BP or CU\_BP are significant, except for the positive relationship between anxiety and CU\_BP, providing some support for H6. Mindfulness only relates in the predicted negative way with CI\_NBP in sample 1, but it relates to money attitudes in the predicted ways across estimations. These results provide limited support for H1 and support H2 to H5. As for the relationships between money attitudes and CI\_NBP/CU\_NBP, the paths are significant and in the expected direction except in for retention, which is not significant in the estimations involving sample 2. Hence, H6, H8, and H9 are strongly supported, while H7 (retention) receives more limited support.

Finally, we estimated whether the indirect effect of mindfulness on credit through money attitudes is significant. For that purpose, we relied on bootstrapping to assess the significance of the indirect and total effects (Cheong and MacKinnon 2012; Zhao, Lynch, and Chen 2010). We determined across the two estimations for sample 1 that the indirect effect is not significant and that the total effect of mindfulness on CI is negative and significant in the base model, as well as for non-basic products in the disaggregated model. The results for sample 2 indicate that, across estimations, only the indirect effect of mindfulness on CI\_NBP and on CU\_NBP is significant, with the expected negative coefficient. Figures 2a and 2b summarize the significant relationships observed in each sample.

**[please insert Figure 2a about here]**

**[please insert Figure 2b about here]**

## **DISCUSSION**

There is a growing interest in the effects of mindfulness on individuals' attitudes and behaviors. Such research has been particularly focused on documenting the diverse benefits associated with mindfulness. Pursuing this vein of research, this study addressed the relationship between mindfulness and credit intentions/use considering the mediating effects of money attitudes. This appears to be one of the first studies looking at the relationship between mindfulness and individuals' money attitudes and credit intentions/behavior. Overall, the results support most of the research hypotheses, denoting the influence that mindfulness might have in shaping consumers' financial mindset in a healthy way.

The results suggest that mindfulness is negatively related with individuals' likelihood to borrow money, especially for non-essential products. The results denote either a direct (sample 1) or an indirect (sample 2) relationship between these variables. Hence, mindful individuals appear to be more satisfied with what they have, decreasing their desire to buy more and, thus, their likelihood to borrow. The non-significant direct path in sample 2 deserves exploration. It is possible that mindful individuals, looking for the attainment of their intrinsic aspirations, are willing to acquire more expensive products through credit. These might be of higher quality, last longer, and/or provide greater performance, or enable them to pursue an adventuresome life, namely by traveling to different countries or furthering one's athletic capacities. This effect may have cancelled out the one we previously proposed, due to sample 2 being composed of individuals who have more financial capacity and autonomy, thus rendering a non-significant direct relationship between mindfulness and credit. Notwithstanding, the direct relationship in

sample 1 and the indirect relationship in sample 2 suggest that mindfulness has a role in explaining credit behavior.

Moreover, mindfulness appears to reduce individuals' propensity to look at money as a source of power-prestige, and to increase the likelihood that individuals will restrict their current consumption in preparation for the future. These results are in line with Rosenberg's (2004) assertion that mindfulness tempers consumerism, as well as with the results of Brown et al. (2009), who argue that mindfulness helps reducing individuals' financial desire gap. Given the symbolic meaning of money and the overwhelming presence of credit in modern societies, which serves to fuel a culture of consumption, an increased number of consumers find themselves in fragile financial situations, which are frequently associated with the mismanagement of money (e.g., Watson 2003). Accordingly, our results support the idea that mindfulness disciplines individuals' consumption and borrowing desires, namely by reducing the usage of money as a trampoline to acquire status and by fueling preparedness for the future, thus helping to mitigate a societal problem, that of over-indebtedness. Thus, it appears that mindfulness is a quality that should be promoted to foster both more responsible consumption and attitudes and behaviors toward money and credit. This aligns with the findings of other studies reporting positive effects of mindfulness on healthier eating (e.g., Jordan et al. 2014), alcohol use and sexual aggression (Gallagher, Hudepohl, and Parrott 2010).

Mindfulness also appears to prevent individuals from looking at money with distrust or feelings of hesitation and suspicion. This finding suggests that mindfulness should build individuals' faith in their ability to handle issues involving money, which should in turn lead to better consumption and financial decisions. This is in line with contentions that mindfulness reduces rumination (Shapiro et al. 2006) and builds confidence in one's decision-making abilities (Carson and Langer 2006). Hence, mindfulness helps individuals build a healthier relationship

with money. Furthermore, mindfulness also reduces the perception of money as a source of anxiety, an attitude that appears to impair sound consumption and financial decision-making (e.g., Duh 2016; Roberts and Jones 2001; Tokunaga 1993). Therefore, the results suggest that mindfulness helps individuals maintain functional stability when dealing with money, namely by stopping them from engaging in automatic responses to feelings of anxiety.

Regarding the relationship between money attitudes and credit, we observe that consumers consider using credit to buy non-basic products as a tool to promote status, unlike using credit to buy basic products. This finding provides further insight to Tokunaga's (1993) observations concerning the relationship between power-prestige and credit card use. With respect to retention, the findings related to our student sample suggest that those who are more prone to making financial plans, namely by retaining money to ensure a more financially secure future, have less favorable attitudes towards credit, but only for financing non-basic products. Again, this result is in accordance with and advances upon the findings of Hayhoe, Leach, and Turner (1999) and Tokunaga (1993). However, in sample 2, no relationship is obtained between retention and credit. A possible explanation might be that some people who tend to make financial plans and retain money simultaneously resort to credit. This is related to the co-holding phenomenon, which Bertaut, Haliassos and Reiter (2009) and Gathergood and Weber (2014) defined as the simultaneous holding of high-cost credit and low-yield liquid assets. Several reasons have been advanced to explain this behavior, including savings serving as an insurance to account for unexpected expenses (Gathergood and Weber 2014), or to avoid the discomfort of using savings for payments (Prelec and Loewenstein 1998). These reasons may have counterbalanced our argument that retention-time involves long-term concern leading to a lower probability of borrowing money, thereby rendering a non-significant relationship. These arguments should not apply to students, who are essentially financed by their parents, thus being curtailed in their co-holding opportunities.

As for distrust, the negative relationship predicted with credit only receives support when we consider the measures CI\_NBP and CU\_NBP. Roberts (2001) states that individuals scoring high in this dimension do not have faith in their ability to make efficient purchase decisions. Their reluctance to purchase translates into a reluctance to borrow to make purchases, but our study suggests that this only applies to non-basic products. With regard to anxiety, we obtained evidence that it stimulates a tolerant attitude toward credit directed to the purchase of products that may act to prevent and ease that feeling. The link between anxiety and credit use had already been empirically determined by Tokunaga (1993), but our findings add to that by suggesting that it is mostly credit directed toward buying non-basic products that fulfills that role.

It is important to note the contrasting results between the paths to credit intentions/credit use for purchasing basic and non-basic products. These results suggest that consumers differentiate their credit intentions/behavior according to the purpose for which the credit is to be used. Generally, we found that neither mindfulness nor money attitudes determined credit for basic products (the exception being anxiety and credit use). Against this, most paths from money attitudes to credit intentions or credit use for purchasing non-basic products were significant and in the expected direction. Moreover, mindfulness appears mostly related to credit for NBP. Therefore, individuals' psychological profile appears mostly relevant when credit for non-essential products is at stake. A possible explanation for these results is that individuals find it easier to justify the purchase of goods they view as necessities than to justify discretionary spending (e.g., Dhar and Wertenbroch 2000; Okada 2005). The underlying rationale is that the latter is associated with a sense of guilt, and that it is more difficult to assess its benefits (Okada 2005). This paves the way for the psychological make-up of each individual to have a greater influence in explaining the purchase of non-essential products. We further note that our results are in line with Nyhus and Webley (2001), who found that different psychological mechanisms



determined different saving categories. Similarly, Watson (2003) finds that high and low materialism was not associated with intentions to borrow money for necessities. However, he found that the average intention to borrow money for the purchase of non-essential products differed across individuals who were high and low on materialism. The failure to distinguish between credit purposes may eventually explain why Norvilitis, Szablicki, and Wilson (2003) found money attitudes to be unrelated to the debt-to-income ratio. Hence, our results stress the need for future research on consumer credit to discriminate different credit purposes, which can be distinguished in terms of the nature of the psychological mechanisms that drive them. This is something that has been neglected by past research and that, therefore, should result in valuable insights for understanding consumers' financial attitudes and behaviors.

In summary, mindfulness has been linked to several positive outcomes across a broad range of human behaviors. This study sheds light on the relationships between mindfulness, money attitudes and credit. The results we obtained across samples are not totally coincident, but this was expected, given the distinct nature of the samples, as well as the cultural differences across the two countries. Notwithstanding, the results offer systematic evidence for most of the relationships. Moreover, in the U.S. sample, the results obtained when considering credit acquired in the recent past are similar to those obtained when considering credit intentions. Overall, mindfulness shows a direct or indirect relationship with credit across samples and is linked with money attitudes in a systematic way, as are money attitudes with credit intentions and credit use. Mindfulness also appears to be related to individuals' financial attitudes and behaviors in a positive way. Finally, there is great consistency in the results across the two samples, and this contributes to the generalizability of the findings. These considerations imply that future studies in this area should yield valuable results in further exploring the role of mindfulness.

Finally, a note on the control variables. Age is negatively related to credit intentions in sample 1, considered both globally as well as disaggregated, and to CU\_BP in sample 2. The student sample results contrast with the positive relation found in Davies and Lea (1995), which was attributed to a habituation effect from living with easy credit. The results observed in our study may be due to older students' experience with a major financial crisis while growing up, which may have inculcated greater thrift values, thus decreasing tolerance to credit. Age is also generally unrelated to money attitudes with the exception of power, with which it has a negative relationship in sample 2. As for gender, we only observe significant effects on credit intentions when these are disaggregated according to purpose in the student sample; specifically, women are more favorable than men toward borrowing to buy basic products, whereas men are more favorable than women toward borrowing to finance non-basic products. Moreover, across samples and estimations, we find women to be less power-oriented, and more prone to money-anxiety. This is in line with the more conservative nature of women and men's obsession with money (Furnham 1984).

## **PRACTICAL IMPLICATIONS**

Although we looked at mindfulness as a trait, thereby assuming mindfulness was not acquired through any mindfulness training program, we can rely on our research findings to suggest that it would be beneficial if financial education and counseling would include mindfulness training. This could be offered to youngsters in school as a preventive strategy, or to those with debt-related problems who seek financial counseling for help with their finances. Implementing mindfulness-based programs could be particularly useful to individuals with specific disorders, such as compulsive shopping, which has been linked to excessive borrowing. Interventions designed to improve mindfulness have proved effective in the context of other psychological

disorders such as substance use (Bowen, Chawla, and Marlatt 2011) and overeating (Kristeller 2003). Given the Western reluctance to practice meditation, Stone (2011) suggests other paths based on psychotherapy, such as counseling and therapy that are sometimes combined with mindfulness exercises. In addition, self-regulation, a central quality in mindfulness, can be strengthened by regular exercise (Baumeister et al. 2006). Oaten and Cheng (2007) have shown that most participants in a 4-month money management training program improved their money-handling habits, namely by spending less and saving more, despite a constant income. Rosenberg (2004) suggests that schools could offer programs directed at raising awareness of consumerism. Education about how our minds work would generate more awareness about the subconscious processes through which advertisers manipulate people's preferences, thereby reducing consumerism as individuals would become less susceptible to the automatic responses sought by advertising. Acting upon money attitudes to influence credit behavior is also a possibility; for example, educational efforts targeted at young consumers may reduce anxiety by addressing issues like preparing a budget and how to avoid excessive interest on credit cards (Moore and Carpenter 2009).

## **LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH**

The contributions of this research should be tempered with its limitations. We adopted a cross-sectional design in this study, which precludes any causal inferences. This issue applies in particular to the relationship between money attitudes and credit intentions/use, as mindfulness is a stable individual difference. We have argued that money attitudes could influence credit. However, it is possible that after acquiring credit, consumers become more money anxious and/or become more oriented toward retention-time. Hence, feedback loops are very likely to take place between the variables in this particular area of the study, and a longitudinal study

would be able to trace them. Notwithstanding, the results we obtained from the student sample, which is virtually unexposed to debt/credit, is consistent with a link in money attitudes to credit intentions. We also stress that, conceptually, money attitudes have a more general focus and a higher level of abstraction than credit, and this probably explains why the few studies that have previously examined the relationship between money attitudes and debt have looked at money attitudes as explanatory variables.

In addition, although the study relied on two markedly different samples and obtained fairly consistent results, replication of the study with different samples would be interesting and would further strengthen its generalizability. Relatedly, the results associated with the two samples differ in a few instances, and we reasoned about these. However, the samples are markedly different, and this makes it difficult to clearly ascertain whether the observed differences are due to age, economic, educational, cultural or other circumstances. Moreover, we relied on a single informant, which raises the issue of common method variance, and this may have inflated the relationships amongst the constructs. To address this issue, we adopted a number of procedural remedies (cf. Podsakoff et al. 2003): we assured respondents that their answers were anonymous and confidential, which should have minimized social desirability bias and respondents' evaluation apprehension, thereby increasing our likelihood of accessing respondents' true feelings; the independent and dependent variables were placed in different blocks of the questionnaire, thus creating a proximal separation to minimize response bias; we did not inform respondents of our conceptual framework, which should have reduced respondents' propensity to provide answers that please researchers; item ambiguity and response bias were minimized by relying on previously validated scales, by pretesting the questionnaire, and by labeling each scale point; and finally, the questionnaire stated the importance of respondents' participation in the study, with the goal of motivating individuals to participate and to provide their true feelings. Additionally, as previously noted, we also

conducted some statistical tests to ascertain the magnitude of common method variance, which indicated that such a problem is not likely to affect the obtained results in a meaningful way.

Several of our estimations were based on credit intentions. According to the Theory of Planned Behavior (Ajzen 1985), intentions are a precursor to actual behaviors. However, there may be a gap to close between intention and actual behavior. In fact, the correlation between overall credit intentions and overall credit use in sample 2 is of about .31. Actual behavior also depends, for example, on perceived behavioral control, which reflects the opportunities and the resources needed to perform a certain behavior (Ajzen 1985). Notwithstanding, we note that the results concerning credit intentions and credit use in sample 2 are remarkably similar.

The study was also conducted with consumers from two countries, which may preclude the replication of our findings in other settings. However, we note that the results conformed to theoretical propositions, which gives some weight to the generalizability of the findings. At any rate, it should be rewarding to conduct similar studies in countries with different cultural settings. It would also be interesting to investigate the relationship between mindfulness and the amount of credit and consumption spending in adult samples, distinguishing the acquisition of basic from non-basic products. Additionally, our research findings suggest that important pay-offs should result from studies analyzing the effects of mindfulness on other consumers' financial attitudes and behaviors, including saving, financial investment choices, debt, and number of credit cards. Financial literacy is also a financial issue with relevant implications for consumer well-being and, thus, tracing its relationship to mindfulness should yield important findings. Compulsive buying is also likely to be significantly related to mindfulness.

In summary, mindfulness has been related with a number of positive outcomes for organizations and individuals alike, but its influence on consumers' financial behavior is largely unexplored. Accordingly, this study investigated the relationship between mindfulness, money attitudes and

credit intentions/use. The results suggest that mindfulness might contribute to shaping consumers' financial mindsets in a salutary way, which is consistent with findings on the effects of mindfulness in other contexts. Hence, our results may pave the way for novel interventions concerning the promotion of healthier consumer financial attitudes and behaviors while stimulating further research in this area.

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