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The impacts of emotions and personality on borrowers' abilities to manage their debts

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The Impacts of Emotions and Personality on Borrowers' Abilities to Manage their Debts

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Abstract

This paper examines the impacts of retail borrowers' emotions and personality traits on their abilities to engage in appropriate responses when things unexpectedly go wrong and they get into debt repayment difficulties. We establish several scenarios where borrowers are hit with unforeseen circumstances that affect their abilities to make their loan payments and we classify and evaluate the riskiness of the strategies they state that they would adopt in those situations. Via an extensive on-line survey conducted in the UK, we show that borrowers who were most comfortable about taking on debts in the first place, those who show neurotic tendencies, and those who believe that they have control over events rather than being controlled by them, are more likely to undertake high risk strategies when faced with unforeseen issues that affect their ability to meet their debt interest and repayment costs. We also find that respondents who identify as feeling excited, alert or guilty, as well as younger borrowers and those who are single or renters, are more likely to opt for risky approaches. Our findings have potentially important implications for lenders, regulators and debt counselling services regarding the types of people who are most likely to get into debt troubles.

Keywords: retail investors, attitude to debt, risk tolerance, emotions, personality, financial decisions.

J.E.L. Classifications: G11, G20, J14, C25

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1. Introduction

In recent decades, the UK has seen a rapid rise in consumer indebtedness, which has more than quadrupled since 1990. According to personal debt statistics from The Money Charity, total UK household debt had risen by 381% to £1669bn in 2019 from £347bn in 1990, with the average debt per adult at £31,643.[1] As of March 2019, average total household debt was around £64,000, comprising of credit card balances, student loans, personal loans and mortgage debt – an increase of 17% in just five years.[2] Taking on debts has become normalised as part of everyday life across much of the world, enabling people to purchase goods and services for use today while deferring the payment to a future date, smoothing out consumption over their lifetimes.

In most cases, people are able to borrow money and to make the interest and principal payments when required, but problems may arise if unforeseen circumstances make it challenging to do so. Anticipated or actual difficulties in servicing debts can not only lead to financial hardship but can also cause significant stress. Scholarly research has explored the adverse effects of consumer indebtedness on mental health, with several studies reporting a link between debt-holding and depression, anxiety and suicidal tendencies mediated by hopelessness (Drentea, 2000; Bridges and Disney, 2010; Meltzer et al., 2011). Recent survey results published by the UK Money Advice Service highlighted the impact of indebtedness on consumer mental health. Their findings reveal a strong relationship between debts and mental health, with financial difficulty being both a cause and consequence of poor mental health. A poll of UK adults found that, for those with debts, 38% said they have felt anxious, 34% have experienced depression and stress and 21% have suffered from mood swings, although unfortunately, comparative figures for those without debts are not available as such individuals were not sampled. The increasing use of technology in recent years has opened up a wide range of new avenues for borrowers to access loans and credit cards. While allowing them greater opportunities to shop around for better interest rates and other favourable terms, the ease and anonymity of on-line borrowing also escalates the likelihood that they will overstretch themselves.

Soaring debt statistics and the consequences associated with indebtedness have led to a considerable interest in the determinants of consumer indebtedness in recent decades. Research in this area has highlighted a wide range of individual psychological and personality attributes that have an influence on consumer indebtedness. Psychological determinants of financial risk taking such as impulsivity,

[1]See https://www.moneyadviceservice.org.uk/en/corporate/money-on-the-mind--a-nation-feeling-the-cost
[2] https://www.nimblefins.co.uk/average-household-debt-uk

sensation seeking, self-esteem and personality traits, as well as the impact of the emotional state of the individual when making financial choices, have been explored in relation to consumer indebtedness, as we discuss in detail below.

While there exists a reasonable body of research on individual personality and psychological attributes associated with consumer indebtedness, the vast majority of extant studies are focused on modelling the original decision to take on debts. Hence, to the best of our knowledge, research focusing on the factors associated with whether individuals make risky or sensible financial decisions when already in debt and experiencing financial difficulties, is lacking. We argue that this latter issue is the one that is most pertinent for exploration and analysis: being in debt is not particularly problematic if one is able to manage the debt and repayment is within one's means. Rather, the problem arises when an individual finds themselves in a situation of financial difficulty, which could be as a result of several factors including unanticipated unemployment or poor health affecting the ability to earn a full income. In such situations, how individuals cope with their existing debt repayments and the choices they make to manage their debts and ensure that they remain on track could mean the difference between a temporary bump in the road or a worsening spiral into indebtedness leading ultimately to county court judgements or even, in the most extreme circumstances, the loss of their home. Therefore, it is this all too frequent but under-researched situation – unforeseen circumstances leading to a diminished ability to make debt repayments – which is the focus of the present study.

In periods of financial difficulty, individuals who are in debt may either make sensible or high-risk decisions when managing their debt. UK debt advisory firms have outlined several debt management strategies that have proven to be either effective or ineffective when dealing with debt.[3] Sensible choices include seeking professional advice, negotiating with creditors, budgeting to reduce regular living costs, and in some instances selling assets to raise money. High-risk choices include taking out more loans or using credit cards and bank overdrafts to pay existing debts. Some people may also respond to mounting debt by choosing to ignore the situation, such as refusing to open final payment letters and ignoring phone calls from creditors or debt collectors. These strategies are risky and ineffective as they result in the accumulation of more debt due to further accrued interest, late payment charges and other penalties.

[3] See https://www.runthemoney.com/the-dos-and-donts-of-dealing-with-debt-2/
https://www.nationaldebtline.org/
https://www.citizensadvice.org.uk/debt-and-money/
https://www.moneyadviceservice.org.uk/en/categories/taking-control-of-debt

The focus of this study is to develop an empirical model that can identify individuals who show readiness to adopt high-risk loan management choices when faced with mounting debts during periods of financial difficulty. We explore the factors that are associated with an individual's decision to choose high-risk and ultimately self-defeating debt management approaches rather than more sensible strategies, and we draw on the literature highlighting the Influence of attitudes to debt, psychological variables, personality traits, emotions, and financial literacy, on consumer indebtedness.

The remainder of the paper develops as follows. Section 2 presents the main approaches and findings from the existing literature on how personality and emotions impact upon investment choices and then Section 3 proceeds to discuss the currently modest extant body of work on the factors affecting an individual's propensity to take on debt and also motivates and states the hypotheses that we test. Section 4 presents the data and methodology employed in the paper while Section 5 outlines and discusses the results. Finally, Section 6 concludes the study and summarises our findings.

2. Psychological Influences on Financial Decision-making

While the volume of research on the impact of emotions or personality traits on debts is very modest, there is, by contrast, a large body of work that examines the influences of these factors on investment decisions. This research is highly pertinent for the current study since our *a priori* expectation is that the same set of psychological and demographic influences will be relevant for both the saving and borrowing domains as they represent mirror financial choices. We therefore now proceed to discuss the literature on how emotions and personality have been found to affect investment decisions before moving on to focus on debts more specifically in Section 3.

Financial risk tolerance underlies much of financial decision making and is therefore a key concept. It refers to an individual's attitude towards risk and has been defined as "the maximum amount of uncertainty or investment return volatility that an investor is willing to accept when making a financial decision" (Grable, 2000, p. 625). An individual's risk tolerance determines their financial decision making and investment style, with risk-tolerant individuals more likely to engage in a wider range of financial products than those who are less risk-tolerant (Grable, 2000; Grable, Britt and Webb, 2008). It has been suggested that emotional and personality factors play a significant role in situations when a decision is complex and made under conditions of risk and uncertainty (Forgas, 1995; Isen, 2000).

<u>Emotions and financial decision making by retail investors</u>

It is clear from the research on the mental health impacts of debts presented above that, just as with investing, the choice of whether to take on debts, how much, and how to prepare for and deal with the repayments, is very much influenced by emotions and personality rather than being a purely

cognitive process. In the field of finance, emotionality has been portrayed as the antithesis of rationality which could have an adverse effect on investment decisions as it hinders the ability to make sound judgements (Charles and Kasilingam, 2014). It has been suggested that emotions and feelings experienced during a decision-making process “often propel behaviour in directions that are different from that dictated by a weighing of the long-term costs and benefits of disparate actions” (Loewenstein, 2000, p. 426).

There are mixed findings regarding the role of emotions on financial risk tolerance. There is evidence that individuals experiencing positive emotions tend to be less risk tolerant, possibly to avoid potential losses and to protect their good mood states in what has been termed the “mood maintenance” hypothesis (Isen and Patrick, 1983; Isen, Nygren and Ashby, 1988). Negative emotions on the other hand have been found to promote risk taking, as risks are sought out by individuals experiencing distress in an attempt to improve their mood, termed the “mood repair” hypothesis (Isen, 1984). It has also been suggested that decisions made when feeling good require simple rules of thumb while those made when feeling bad require detail-oriented thinking (Bless, Schwarz and Kemmelmeier, 1996; Sinclair and Mark, 1995). Kuhnen and Knutson (2011), however, provide contradictory evidence, finding that positive emotions such as excitement encourage individuals to be more risk taking while negative emotions such as anxiety discourage it. This is line with the affective generalisation hypothesis of Johnson and Tversky (1983) where affect (another term for an individual’s general emotional state) influences judgements of probabilities such that negative emotions trigger pessimistic risk assessments and therefore less risk tolerance while positive emotions evoke positive risk assessments resulting in more risk taking.

Personality factors and financial decision making

The role of personality traits on financial risk tolerance has also been explored in several studies. Carducci and Wong (1998) examined the influence of personality factors described in terms of Type A and Type B personalities on financial decision making in everyday financial matters such as personal investments. Someone with a Type A personality is characterised by competitiveness with an underlying tendency for aggressiveness and hostility while Type B personalities may be more creative, imaginative and philosophical (Jenkins, Zyzanski and Rosenman, 1971). Carducci and Wong found Type A personality to be associated with a willingness to take financial risks.

Research has highlighted a number of predisposing psychological factors that have an influence on financial risk tolerance. One of these factors is sensation seeking, which involves seeking new and stimulating experiences, and this has consistently been found to be associated with an increased

likelihood of participating in various risky activities including recreational drug use, gambling, smoking, reckless driving and driving under the influence of alcohol (Zuckerman, 1979; 1994; Newcomb and McGee, 1991; Greene et al., 2000; Goldenbeld and van Schagen, 2007). A few studies have found high sensation seeking to be associated with greater risk taking in financial decision making, driven by a need for arousal and stimulation (Harlow and Brown, 1990; Wong and Carducci, 1991; Sjoberg and Engelberg, 2009).

Recently, research has focused on the relationship between financial risk tolerance and the 'big five' taxonomy of personality which incorporates five traits: neuroticism or emotional stability, extraversion, openness to experience, agreeableness and conscientiousness (Digman, 1990). Extraversion is characterised by an outgoing and sociable personality with a tendency for optimism, social dominance and activity (Costa and McCrae, 1992). Extroverts are aroused by external tangible stimulation, thrill seeking and are more risk accepting on the whole than introverts (Sadi et al., 2011). The literature shows that extraversion is a significant predictor of the preference for engaging in risky behaviours such risky driving (Dahlen and White, 2006) and health and sexual risks such as excessive alcohol consumption and multiple sexual partners (Schmitt, 2004; Nicholson, Soane, Fenton-O'Creevy and Willman, 2005). Extraverts have also been found to show less responsiveness to punishment (Gray, 1987). Openness to experience is characterised by novelty seeking and is associated with a need for creativity, imagination and innovation (Zhao and Seibert, 2006). Openness to experience has consistently been found to be associated with risk taking behaviours such as unsafe driving and substance dependence (Arthur and Graziano, 1996; Grekin, Sher and Wood, 2006). Conscientiousness comprises preferable traits and include characteristics such as dutifulness, compliance and orderliness. Conscientious individuals have been found to be risk averse in several domains. Neuroticism has been described as a broad domain of negative affect which includes predispositions to experiencing several distressing emotions such as anxiety, anger, depression and shame, the opposite referred to as "emotional stability" (Costa, Terracciano and McCrae, 2001). While neuroticism is negatively associated with risk taking in areas such as finance and safety, it is positively linked to risky health behaviours such as excessive alcohol consumption (Martin and Sher, 1994). It has been suggested that individuals high on neuroticism easily lose self-control due to an inability to manage high levels of stress and seek gratification in escaping behaviours, becoming vulnerable to risky choices and activities (Pinjisakikool, 2017). Agreeableness includes socially desirable traits such as pleasantness, being forgiving, caring, and trustworthiness (Daly et al., 2010). There is ample evidence of a negative association between agreeableness and risk taking in areas such as substance misuse, delinquency and sexual risks (Terracciano et al, 2008; Heaven, 1996; Schmitt, 2004). Financial risk taking has been found to be positively associated with extraversion and openness to experience

and negatively associated with conscientiousness, neuroticism and agreeableness (Nicholson et al., 2005; Pinjisakikool, 2017).

3. Conceptual Framework and Hypotheses Development

As in the literature cited above highlighting the influence of emotions and psychological factors on investment decision-making, it has been suggested that credit demand also derives from behaviours that deviate from economic rationality (Bertaut and Haliassos; 2006) as recourse to credit is often influenced by personal and psychological factors beyond utility maximisation (Bertrand et al., 2005). Hence, in this section, we draw on the literature cited above linking emotions, psychological influences and investment choices and we combine it with what is already known about how people make decisions about debts to come up with an empirical model of the factors that affect how optimally people deal with the situation when they are faced with debt problems. Our conceptual model is presented in Figure 1, which shows graphically the sets of variables that we incorporate into the specification. These factors are grouped as positive and negative affect, the personality characteristics, attitude to debt, financial literacy and a set of demographic variables (age, gender, marital status, home ownership, educational attainment) which act as controls. To explore the factors associated with the decision to adopt low- or high-risk debt management strategies during periods of financial difficulty, we now develop a set of hypotheses guided by the relevant existing literature presented above and below.

Attitude to debt

A key factor contributing to indebtedness that has been highlighted in the literature is an individual's attitude towards debt. Attitudes can be described as subjective tendencies to perform a given action expressed through the favourable or unfavourable appraisal of the action (Eagley and Chaiken, 1993). Attitude comprises of three underlying components: cognitive, affective and behavioural (Lutz, 1991). With regards to debt, the cognitive component includes an individual's knowledge, opinions, thoughts and beliefs about taking on debt. The affective component consists of emotions and sentiments elicited by getting into debt while the behavioural component refers to explicit behaviours towards debt – i.e., recourse to credit. Research shows that a positive attitude to debt is associated with credit use (Cosma and Pattarin, 2011; Wang, Lu and Malhotra, 2011). Similarly, individuals who report being uncomfortable with debt have been found to have considerably lower levels of debt even after controlling for relevant socioeconomic variables (Almenberg, Lusardi, Save-Soderbergh and Vestman, 2018). Further, Schooley and Worden (2010) report that households with a positive attitude to debt, who believe that it is acceptable to borrow money to fund holidays and other luxury items, were more

likely to take on debt than households with a negative attitude to debt. Research examining the factors associated with indebtedness in university students also finds a link between a tolerant attitude towards debt and high levels of debt (Davies and Lea, 1995; Warwick and Mansfield, 2000).

As it has been consistently demonstrated in the papers discussed above that a favourable attitude towards debt is associated with an increased propensity to take on debt, it seems plausible to assume that in a situation where one is struggling financially, then a positive attitude towards debt will result in a propensity to turn to further loans, credit cards and bank overdrafts to pay off existing loans, therefore accumulating even more debt, leading to the following hypothesis:

H1- A more positive attitude towards debt is positively associated with high-risk debt management choices.

Research exploring the role of personality traits on consumer indebtedness has identified several facets of the big five personality factors as important determinants of individual indebtedness, to which we now turn our attention.

Extraversion

There is evidence in the literature of an association between extraversion and debt and an increased likelihood on the reliance on credit cards (Brown and Taylor, 2014; Davey and George, 2011). Students who score high on extraversion have been reported to have a higher propensity to use overdrafts and to borrow from family (Harrison and Chudry, 2011). As taking on debt can be deemed a risky behaviour (especially as non-payment can result in an endless cycle of debt), these findings are plausible given previous research linking extraversion and a preference for risky behaviours. In addition, there have been reports that extraverted individuals prefer their leisure time to be filled with social interaction and physical activity and have a tendency towards extravagant lifestyle decisions which are likely to incur additional costs that increase the tendency to borrow (Furnham, 1981; McClure, 1984; McManus and Furnham, 2006; Davey and George, 2011). Therefore, it seems likely that extraverted individuals will seek out credit to achieve their social goals.

Given the consistent findings of an association between extraversion and risk taking in several domains, it can be presumed that extraverted individuals are likely to make risky financial decisions and seek out credit even in situations where they are struggling financially, and therefore we propose the following:

H2- Extraversion is positively associated with higher-risk debt management choices.

Neuroticism

The current literature is rather mixed regarding the role of neuroticism on indebtedness. There is evidence that emotional instability (i.e., high neuroticism) strongly predicts indebtedness (Nyhus and Webley, 2001). This may be explained by findings of an increased likelihood that individuals who score high on neuroticism to make impulsive purchases which could result in indebtedness (Youn and Faber, 2000; Dittmar, 2005; Brougham, Jacobs-Lawson, Hershey and Trujillo, 2011). It has been suggested that this is linked to the mood repair hypothesis whereby impulsive spending may be considered as a mood management strategy for emotionally unstable individuals, bringing them some gratification (Youn and Faber, 2000). Conversely, neuroticism has been found to be unrelated to having unsecured debt such as credit card debt (Yang and Lester, 2014; Brown and Taylor, 2014). A possible explanation of this finding is that individuals high on neuroticism may find the prospect of taking on debt too anxiety-inducing and so they avoid the use of credit (Yang and Lester, 2014).

Although the literature regarding the relationship between neuroticism and the propensity to seek out credit is rather mixed, in the present context, we expect those high on neuroticism to be unable to cope with a difficult financial situation and are likely to panic and endorse ill-considered strategies such as taking out more credit and ignoring the situation. We therefore propose the following hypothesis:

H3- Neuroticism is positively associated with high-risk debt management choices.

Conscientiousness

Conscientiousness has also been explored in relation to consumer indebtedness. It has been suggested that individuals who are highly conscientious have good money-management skills and therefore exercise greater levels of financial self-control (Donnelly, Iyer and Howell, 2012). Higher conscientiousness has consistently been found to be associated with less debt (Daly et al., 2010; Yang and Lester, 2014; Brown and Taylor, 2014). Conscientiousness has also been found to be a primary determinant of debt repayment behaviour (Ozsahin, Yurur and Coskun, 2018). Given the finding of an association between conscientiousness and high financial self-control (Donnelly et al., 2012), it can be assumed that during periods of financial difficulty, conscientious individuals will avoid decisions that involve seeking more credit to deal with their existing debt. We propose the following hypothesis:

H4 - Conscientiousness is negatively associated with high-risk debt management choices.

Self-esteem

Self-esteem, defined as “a subjective evaluation based on feedback received from others concerning behaviour, appearance and other personal traits” (Grable, Britt and Webb, 2008, p.8), is another variable that has been explored in relation to financial risk taking. Self-esteem has been found to be positively associated with financial risk tolerance (Grable and Joo, 2004; Montford and Goldsmith, 2016). It has been suggested that self-esteem equips individuals with more cognitive resources at their disposal to deal with challenging situations (Caste and Burke, 2002), which may explain this relationship. In addition, individuals with high self-esteem generally report feelings of high self-worth (Brown and Marshal, 2001) and can confront problems and respond to failure using strategies that support their feelings of high self-value (Yelsma and Yelsma, 1998; Brown and Marshall, 2001).

There is evidence in the literature that self-esteem is negatively associated with consumer indebtedness (Tokunaga, 1983; Lange and Byrd, 1998; Caputo, 2012; Matos, Vieira, Bonfanti and Mette, 2019). However, due to the cross-sectional designs of these studies, causation cannot be inferred, and it remains unclear whether lower self-esteem causes people to accumulate more debt, in which case individuals with low self-esteem may seek credit to improve their self-worth/keep up with perceived ideals, or whether being in debt causes individuals to have low self-esteem as a result of a perceived inability to manage their finances. A recent finding that the relationship between self-esteem and indebtedness was mediated by materialism, defined as the importance of acquiring and owning material goods (Richins, 2004), seems to support the former view (Matos et al., 2019). This result suggests that individuals with low self-esteem will make innovative purchases to improve their self-image.

Individuals with high self-esteem are generally able to confront problems and respond to failure using effective strategies and have more cognitive resources at their disposal to deal with challenging situations (Brown and Marshall, 2001; Caste and Burke, 2002). We assume that during periods of financial difficulty, people with high self-esteem will be able to take control of the situation and use sensible strategies to cope with their existing debts. In addition, Krueger and Dickson (1994) argue that the relationship between self-esteem and financial risk-taking is situation specific, such that self-esteem will be negatively related to disadvantageous situations and positively related to advantageous situations. Deciding to accumulate more debt in a situation where one is already struggling with loans can be deemed disadvantageous. We therefore propose the following hypothesis:

H5 - Self-esteem is negatively associated with high-risk debt management choices.

Impulsivity

Impulsivity, characterised by deficits in self-control, is often expressed through a lack of self-discipline, self-regulation or sensitivity to instantaneous reward (Moeller, Barratt, Dougherty, Schmitz, and Swan, 2001; Strayhorn, 2002). Impulsive actions are spontaneous, performed without prudence and with disregard to their consequences, risky and often culminating in detrimental outcomes (Barratt, 1983, 1985; Dickman, 1990; Eysenck and Eysenck, 1977, 1978; Green, Fristoe, and Myerson, 1994; Jaspers, 1963). Individuals who are low on impulsivity with high levels of self-control have been found to have a higher likelihood of saving more and spending less money (Baumeister, 2002; Romal and Kaplan, 1995), and they are less likely to engage in impulsive spending (Strayhorn, 2002).

Impulsivity has been found to be a strong predictor of consumer indebtedness (Ladas, Ferguson, Aickelin and Garibaldi, 2015), with impulsive individuals more likely to take on debt to finance consumption (Ottaviani and Vandone, 2011) and to have high credit card balances (Limerick and Peltier, 2014). The association between impulsivity and debt has been attributed to the concept of hyperbolic discounting, where individuals methodically overvalue immediate rewards and benefits and undervalue future ones. The hyperbolic discount effect encourages individuals to opt for immediate purchases and take on more credit, a decision that often overrides the rational judgement that one may be taking out an unsustainable level of debt in relation to future income (Ottaviani and Vandone, 2011). This effect explains why some individuals opt for solutions that elicit immediate gratification at a future cost such as “buy now, pay later” schemes. This also explains evidence for an association between impulsivity and a higher propensity to accumulate debt, particularly unsecured debt (Watson, 2009; Anderloni, Bacchiocchi and Vandone, 2012; Anderloni and Vandone, 2011; Henegar et al.,2013). It is reasonable to assume that an impulsive individual’s preference for unsecured debt such as credit cards rather than secured debt such as mortgages stems from the fact that secured debt affects long term decisions, which is incongruent with impulsive behaviour that favours the short-term benefits afforded by secured debt (Ladas et al., 2015). In general, impulsive individuals adopt impatient and myopic behaviours which limit their awareness of the consequences of their spending decisions for the sustainability of their debts (Meier and Sprenger, 2007; 2010; Siemens, 2007). It has been found that in comparison to individuals with high self-control, impulsive individuals overestimate the value of time intervals and as a result, discount the value of delayed rewards (Wittmann and Paulus, 2008) and have lower sensitivity to the negative consequences of their decisions (Potts, George, Martin and Barratt, 2006).

As discussed above, impulsive individuals have a higher propensity to accumulate debt (Watson, 2009; Anderloni et al., 2012), and it therefore follows that we can assume that during periods of financial

difficulty, impulsive individuals will resort to taking out more credit to deal with their existing debt. We propose the following hypothesis:

H6 - Impulsivity is positively associated with high-risk debt management choices.

Sensation seeking

Given the association between sensation seeking and the willingness to take physical, social and financial risks as discussed in Section 2, the role of sensation seeking in consumer indebtedness has also been explored. Tokunaga (1993) found an inverse relationship between sensation seeking and debt in a group of credit card holders experiencing debt problems. Similarly, Norvilitis et al. (2006) found sensation seeking not to be predictive of student debt. Another study, however, found sensation seeking to be related to credit card debt (Wang et al., 2011).

Although the findings are mixed regarding the relationship between sensation seeking and consumer indebtedness, it has consistently been found to be associated with the tendency to engage in risky behaviours. Based on this, we posit that individuals who score high in sensation seeking will have an increased propensity to adopt risky debt management choices during periods of financial difficulty and we therefore propose the following hypothesis:

H7 - Sensation seeking is positively associated with high-risk debt management choices.

The locus of control

Another factor that has been linked to indebtedness is the locus of control; defined as an individual's perception of his/her ability to control their immediate environment and how well people believe that they are in control of their own lives (Rotter, 1966). People with an internal locus of control feel that future events are determined by their own abilities and that they are responsible for the course of events, whereas individuals with an external locus of control are less self-confident and attribute future events to external factors which are often dependent on luck and fate (Fournier and Jeanrie, 1999). There is evidence of an association between the locus of control and indebtedness; individuals with high credit card debts and a favourable attitude towards credit have been found to have an external locus of control (Livingstone and Lunt, 1992; Tokunaga, 1993; Davies and lea, 1995; DeSarbo and Edwards, 1996; Joo, Grable and Bagwell, 2003). This has been attributed to those with an external locus of control being less independent and less confident in their abilities (Pinto, Mansfield and Parente, 2004). However, this effect does not consistently emerge as other studies report no relationship between the locus of control and indebtedness (e.g., Lea, Webley and Walker, 1995; Pinto

et al., 2004; Cosma and Pattarin, 2011). Contradictory findings on the association between an external locus of control and a favourable attitude towards credit were provided by Wang, Chen and Wang (2008), who found that individuals with an external locus of control are less likely to use or consider taking out a home mortgage loan. Given that securing a home mortgage loan is dependent on the ability to have a stable long-term income, it has been suggested that in comparison to individuals with an internal locus of control, those with an external locus of control may lack confidence in their long term earning potential and may worry more about the unpredictable financial future, and are therefore less likely to prefer loans (Wang et al., 2008).

Although there is evidence linking an external locus of control with a favourable attitude towards credit and higher credit card debt (DeSarbo and Edwards, 1996; Davies and Lea, 1995), the finding that those with an external locus of control are less likely to take on long-term loans (Wang et al., 2008) suggests an inability to cope with longer term periods of uncertainty. This is supported by findings that individuals with an external locus of control have a lower tolerance of ambiguity (Judge, Thoresen, Pucik and Welbourne, 1999). It therefore seems reasonable to assume that during periods of financial uncertainty, where individuals are struggling with mounting debts, those with an external locus of control may be more risk averse and less confident to take on more debt. We propose the following hypothesis:

H8 - An external locus of control is negatively associated with high-risk debt management choices.

Financial literacy

A growing strand of the literature has focused on the role of financial literacy on consumer indebtedness. Financial literacy has been described as “a combination of conscientiousness, knowledge, skills, attitudes and behaviours that are necessary to make sound financial decisions and ultimately achieve individual financial well-being” (Organisation for Economic Cooperation and Development; OECD, 2015). There is strong evidence in recent studies suggesting that financial literacy is associated with positive financial behaviour. Lusardi and de Bassa Scheresberg (2013) found good numeracy skills and understanding of basic financial concepts to be strongly negatively associated with high-cost borrowing, even after controlling for socio-demographic variables (i.e., age, income, and education). Financial literacy has also been found to be related to saving and wealth accumulation that confer protection against incurring debts (Birkenmaier, Sherraden and Curley, 2012; Donnelly et al., 2012). A body of research has found low levels of financial literacy to be correlated with poor financial decisions and outcomes including debt accumulation and a higher risk of indebtedness (Stango and Zinman, 2009; Lusardi, Mitchell and Curto, 2010; Sevim, Temizel and Sayılır, 2012; Disney

and Gathergood, 2013). It has been argued that low levels of financial literacy result in a tendency to underestimate the cost of credit, which places individuals at a higher risk of indebtedness (Disney and Gathergood, 2013), with research by Lusardi and Tufano (2015) corroborating this. In their study, Lusardi and Tufano found that individuals with low financial literacy had no understanding of how credit cards work, such as the concept of an annual percentage rate (APR), were unable to calculate the costs involved, and were therefore likely to take on high cost credit, incurring greater fees. Similarly, individuals with lower levels of financial literacy have been found to have costly mortgages (Moore, 2003) and to be less likely to refinance their mortgages during a period of falling interest rates (Campbell, 2006). In explaining consumer indebtedness, financial knowledge has been found to be critical, having emerged as the strongest predictor of indebtedness when considered alongside demographic and personality variables (Norvilitis et al., 2006).

Given the association between low financial literacy and the tendency to under-estimate the cost of credit highlighted above, it is expected that individuals with poor financial literacy will make bad financial decisions while experiencing financial difficulty. It is reasonable to assume that low financial literacy will result in the tendency to seek out more credit to deal with existing debt due to a lack of understanding of accrued interest rates. The following hypothesis is therefore proposed:

H9- Higher financial literacy is negatively associated with high-risk debt management choices.

The role of emotions

While much research exists investigating the influence of psychological and personality variables on consumer indebtedness, there has been relatively little attention paid to the role of emotions. This is somewhat surprising given that underlying negative emotions have been implicated in the association found between compulsive buying and indebtedness observed in individuals with low self-esteem and those who score high on neuroticism (O'Guinn and Faber, 1989; Youn and Faber, 2000). Debt accumulation is a risky undertaking and in line with the "mood repair" hypothesis (Isen, 1984), individuals experiencing negative emotions may be more risk tolerant and willing to take on debt as a means of engaging in activities to improve their mood. The finding that sad individuals are inclined to spend excessively in order to cheer themselves up, which may lead to indebtedness, lends credence to this view (Cryder, Lerner, Gross and Dahl, 2008).

Some studies have investigated the role of emotions on debt management strategies and the findings are mixed. Shahrabani (2012) examined the role of emotions on an individual's intent to control a personal budget. Budgeting has been described as an effective strategy for managing one's personal finances to avoid debt accumulation (Lunt and Livingstone, 1991). It has been found that experiencing

negative emotions such as fear, anger and nervousness, is positively associated with the intention to control a personal budget (Shahrabani, 2012). It was suggested that these findings are in accordance with the feelings-as-information model, in which negative affective states are an indication of a problem in one's circumstances, prompting one to engage in detail-oriented thinking and to use effective solutions to deal with the situation (Shahrabani, 2012). Many individuals "deal with" indebtedness by burying their heads in the sand, adopting what has been termed the "ostrich effect", where individuals ignore mounting debts by avoiding all information associated with it. There is evidence in the literature that negative emotions such as sadness, anxiety and stress as a result of mounting debts is associated with this effect (Custers, 2015).

As highlighted above, there are contradictory findings on the role of negative emotions on debt management strategies with evidence of an association between negative emotions with both sensible and risky debt management strategies. Nonetheless, negative emotions have been linked to an increased propensity to accumulate debt as a means of repairing one's mood (Cryder et al., 2008). There is also evidence that individuals experiencing negative emotions tend to become hastier, risk oriented and are prone to gambling (Peck, 1986; Pezza Leith and Baumeister, 1996). In the present context, we assume that the difficult financial situation may evoke emotional distress in individuals experiencing negative emotions which may promote the endorsement of ill-thought-out and impulsive strategies such as ignoring the situation or using existing credit cards to manage their debt. We therefore propose the following hypothesis:

H10- Negative emotions are positively associated with high-risk debt management choices.

There is relatively little evidence in the literature for the role of positive emotions on consumer indebtedness. In the absence of such evidence, we turn to the literature reviewed above on the role of positive emotions on financial risk tolerance where positive emotions have been linked to both risk tolerant and risk averse financial decision-making. In line with the mood maintenance hypothesis, positive emotions promote less risk tolerance to preserve one's good mood by preventing losses. On the other hand, positive emotions can encourage risk taking as a result of a positive risk assessment of a given situation, in line with the affective generalisation theory. In the present context, we speculate that the experience of positive emotions may reflect optimism and individual control over the difficult financial situation. Individuals experiencing positive emotions may be reluctant to adopt risky strategies that could lead to further indebtedness and undermine their positive mood and in line with the mood maintenance hypothesis, we therefore propose the following hypothesis:

H11- Positive emotions are negatively associated with high-risk debt management choices.

4. Data and Methodology

Participants for the study were recruited by Prolific who hosted our 25-minute survey on their online platform. Participants were asked a range of questions under several headings (demographics, personality traits, locus of control, self-esteem, impulsivity, sensation seeking, attitude to debt, emotions towards life, financial literacy). Participants were also required to provide detailed open-ended responses to six hypothetical debt-related scenarios. The data were collected in March 2020.

Measures

All independent variables were measured using scale items obtained from previous research, as outlined below. See Appendix 1 for details of all measures and their respective items.

Emotions

To measure positive and negative emotions, we used the Positive and Negative Affect Scale (PANAS; Watson, Clark and Tellegen, 1988; 1994). The PANAS is made up of 10 positive emotion items (e.g., enthusiastic, inspired, excited) and 10 negative items (e.g., upset, distressed, afraid). Respondents were asked to indicate to what extent they generally experience each emotion on a 1 – 5 scale (1 = very slightly/not at all, 5 = Extremely/always).

Self-esteem

The Rosenberg self-esteem scale (RSES; Rosenberg, 1965) was used to assess self-esteem. The scale comprises 10 items made up of 5 positively worded statements (e.g., *I am able to do things as well as most other people*) and 5 negatively worded statements (e.g., *All in all, I am inclined to feel that I am a failure*) that reflect positive and negative evaluations of the self. Respondents were asked to indicate on a 5-point scale (1 = strongly disagree, 5 = strongly agree) to what extent they agreed with the statements. A global self-esteem score was calculated by summing all scores, with scores ranging along a continuum from low self-esteem to high self- esteem.

Sensation seeking

Sensation seeking was assessed using five items from Arnett Inventory of Sensation Seeking (AISS) developed by Arnett (1994), adapted from Grable and Joo (2004). It includes questions such as *I think it is fun and exciting to perform or speak before a group*. Respondents rated their level of agreement with the statements on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Scores were summed with higher scores reflecting greater willingness to engage in sensation seeking behaviour.

Impulsivity

To measure impulsivity, we used the 13- item Abbreviated Impulsiveness Scale (ABIS; Coutlee, Politzer, Hoyle and Huettel, 2014). These items measured three underlying impulsivity constructs; non-planning: 4 items (e.g., *I plan tasks carefully*), motor: 4 items (e.g., *I act on the spur of the moment*) and attentional impulsivity: 5 items (e.g., *I don't pay attention*). Respondents answered on a 5-point Likert scale their level of agreement with the statements (1 = strongly disagree, 5 = strongly agree). Scores were summed with higher scores indicative of greater impulsivity.

Locus of control

The locus of control was measured using Lumpkin's (1985) 6-item locus of control scale comprising three statements framed towards an external locus (e.g., *Getting a good job depends mainly on being in the right place at the right time*) and three towards an internal locus (e.g., *What happens to me is my own doing*). Respondents indicated the extent to which they agreed with these statements on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). A locus of control score was obtained by summing the scores on all items, and the higher the score, the more external (less internal) was the locus of control.

Personality traits

Three personality factors: conscientiousness, extraversion and neuroticism, measured using the Big Five Inventory (John & Srivastava, 1999), were of interest in this study. Nine statements related to conscientiousness (e.g., *I see myself as someone who does things efficiently*), eight to extraversion (e.g., *I see myself as someone who is outgoing and sociable*) and eight to neuroticism (*I see myself as someone who is depressed, blue*). All questions elicited an expression of agreement with these statements on a 5-point Likert scale. The level of agreement was coded 1 = strongly disagree, 5 = strongly agree. Scores were summed, and higher scores reflect a stronger personality trait.

Attitude towards debt

Attitude towards debt was assessed using a 12-item questionnaire adapted from Lea, Webley and Walker (1995). The items measured the three underlying components of attitude with five items relating to cognitive attitude (e.g., *Taking out a loan is a good thing as it allows you to make your life better),* three to emotional (e.g., *I like having a credit card*) and four to behavioural (e.g., *It is better to go into debt than to let children go without Christmas presents*). Respondents indicated on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) the extent to which they agreed with the

statements. Scores on the items are aggregated, with higher numbers indicating a more positive attitude towards debt.

Financial literacy

Financial literacy was measured using a 36-item questionnaire to evaluate financial attitude, financial behaviour and financial knowledge. Financial attitude was assessed using a 13-item instrument adapted from Parrotta and Johnson (1998), which appraised an individual's financial management. Participants responded on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) the extent to which they agreed or disagreed with the statements presented to them. A 13-item financial behaviour scale adapted from Shockey (2002), O'Neil and Xiao (2012) and OECD (2013) was used to assess individuals' financial behaviour through questions that enquire about money saving and the degree of control an individual has over their expenses. Participants were asked to respond on a 5-point Likert scale (1 = never, 5 = always), with higher scores indicating better financial management. Financial knowledge was measured using ten questions adapted from Van Rooij, Lusardi and Alessie (2011), Klapper, Lusardi and Panos (2013); OECD (2013) and the National Financial Capability Study (NFCS. 2013). Five questions measured basic financial abilities and consisted of questions linked to tax rates and inflation while five questions assessed knowledge of financial instruments and concepts such stocks, bonds and risk diversification. For each question, a score of 1 was assigned for a correct answer while a score of 0 was given to incorrect answers.

The dependent variable

The dependent variable (high-risk or sensible debt management strategies) was developed specifically for this study. Participants were given six hypothetical debt-related scenarios (see Appendix 2). In each scenario, respondents were asked to imagine themselves in a situation where they were having trouble paying off their existing debt (i.e., credit cards, loans, mortgages/rent) due to adverse life events such as the loss of a job or illness. They were then asked to provide detailed answers on how they would deal with their existing debt in each case. Participants' responses were coded into the following themes as shown with illustrative examples of actual answers in Table 1:

(1) borrow from friends and family
(2) reduce expenditure or sell assets to raise money
(3) use a credit card, get a loan or bank overdraft
(4) seek advice from debt advisory firms or from the Citizen's Advice Bureau
(5) negotiate with creditors
(6) other.

Responses were then further coded into three categories: low-risk, mid-risk and high-risk debt management strategies. Debt advisory firms propagate several strategies for dealing with debt during periods of financial difficulty. Emphasis has been placed on strategies such as negotiating with creditors, seeking financial advice and drawing up a budget as effective debt management strategies that ease the strain associated with problem debt. Seeking out more credit and ignoring debts have been deemed as risky strategies that could result in over-indebtedness due to accrued interest rates and late payment charges. Although one may turn to friends and family for help to pay off debt during periods of financial difficulty, it is generally advised that this could put a strain on relationships in the long run and individuals run the risk of becoming permanently dependent on others to pick up the pieces in times of difficulty. We therefore classified borrowing from friends and family as being of medium risk since they are likely to be more lenient regarding repayment dates and would usually not charge interest.[4]

Responses under themes 2, 4 and 5 were classified as low risk and sensible debt management strategies while responses under theme 1 were deemed as mid-risk. Responses under theme 3 were considered as high-risk debt management strategies. Responses under theme 6 included responses that indicated an inability to cope with the situation such as “Panic, I'm unsure what I would do if I'm honest”. We made the decision to classify such responses as high risk on the grounds that not knowing what to do is as bad as ignoring the situation. Low-, mid- and high-risk strategies were assigned a score of 0, 1 and 2, respectively. The scores were aggregated over the six scenarios into a single scale which ranged from 0-12 where higher scores indicate higher-risk debt management strategies.

[4] Borrowing from friends and family would be transferring risk from one set of individuals to another, and the latter are not likely to be able to pool the risk in the way that a financial intermediary could. Therefore, it could even be argued that doing so is irresponsible. Nonetheless, from the perspective of the person having difficulties in managing their debts, it is still the case that borrowing informally would be less risky than further borrowing from a bank or credit card company. We should also note that the possible solutions to debt problems might be complementary to some extent. For instance, taking advice from an expert is unlikely to solve the issue in of itself, but hopefully should lead to the most appropriate course of action being taken for that individual, with suggestions on how best to reduce the debt burden or move to the least risky loans with the lowest interest rates.

Control variables:

The extant literature on the determinants of consumer indebtedness has identified several demographic variables associated with indebtedness, which were controlled for in the model.

Age

Younger people have been reported to be more likely to use credit and to have debt problems (Berthoud and Kempson, 1990; Livingstone and Lunt, 1992; Drentea, 2000; Drentea & Lavrakas, 2000). This has been attributed to increased material acquisition in this age group as younger people build their lives while typically not having high earnings at this stage (Drentea, 2000).

Marital Status

Married individuals have been found to hold more mortgage, instalment and credit card debt than single individuals (Yilmazer and DeVaney, 2005; Lee, Lown and Sharpe, 2007). Despite this, married and cohabiting individuals have been found to have fewer debt problems than those who are single or divorced (Lusardi and Tufano, 2009; Oksanen, Aaltonen and Rantala, 2015). This has been attributed to income pooling (Schooley and Worden, 1996; Hinz et al., 1997) and evidence citing marital status as an important contributing factor to good financial management practices that may protect against indebtedness such as having a budget, planned spending and regular saving (Hayhoe et al., 2000).

Gender

The findings on the influence of gender on indebtedness are rather mixed. There is evidence in the literature that men have a higher propensity to accumulate debt than women (Wang et al., 2011; Anderson and Nevitte, 2006), with findings that women are more likely to take steps to control their finances through budgeting (Henry, Weber and Yarbrough, 2001; Tang, Kim and Tang, 2002). It has been suggested that the high creditworthiness afforded by men's higher incomes may explain their higher likelihood of credit use (van Staveren, 2002). Other studies, however, have found that women have higher levels of debt and tend to use more credit cards than do men (Davies and Lea, 1995; Armstrong and Craven, 1994).

Education

There is evidence of an association between higher educational levels and the propensity to accumulate debt (Nyhus and Webley, 2001). Educational attainment has been shown to have an

influence on occupational trajectories and income (Wolla and Sullivan, 2017), and therefore the link between education and indebtedness may be partly mediated by income. A few studies have found that individuals with higher incomes tend to borrow more and therefore have more debt than those on a lower income (Katona, 1975; Livingstone and Lunt, 1992; Wang et al., 2011). It has also been suggested that those on a higher income accumulate debt due to a tendency to overestimate their ability to repay the debt (Livingstone and Lunt, 1992; Baek and Hong, 2004).

Homeownership

Homeownership has been found to be related to good fiscal responsibility and planning (Jayathirtha & Fox, 1996). This may be attributed to the need for homeowners to be financially responsible to be able to obtain and payoff mortgage debt. Strict criteria for mortgage approvals mean that applications from individuals who are over-indebted or with poor credit scores are likely to be rejected. Homeownership has also been found to be related to saving behaviour, with homeowners more likely to save in comparison to those who do not own property (Hefferan, 1982; Davis & Schumm, 1987; Chang, 1995).

Preliminary data analysis and model specification

The data were entered into SPSS statistics (version 25) where they were screened to check for out-of-range values, outliers and missing values as well as an assessment of their distributional properties. This led to the removal of seven outliers and 14 straight-liners, which resulted in a final sample of 285 respondents; the sample demographics are displayed in Table 2. Note that we combined categories together where feasible for presentational ease and to simplify the cross-tabulation of the demographics with the debt management strategy risk levels reported below (e.g., age is combined into two ranges: 18-39 and 40+).

Table 3 presents the means, standard deviations and Cronbach's alphas for all scale measures. Cronbach's alpha is not reported for financial knowledge, which was measured using multiple choice questions with right or wrong answers. Cronbach's alpha values for most scale measures exceeds 0.7, an indication of good internal consistency (George and Mallery, 2003) and the total score on the AISS was derived by summing the scores on items 2, 3 and 4 only to achieve a higher level of consistency.

Significant Shapiro-Wilk tests established that a large proportion of the data violated the assumption of normality. Given this and the ordered categories of the dependent variable (low, mid and high-risk financial decisions), ordinal regression analysis via a logit model, estimated via maximum likelihood, was used to capture the association between the independent variables and risk behaviour. Our main

model specifications all take the same general form as follows, with all variables as described above and explained in detail in Appendix 1:

Prob. Calculated Debt-risk$_i$ = α' + + β_1*Fin_literacy*$_i$ + β_2*PosAffect*$_i$ + β_3*NegAffect*$_i$ + β_4*Self_esteem*$_i$ + β_5*Locus_control*$_i$ + β_6*Debt_attitude*$_i$ + β_7*Impuslivity*$_i$ + β_8*Sensation_seeking*$_i$ + β_k*Personality_traits*$_{ki}$ $+\gamma_i{}'X_i + \epsilon_i$ (1)

where , α' is a vector of cut-off points estimated in ordered logit models[5] (constant terms); *Personality_traits*$_{ki}$ is a set of Likert scores measuring the respondent's personality traits (as discussed in more detail above); *Fin_literacy*$_i$ is an aggregate score variable; *PosAffect*$_i$ is an aggregate score of the PANAS positive emotions measures; *NegAffect*$_i$ is an aggregate score of the PANAS negative emotions measures; *Self_esteem*$_i$, *Locus_control*$_i$, *Debt_attitude*$_i$, *Impuslivity*$_i$, and *Sensation_seeking*$_i$ are each aggregate score variables; ϵ_i is the i.i.d. standard normal error term; X_i is a vector of control variables (covariates) for age, gender, marital status, home ownership, and education.

The effects of the independent variables are presented as the regression coefficients (β), odd ratios and their 95% confidence intervals. The odd ratios indicate the margins for which a unit increase (or decrease) in an independent variable is associated with an increase in the odds of making high-risk debt-management choices while other variables in the model are held constant. We also report the statistical significance of the models and key measures of overall goodness of fit (Pearson and Deviance goodness of fit tests, likelihood-ratio tests and Cox and Snell measure of R^2).

5. Results

Table 4 shows summary statistics for the distribution of debt risk scores for the sociodemographic variables when considered individually. Panels A and B summarise the numbers and percentages of respondents in each risk band separated by gender and by age, respectively. It appears that there is no difference in debt management risk categories by gender, but young people are far more likely to adopt a high-risk strategy (49% for 18-39-year-olds versus 26% for 40+). Panels C and D summarise low, mid and high-risk debt management scores separately for individuals who are married/living with partner versus single individuals and those who own their own property versus those who do not. These groups are roughly equally represented in the sample and we find that single individuals adopt more high-risk debt management choices than those who are married/ living with partner (46% high-risk versus 35%, respectively). We also find that those who do not own their property adopt more high-risk debt management choices that property owners, although both the marriage and property

[5] The estimated cut-off points are not reported for brevity.

ownership effects may be mediated by age, since single people and renters are likely on average to be younger than married homeowners. The multi-variable models discussed now should help us to tease out the separate effects of each of these factors.

Table 5 moves on to present our main results, which are of the ordinal regression analyses used to model the associations between the various explanatory variables and high-risk debt management choices. A total of seven different models are estimated, each employing the same dependent variable but with varying combinations of the independent variables.

In Model 1, where the background variables are entered without the control variables, attitude to debt, neuroticism and the locus of control make significant contributions with the expected signs supporting hypotheses 1, 3 and 8. Neuroticism and attitude to debt have significant positive associations with the endorsement of high-risk debt management choices – that is, with higher neuroticism or attitude to debt scores, the odds of adopting high-risk debt management choices become greater, ceteris paribus. An external locus of control has a significant negative association with the endorsement of high-risk debt management choices and hence the odds of adopting high-risk debt management choices is greater with lower external locus of control scores, *ceteris paribus*. Contrary to expectations, we find that hypotheses 2, 4, 5, 6 and 7 regarding the relevance of extraversion, conscientiousness, self-esteem, impulsivity and sensation-seeking are not supported as they make no significant contributions, meaning that these personality variables were not found to have any bearing on the strategy individuals adopt to manage their debt.

Additionally, contrary to expectations, hypothesis 9 is not supported as we find that financial literacy is not significant, indicating that the debt management strategy an individual opts for to manage their loans was not found to be contingent on their understanding of key financial concepts. There is also no support for hypotheses 10 and 11 as neither the positive nor the negative aggregate emotions scale is significant in any of the specifications, indicating that when the PANAS data are aggregated, the approach an individual would select to deal with debt problems is not found to depend on their current emotional state.

Moving from left to the right in the table, control variables - age, marital status, gender, education and home ownership, are added to the model. With the exception of age, which renders neuroticism statistically insignificant when included in Model 2, the inclusion of the other control variables in Models 3 to 6 only slightly alters the magnitude and significance of the core variables such as attitude to debt and locus of control. When the control variables are included in the model individually, we find that being part of the younger age group (18-39 years) is associated with the adoption of high-risk debt management choices. We also find that marital status (married/civil partnership status) and

home ownership (own property) are associated with a decreased likelihood of adopting high-risk debt management choices. While these control variables are statistically significant when included individually with the background variables in Models 2, 3 and 6, when they are entered simultaneously with the background variables in model 7, age remains statistically significant while marital status and home ownership become statistically insignificant. In the final model, attitude to debt, locus of control and age (18-39 years) make statistically significant contributions. The Pseudo R^2 values across all models range from 0.062 to 0.120 which implies that the background variables explain 6.2% to 12% of the variance in debt management risk outcomes; these figures are in line with those reported in other studies for ordinal dependent variable models.

As a final piece of analysis, we repeated the ordinal regression analyses with individual emotions rather than aggregate positive and negative emotion scores.[6] We observe statistically significant relationships between the emotions "excited", "alert" and "guilty" and high-risk debt management choices. The results show a significant positive association between the positive emotion "excited" and high-risk debt management choices – that is, there is greater odds of adopting high-risk debt management choices with higher scores on the emotion "excited". We also find the negative emotion "guilty" and the positive emotion "alert" to be significantly negatively associated with high-risk debt management choices. With lower scores on the emotions "guilty" and "alert", the odds of adopting high-risk debt management choices is greater.

6. Discussion and Conclusions

This study has been one of the very first to explore the factors associated with the decision as to which type of approach to adopt when managing debts during periods of financial difficulty. We find, after controlling for a variety of socio-demographic variables, that a favourable attitude to debt and lesser external locus of control are associated with an increased likelihood of adopting high risk debt management choices to manage debt during periods of financial difficulty. Individuals with a favourable attitude to debt and lesser external locus of control (stronger internal locus of control) indicated a willingness to seek out more credit such as securing bank loans and the use of credit cards to pay off their existing loans when experiencing financial difficulty or to ignore the situation – these are risky debt management choices that are more likely than other strategies to culminate in the accrual of more debt.

The finding that those with a positive attitude to debt are credit seeking is consistent with that of previous studies which report a positive association between attitude to debt and credit use (e.g.,

[6] The results for individual emotions, which are quite voluminous, are not presented to conserve space.

Cosma & Pattarin, 2011; Wang et al., 2011). A positive attitude towards credit may stem from confidence in the ability to manage and repay one's debt, which is supported by findings that high income consumers hold more favourable attitudes towards credit card use than those on lower incomes (Slocum & Mathews, 1970; Mathews & Slocum, 1972). Our findings, however, make a new contribution by showing that those with a positive attitude to debt are tolerant of accruing more loans even during periods of difficulty where repayment of the debt is uncertain and in such circumstances the confidence may be unfounded.

While an external locus of control has been found to be associated with poor financial management (Busseri, Lefcourt and Kerton, 1998; Britt, Cumbie and Bell, 2013), we find that having less external locus of control (stronger internal) is associated with the adoption of high-risk debt management choices. This resonates with previous findings that people with an external locus of control, although usually credit seeking, may be risk averse during periods of uncertainty (Wang et al., 2008; Judge et al., 1999). Our findings are incongruent, however, with much of the body of evidence relating an internal locus of control to good financial behaviour and management (Danes, 1991; Danes and Rettig, 1993; Sumarwan and Hira, 1993; Shim et al., 2009). A stronger internal locus of control in a managerial context, however, has been linked to a greater ability to deal with stressful situations, prompting the adoption of several strategies including risk taking (Miller, Kets de Vries and Toulouse 1982). In the present context, the willingness of those with an internal locus of control to adopt risky debt management choices may reflect their appraisal of their current financial situation whereby individuals with a stronger internal locus of control, though in debt, may perceive their current financial situation as a temporary setback and may have (possibly undue) confidence in their ability to manage their debts in the long run. Many of the more responsible debt management strategies rely on some sort of support or advice from an external source, whereas individuals with an internal locus of control may tend to keep matters in their own hands, thereby potentially missing out on valuable support and guidance.

We also analysed the impact of individual emotions on the decision to adopt high risk debt management choices and find the emotions "excited", "guilty" and "alert" to be relevant. Our finding that individuals who report feeling excited endorse high-risk debt management strategies is in line with previous research reporting a positive association between excitement and financial risk-taking (Kuhnen & Knutson, 2011; Andrade, Odean & Lin, 2015). We find a significant negative association between the emotion of guilt and the endorsement of high-risk debt management choices. According to Lewis (2008, p. 748), the feeling of guilt is produced when "individuals evaluate their behaviour as failure but focus on the specific features or actions of the self that led to the failure", and the guilt is therefore directed to the cause of the failure rather than the self, consequently guilt leads to

corrective actions to repair failure (Lewis, 1971). The experience of guilt weighs heavily on the minds of individuals, prompting a change of circumstances to alleviate the feelings of guilt and to take action (Lindsay-Hartz, 1984). Yi and Baumgartner (2011) found strong feelings of guilt as a result of compulsive buying to be associated with the decision to reduce further impulse buying and a plan to make up for monetary loss. Applied to the present context, it is possible that indebtedness could invoke strong feelings of guilt in some individuals, with those experiencing guilt less likely to adopt risky financial decisions that could result in more debt. It therefore makes sense that individuals who are not experiencing guilt would endorse higher-risk debt management choices. We also found a significant negative association between the state of being "alert" and the endorsement of high-risk debt management choices. Alertness has been described as "a state of responsivity to both interoceptive and external stimuli" (Shapiro et al., 2006, p. 595). "Alert" individuals are attentive, able to concentrate, motivated and aware of their immediate environments. In the present context, "alertness" may reflect an individual's appraisal of the difficult financial situation with an awareness of effective debt management strategies as well as an understanding that endorsing risky strategies could result in further indebtedness. It is therefore plausible that individuals who are less "alert" selected risky debt management options to manage their debt.

We also investigated the influence of a set of control variables (age, gender, marital status, home ownership and education) on the preference for high-risk debt management choices and find that age, marital status and home ownership play a significant role. The younger age group's decision to adopt high risk debt management choices resonates with previous findings that younger people are more likely to use credit (Drentea, 2000; Drentea & Lavrakas,2000). We find that owning one's property and being married or living with a partner to be negatively associated with the decision to adopt high risk debt management choices. Home ownership is a long-term financial investment that comes with the risks of losing one's home and the equity that has been built if mortgage repayments are not made. This requires responsible financial management that could deter people from adopting risky debt management choices. Being married or living with a partner may deter individuals from adopting risky debt management choices as the consequences extend to their partners. This is supported by previous findings that married couples are less risk tolerant than single persons and less likely to invest in uncertain ventures (Barsky, Juster, Kimball and Shapiro, 1997; Grable and Lytton, 1998). However, when we also control for age, their effects become statistically insignificant and considerably smaller in magnitude, indicating that making sensible choices when dealing with unforeseen debt-related problems is an attribute that develops with maturity and life experience.

Our findings regarding the relevance of personality factors in determining how people deal with their debts have potentially important implications for organisations that support individuals facing

difficulties making debt repayments and indeed for those making loans in the first place. It is possible that when financial product providers are providing guidance on what loans are available and affordable, they could provide additional and tailored support to those who are most vulnerable. According to our analysis, these are in particular the young, the single, renters, those who are most comfortable with debts, and people with a tendency to neuroticism or feelings of guilt. By targeting messages to those groups in particular, it might be that they can be encouraged to take appropriate steps to deal with financial difficulties before they escalate into an unstoppable spiral of increasing debts and charges, ultimately leading to loss of possessions or even their homes.

Our findings also suggest, perhaps counterintuitively, that those with a stronger internal locus of control are more likely to endorse risky debt management strategies, and this seems to be linked with a confidence in their abilities to handle borrowing and being in an excited emotional state. For such groups, the standard proposal to aim to build emotional resilience among those affected is unlikely to target those who are most vulnerable. Instead, it would make greater sense to try to warn such groups of the dangers of not only taking on debt, but also of not keeping on top of the situation when things go wrong. Financial education and hard-hitting advertising, highlighting the potential problems that may occur when debt problems spiral out of control, could be valuable to counteract these effects.

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Figure 1: Conceptual Model

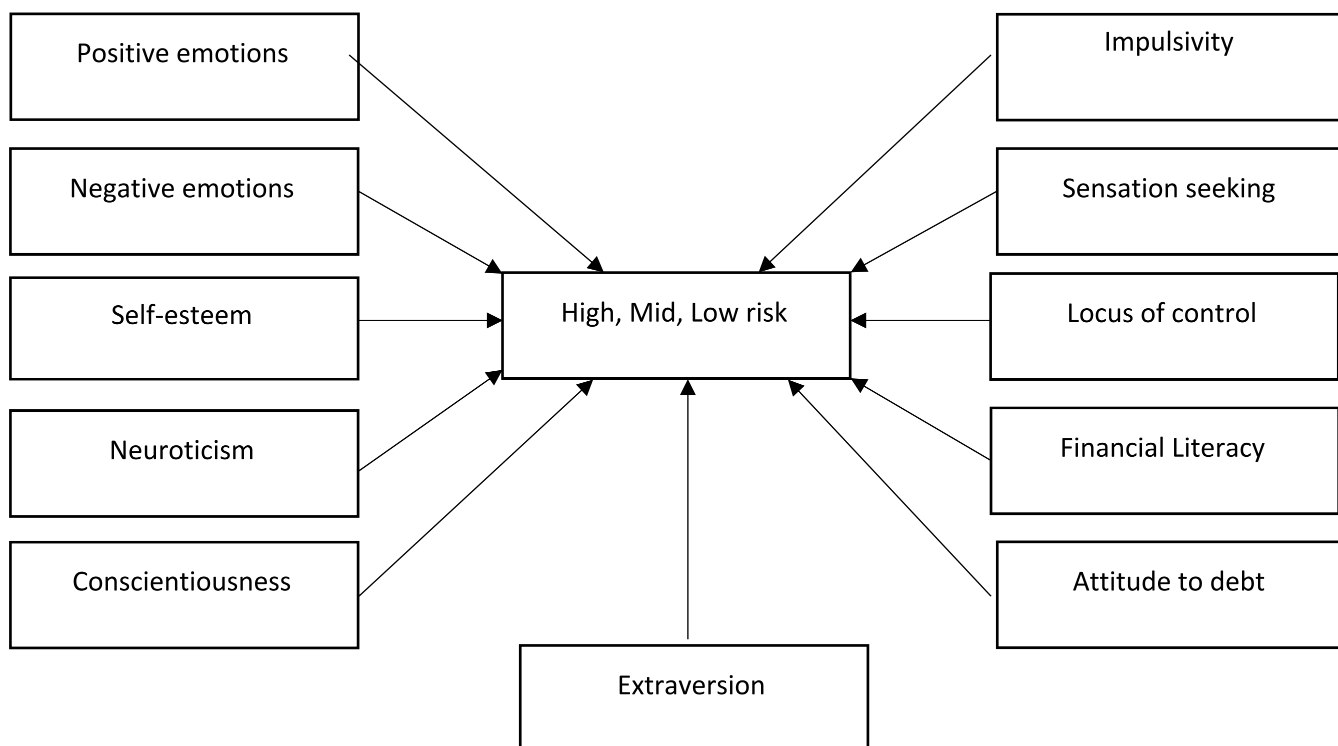

Table 1: Results of debt management strategies from qualitative survey

Theme	Illustrative evidence
Ask friends and family for a loan or gift (1)	"I would ask my family and friends to help me out" "Similarly, to the first situation I would approach my parents as they are financially stable. This way they would be able to provide me with a loan I could pay back eventually once I had recovered" "I would ask my family for help in order to cover the debt from my creditors" "Borrow money from parents/family and pay them back gradually"
Reduce expenditure, increase income or sell possessions (2)	"Cut out any expenses that you can live without such as getting takeaways or buying clothes. Look into changing your providers for essential bills such as gas and electric to cheaper options. Try to get a deal on fixing the roof" "Look at selling the stock through other means (e.g. ebay)" "Sell the things I don't need and work overtime" "I would cut down on all unnecessary expenditure, and just buy food and try to pay utility and housing bills and my debts"
External borrowing (e.g. credit card, bank loan or bank overdraft) (3)	"I would use credit card to pay off loan payment" "I'd have no choice but to get credit" "I would take out a loan to help make the payments" "I would take out a loan from the bank or set up a credit card under my name and use that to pay the mortgage, and then when my partner went back to work, we could start paying off the credit card together"
Take advice from an IFA or citizens' advice (4)	"I would speak to citizens advice to find out what my options were" "I would try to get help from charities which give advice on consolidating debt in these situations" "I would seek advice and guidance from the citizens advice bureau" "I would seek financial advice in order to see whether I would need to liquidate my business in order to cover the cost of the mortgage loan"
Negotiate with creditor (5)	"I would contact the bank and see what they can do to help me pay less or have a break while I sort myself out". "I would contact the company and ask them if we could come to some arrangement" "Try to negotiate a lower loan repayment plan and put up the money that you do currently have" "Call the bank and ask to negotiate a later repayment date or a lapse period of 1 months"

	“I would contact my creditors to see if they would accept other payment plans”
Other (6)	“I would have no idea what to do in this situation” “You are asking me impossible questions. I have absolutely no idea what I would do” “PANIC. I'm unsure what I would do if I'm honest” “There is nothing I can do. I'm not a miracle worker”

Table 2: Sample Demographics

Demographics		N	Percentage
Gender	Female	183	63.5%
	Male	102	36.5%
Age	18 – 39 years	180	62.8%
	40+ years	105	37.2%
Income	<50k	265	92.9%
	>50k	20	7.1%
Education	University degree	166	58.2%
	No university degree	119	41.8%
Marital status	Married/civil partnership	136	49.8%
	Not married	149	50.2%
Ethnicity	White British	241	84.6%
	Other ethnicity	44	15.4%
Own Property	Own property	134	48.4%
	Not own property	151	51.6%
Total sample			**285**

Table 3: Means, standard deviation and Cronbach's alpha for all scale measures

Measures	Mean	Std. dev	Cronbach's alpha
PANAS Positive emotions	21.26	6.92	.888
PANAS Negative emotions	20.28	7.65	.910
Neuroticism	24.00	7.13	.878
Conscientiousness	34.94	6.52	.877
Extraversion	23.28	6.49	.860
Lumpkin Locus of control scale	16.55	3.38	.627
Abbreviated Impulsiveness Scale (ABIS)	30.08	7.31	.839
Attitude to debt scale	27.21	6.60	.783
Rosenberg self-esteem scale	33.20	8.73	.925
Arnett Inventory of Sensation Seeking	9.90	2.71	.497
Financial Literacy			
Financial Behaviour	49.60	9.11	.871
Financial attitude	50.42	6.67	.818
Financial Knowledge	7.23	2.11	n/a

Table 4: Summary statistics of risk by demographic variables

Panel A: Summary statistics of risk by gender

	Female	Male	Total	Percentage Female	Percentage Male
Low	42	22	64	22.95%	21.56%
Mid	66	40	106	36.06%	39.22%
High	75	40	115	40.99%	39.22%
Total	183	102	285	100.00%	100.00%

Panel B: Summary statistics of risk by age-group

	18-39 years	40+ years	Total	Percentage 18-39 years	Percentage 40+ years
Low	30	34	64	16.67%	32.38%
Mid	62	44	106	34.44%	41.90%
High	88	27	115	48.89%	25.72%
Total	180	105	285	100.00%	100.00%

Panel C: Summary statistics of risk by marital status

	Married/civil partnership	Single	Total	Percentage Married/civil partnership	Percentage single
Low	40	24	64	29.43%	16.11%
Mid	49	57	106	36.02%	38.26%
High	47	68	115	34.56%	45.64%
Total	136	149	285	100.00%	100.00%

Panel D: Summary statistics of risk by homeownership

	Own property	Do not own property	Total	Percentage own property	Percentage Do not own property
Low	37	27	64	27.61%	17.88%
Mid	57	49	106	42.54%	32.45%
High	40	75	115	29.85%	49.67%
Total	134	151	285	100.00%	100.00%

Panel E: Summary statistics of risk by education

	University degree	No University degree	Total	Percentage university degree	Percentage No university degree
Low	38	26	64	22.89%	21.85%
Mid	68	38	106	40.96%	31.93%
High	60	55	115	36.15%	46.22%
Total	166	119	285	100.00%	100.00%

Table 5: Determinants of high-risk debt management choices: Results of ordinal logistic regression analyses

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
Dependent variable: Risk- high, mid, low	β	OR (CI95%)	β	OR (CI95%)	β	OR (CI95%)	β	OR (CI95%)	β	OR (CI95%)	β	OR (CI95%)	β	OR (CI95%)
Independent variables:														
Positive emotions	.005	1.005 (.962- 1.050)	.002	1.002 (.958 – 1.047)	.004	1.004 (.961 – 1.049)	.005	1.005 (.962 – 1.050)	.008	1.008 (.965 – 1.053)	.006	1.006 (.963 – 1.051)	.005	1.005 (.961 – 1.051)
Negative emotions	-.008	.992 (.953 - 1.032)	-.003	.997 (.958 – 1.038)	-.012	.997 (.949 – 1.029)	-.009	.991 (.952– 1.032)	-.007	.993 (.954– 1.034)	-.008	.992 (.953– 1.033)	-.004	.996 (.956– 1.037)
Self-esteem	-.005	.995 (.951 - 1.042)	-.012	.998 (.943 – 1.034)	-.003	.998 (.952 – 1.043)	-.005	.995 (.951 – 1.042)	-003	.997 (.952 – 1.044)	-.005	.995 (.950 – 1.042)	-.009	.991 (.946 – 1.038)
Attitude to debt	.032	1.033* (.995 - 1.072)	.040	1.041** (1.002– 1.080)	.036	1.041* (.998– 1.076)	.032	1.033* (.995– 1.072)	.034	1.035* (.997– 1.075)	.036	1.037* (.999– 1.076)	.044	1.045** (.999– 1.076)
Neuroticism	.053	1.054** (1.004 - 1.108)	.032	1.032 (.981– 1.086)	.055	1.032** (1.005– 1.110)	.054	1.055** (1.004– 1.110)	.052	1.054** (1.003– 1.107)	.050	1.052** (1.001– 1.105)	.034	1.034 (.982– 1.090)
Conscientiousness	-.028	.972 (.924 - 1.023)	-.009	.991 (.941 – 1.044)	-.017	.991 (.934 – 1.036)	-.028	.973 (.925 – 1.023)	-.030	.970 (.922 – 1.021)	-.011	.989 (.939 – 1.042)	-.001	.999 (.947 – 1.054)
Extraversion	-.002	.998 (.958 - 1.040)	.005	1.005 (.964 – 1.048)	.001	1.005 (.961 – 1.043)	-.002	.998 (.959 – 1.040)	.000	1.000 (.960– 1.042)	.002	1.002 (.961– 1.044)	-.009	1.009 (.968– 1.052)
Locus of control	-.105	.901*** (.832 - .974)	.098	.907** (.837– .982)	-.104	.907** (.833– .976)	-.104	.901** (.833– .975)	-.099	.906** (.836– .980)	-.098	.906** (.838– .981)	-.091	.913** (.842– .990)
Sensation seeking	.031	1.031 (946 - 1.124)	.005	1.005 (.920 – 1.098)	.024	1.005 (.939 – 1.117)	.031	1.031 (.946 – 1.124)	.030	1.030 (.945 – 1.123)	.025	1.026 (.940 – 1.119)	.002	1.002 (.917 – 1.096)
Impulsivity	-.019	.981 (.939 - 1.025)	-.015	.985 (.942 – 1.029)	-.012	.985	-.020	.981	-.020	.980	-.008	.992	-.008	.992

						(.945 – 1.033)		(.938 – 1.025)		(.938 – 1.024)		(.948 – 1.037)		(.948 – 1.038)
Financial Literacy	-.010	.990 (.973 - 1.007)	-.009	.991 (.974 – 1.008)	-.009	.991 (.974 – 1.008)	-.010	.990 (.973 – 1.007)	-.008	.992 (.974 – 1.009)	-.004	.996 (.978 – 1.013)	-.005	.995 (.977 – 1.013)
Covariates														
Age (18-39)			.931	2.536**** (1.530 -4.202)									.789	2.202*** (1.284 –3.774)
Marital status (Married/civil partnership)					-.560	.571** (.360 - .905)							-.337	.714 (.429– 1.189)
Gender							.048	1.005 (.649 – 1.698)					-.027	.973 (.596 – 1.588)
Education									-.230	.794 (.492 – 1.282)			-.223	.800 (.488 – 1.311)
Homeownership (Own property)											-.657	.518*** (.320– .838)	-.254	.775 (.442– 1.360)
Log-likelihood		591.317*		578.110***		584.663**		591.278ns		590.457*		584.153**		573.195***
Pearson		570.356ns		571.359ns		570.729ns		570.257ns		569.027ns		574.316ns		571.907ns
Deviance		591.317ns		578.110ns		585.663ns		591.278ns		590.457ns		584.153ns		573.195ns
Pseudo R2		0.062		0.105		0.081		0.062		0.065		0.085		0.120
N		285		285		285		285		285		285		285

*p < 0.1, **p < 0.05, ***p < 0.01, ****p < 0.001, ns = not significant

Appendix 1: Table of applied measures

INDEPENDENT VARIABLES	
Emotions: (PANAS; Watson, Clark & Tellegen, 1988; 1994).	*Interested (positive)* *Distressed (negative)* *Excited (positive)* *Upset (negative)* *Strong (positive)* *Guilty (negative)* *Scared (negative)* *Hostile (negative)* *Enthusiastic (positive)* *Proud (positive)* *Irritable (negative)* *Alert (positive)* *Ashamed (negative)* *Inspired (positive)* *Nervous (negative)* *Determined (positive)* *Attentive (positive)* *Jittery (negative)* *Active (positive)* *Afraid (negative)*
Self-esteem: *(RSES; Rosenberg, 1965).*	*I take a positive attitude toward myself.* *At times, I think I am no good at all.** *I feel that I'm a person of worth, at least on an equal basis with others.* *All in all, I am inclined to feel that I am a failure.** *I feel that I have a number of good qualities.* *I certainly feel useless at times.** *I am able to do things as well as most other people.* *I feel I do not have much to be proud of.** *On the whole, I am satisfied with myself.* *I wish I could have more respect for myself.**
Attitude to debt: (adapted from Lea, Webley & Walker, 1995).	*Taking out a loan is a good thing as it allows you to make your life better.* *It is a good idea to have something now and pay for it later.* *Having debt is never a good thing.** *Credit is an essential part of today's lifestyle.* *It is important to live within one's means.** *I am not worried about having debt (this condition is not stressful for me.* *I like having a credit card.* *I do not like borrowing money.** *I prefer to save for making an expensive purchase.**

	It is better to go into debt than to let children go without Christmas presents. *Even if I had on a low income, I would save a little regularly.** *Borrowed money should be repaid as soon as possible.**
Personality Traits: *(Big Five Inventory; John & Srivastava, 1999).*	
Neuroticism	*I see myself as someone who is depressed, blue.* *I see myself as someone who is relaxed, handles stress well.** *I see myself as someone who can be tense.* *I see myself as someone who worries a lot.* *I see myself as someone who is emotionally stable, not easily upset.** *I see myself as someone who can be moody.* *I see myself as someone who remains calm in tense situations.** *I see myself as someone who gets nervous easily.*
Conscientiousness	*I see myself as someone who does a thorough job.* *I see myself as someone who can be somewhat careless.** *I see myself as someone who is a reliable worker.* *I see myself as someone who tends to be disorganised.** *I see myself as someone who tends to be lazy.** *I see myself as someone who perseveres until the task is finished.* *I see myself as someone who does things efficiently.* *I see myself as someone who makes plans and follows through with them.* *I see myself as someone who is easily distracted.**
Extraversion	*I see myself as someone who is talkative.* *I see myself as someone who is reserved.** *I see myself as someone who is full of energy.* *I see myself as someone who generates a lot of enthusiasm.* *I see myself as someone who tends to be quiet.** *I see myself as someone who has an assertive personality.* *I see myself as someone who is sometimes shy and inhibited.** *I see myself as someone who is outgoing and sociable.*
Locus of control: (Lumpkin, 1985).	*External* *Many of the unhappy things in people's lives are partly due to bad luck.* *Getting a good job depends mainly on being in the right place at the right time.* *Many times, I feel that I have little influence over the things that happen to me.* *Internal* *When I make plans, I am almost certain I can make them work.** *Doing things the right way depends upon ability; luck has nothing to do with it.** *What happens to me is my own doing.**
Impulsivity: (ABIS; Coutlee, Politzer, Hoyle & Huettel, 2014)	*I am a careful thinker.** *I plan trips well ahead of time.** *I do things without thinking.* *I concentrate easily.** *I plan for job security.** *I act "on impulse".* *I am self-controlled.** *I say things without thinking.*

	I don't "pay attention". *I act on the spur of the moment.* *I plan tasks carefully.** *I am a steady thinker.** *I am future oriented.**
Sensation Seeking: Arnett (1994) adapted by Grable and Joo (2004)	*It's fun and exciting to perform or speak before a group.* *I would like to ride the roller coaster or other fast rides at an amusement park.* *I would like to travel to places that are strange and far away.* *I think it's best to order something familiar when eating in a restaurant.** *If I have to wait in a long line, I am usually patient about it.**
Financial Literacy	
Financial Attitude (*adapted from* Parrotta &Johnson, 1998; Potrich et al., 2015)	*It is important for me to develop a regular pattern of saving and stick to it* *It is important that I have written financial goals that help determine priorities in spending.* *A written budget is absolutely essential for successful financial management.* *It is really essential to plan for the possible incapacity of a family wage earner.* *Planning for spending money is essential to successfully managing one's life.* *Planning for the future is the best way of getting ahead.* *Thinking about where you will be financially in 5 or 10 years in the future is essential for financial success.* *Financial planning for retirement is not really necessary for assuring one's security during old age.** *Having a financial plan makes it difficult to make financial investment decisions.** *Having a savings plan is not really necessary in today's world to meet one's financial needs.** *Keeping records of financial matters is too time-consuming to worry about.** *Saving is not really important.** *As long as one meets monthly payments there is no need to worry about the length of time it will take to pay off outstanding debts.**
Financial Behaviour *(adapted from* Shockey, 2002; O'Neil and Xiao, 2012 and OECD, 2013)	*I take notes and control my personal expenses (e.g., expense and revenue spreadsheet).* *I compare prices when buying something.* *I save some of the money I get each month for a future need.* *I have a plan for expenses/budget.* *I can identify how much I pay when using credit.* *I pay my bills without delay.* *I save monthly.* *I analyse my financial situation before a major purchase.* *I always pay my credit cards on time to avoid late payment charges.* *I save regularly to achieve financial targets in the long-term.* *I save more when I get a pay rise.* *I have a financial reserve at least three times my monthly earnings, which can be used in unexpected moments.* *In the last 12 months, I have been able to save money.*

Financial Knowledge *(adapted from* Van Rooij et al. 2011; Klapper et al.,2013; OECD, 2013; the National Financial Capability Study; NFCS. 2013).	***Basic Financial Knowledge*** ***Q1****. Suppose you had £100 in a savings account and the interest rate was 10% per year. After 5 years, how much do you think you will have in the account if you left the money to grow?* *1. **More than £150*** *3. Less than £150* *2. Exactly £150* *4. Do not know* ***Q2****. Imagine that the interest rate on your savings account is 6% per year and inflation is 10% per year. After 1 year, how much would you be able to buy with the money in this account?* *1. More than today.* *3. **Less than today*** *2. Exactly the same.* *4. Do not know* ***Q3****. Assume you have a loan of £10,000 to be repaid after 1 year and the total cost with interest is £600. What is the interest rate on this loan?* *1. 0.3%* *3. 0.6%* *2. **6%*** *4. Do not know* ***Q4****. Suppose you saw the same television at two different stores at an initial price of £1000. Store A offers a discount of £150 while store B offers a discount of 10%. What is the best alternative?* ***1. Buy in store A (discount of £150)*** *2. Buy in store B (discount of 10%)* *3. Do not know* ***Q5****. Imagine five friends receive a donation of £1000 and they must split the money equally between them. How much will each get?* *1. £100* *3. **£200*** *2. £5000* *4. Do not know* ***Advanced Financial Knowledge*** ***Q6****. Considering a long time period, for example 10 or 20 years, which asset normally gives the highest return?* *1. Savings account* *3. **Stocks*** *2. Bonds* *4. Do not know* ***Q7****. Normally, which asset displays the highest fluctuations over time?* *1. Savings account* *3. **Stocks*** *2. Bonds* *4. Do not know* ***Q8.*** *When an investor diversifies, investments are divided among different assets. Does the risk of losing money:* *1. Increase* *3. **Decrease*** *2. Stays the same* *4. Do not know*

	Q9*. A loan lasting 15 years typically requires higher monthly repayments than a 30-year loan, but the total interest paid at the end will be less. True or false?* ***1. True*** *2. False* *3. Do not know* ***Q10****. An investment with a high rate of return will usually have high risk. True or false?* ***1. True*** *2. False* *3. Do not know*

*reversed scored items. Correct responses are in bold font.

Appendix 2: Hypothetical scenarios (Dependent Variable)

1. Suppose that after losing your well-paid job, you have accepted a new job that comes with a reduced salary. You have found it difficult to get by on far less money and have resorted to using credit cards to pay bills and to supplement your income. Last night, the roof on your house was severely damaged after a tree fell over it in high winds. This has caused extensive damage which requires urgent repair. You are already struggling financially and can't afford this expense. What would you do?

2. Suppose that you rent a house with your partner and you both contribute equally to the rent. Last week, after an argument, your partner left the property and refused to pay his/her share of the rent. Your rent is due next week which you can't afford to pay on your own and the landlord has informed you that you are now liable to pay all the rent. What would you do?

3. Suppose that you have credit card, store card and catalogue debt which you had generally been able to manage. However, a few months ago, you had a serious health issue and have been unable to work. You have been living off credit cards and statutory sick pay and have not been able to afford your credit commitments. With mounting debts as a result of accrued interest charges, you have started receiving threatening letters and phone calls from your creditors demanding payment. What would you do?

4. Suppose that you run an on-line business and that you took out a loan secured on your property (i.e., a mortgage) to fund stock and working capital for your business. Recently, your business encountered trading difficulties and is not making enough money. You are struggling financially and have not made the required loan repayments for several months You have now received a default notice from the bank threatening repossession of your home if you do not clear your arrears in 14 days. What would you do?

5. Suppose that you and your partner have a mortgage on your property. You work full time in a school while your partner is self-employed. You have had no difficulty with the mortgage payments until a few months ago when your partner had a serious accident and has been unable to work. He/she had no insurance to claim on. You are struggling to pay the mortgage and the household bills on one wage and have been using your savings which have now been exhausted. A payment on your mortgage is due next week. What would you do?

6. Suppose that you have been making monthly repayments on a personal loan you took out from the bank, but you have lost your job and are now unable to keep up with the repayments. You have a job interview in two weeks, and you may get the job but a payment on your loan is due next week. What do you do?