Overactive, overwrought or overdrawn? The role of personality in undergraduate financial knowledge, decision-making and debt

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Abstract : The financial situation of undergraduate students remains a high-profile issue within the UK higher education sector, not least due to its perceived relationship with retention, well-being and success. This paper probes this question from a new direction, using concepts and approaches from the field of applied psychology to examine how students use various forms of credit and whether personality impacts on borrowing behaviour.

The sample in this study comprised 604 undergraduate students at a large UK university. Data was collected by online questionnaire on demographic background, borrowing history, borrowing intentions, financial literacy, personality type and attitudes to money. Using a series of regression analyses, it was found that a tendency towards extraversion was particularly associated with the use of overdrafts and borrowing from family members and that this led to higher anticipated debts on graduation. Neuroticism was found not to have any significant relationship to borrowing behaviour, but it was a significant predictor for student anxiety about money management.

The paper also reports related findings concerning students' learned borrowing behaviour, the acceleration of student use of commercial borrowing during their course of studies and about the construction and implications of financial literacy.

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1. Context

Student indebtedness has become a feature of the last twenty years in the United Kingdom. Broadly starting with the introduction of government-sponsored loans in 1990, we have now reached a point where an expectation of debt is deeply ingrained in the consciousness of students and their families. At the time of writing, the average student debt for a full-time undergraduate on graduation is variously estimated at £10,539[1] (Johnson *et al*, 2009), between £15,000 and £20,000 (Johnston, 2009) or £23,000 (PUSH, 2009), while some students are reporting anticipated debts of £30,000 or more. The majority of this debt remains accumulated through government student loans, but the liberalisation of commercial credit in the 1990s and 2000s has also opened up a number of additional avenues for borrowing for students (e.g. overdrafts, personal loans, store cards and credit cards).

Significant disquiet about the acceleration of student indebtedness as been reported from a variety of perspectives, including :

- **Mental health** – many students report anxiety and stress about money management and the scale of debt that they have accumulated (Stradling, 2001; Cooke *et al*, 2004; Carney, McNeish and McColl, 2005; Kettley, Whitehead and Raffan, 2008). In their recent large-scale national study, Johnson *et al* (2009) found that 70% of full-time students reported worry or stress about their finances, although Cooke *et al* (2004) cast some doubt on whether concerns about money translates into measureable mental health issues. However, it is generally held that anxiety can impact on students' ability to focus successfully on their studies, disrupting sleep patterns, contributing to physical illnesses and so forth. There is a more general association between money and anxiety in the wider population (Furnham and Argyle, 1998).

- **Part-time employment** – the acceleration of student indebtedness has coincided with the growth of part-time working, although there is some recent evidence that this is now levelling off (Johnson *et al*, 2009). One obvious motivation is an attempt to provide additional income and avoid excessive debt while maintaining a certain standard of living (Callender and Kemp, 2000; Connor and Dewson, 2001; Christie, Munro and Rettig, 2001; Hunt, Lincoln and Walker, 2004; Metcalf, 2005; Moreau and Leathwood; 2006). While part-time work does offer positive non-financial benefits (e.g. personal skills), it limits the amount of time available for academic study and can contribute to anxiety as a result.

Deriving from these two associated phenomena, it has long been hypothesised that there is a causal link between student debt and poor attainment and/or early withdrawal (e.g. Yorke *et al*, 1997; Ozga and Sukhnandan, 1998; Callender and Kemp, 2000; Davies and Elias, 2003; Hutchings, 2003; Forsyth and Furlong, 2003; Quinn *et* al, 2005; National Audit Office, 2007). Some writers have questioned whether this relationship is straightforward (Blythman and Orr, 2002; Bennett; 2003; Harrison, 2006; Harrison, Baxter and Hatt, 2007) as many students who report financial difficulties or come from low income households persist and achieve highly. Johnson *et al* (2009) note that only a small minority of students felt that financial problems had impacted seriously on their academic studies, although it should be noted that this was a survey of survivors; presumably many of those with serious problems had already withdrawn from university.

2. Which students accumulate debt and how?

Despite the academic and journalistic interest in student debt and the severe consequences postulated by the writers noted above, relatively little research has been undertaken into which students are more or less likely to accumulate debt and how this borrowing is arranged. Since the introduction of student loans, a number of studies have concluded that, in general terms, women and students from lower socio-economic groups are less likely to accumulate debt or more likely to

be debt-averse (Hesketh, 1999; Morgan, Roberts and Powdrill, 2001; Lea, Webley and Bellamy, 2001; Universities UK, 2003; Kettley, Whitehead and Raffan, 2008), possibly as they have lower expectations of lifetime earnings. In the most recent Student Income and Expenditure Survey (Johnson *et al*, 2009), multiple regression analysis found that the only significant predictors for overall debt levels were social class (with those from lower socio-economic groups having higher debts) and whether the student lived in the family home (with those who did having lower debts).

It is often assumed that student borrowing is almost exclusively associated with government-sponsored loans. Indeed, Johnson *et al* (2009) find that commercial borrowing and loans from family only make a small contribution to student indebtedness, comprising less than 10% of the total. Their analysis does not, however, take account of the often transient nature of commercial borrowing, where students obtain money in times of difficulty or for specific purchases, to repay it within a matter of weeks or months when funds are available through their student loan or employment income. Commercial and family borrowing may therefore be a more significant activity than currently recognised. This is particularly relevant in the context of work by Lea, Webley and Bellamy (2001) and Scott and Lewis (2001), who found that student debt-aversion declines through time, while the propensity to access forms of credit other than student loans increases.

Returning to the question of which students borrow, this paper seeks to open up a new line of enquiry, drawing on the field of applied psychology. There is an extensive literature spanning the last fifty years demonstrating from empirical data that personality types and traits have a role in shaping lifestyle choices; a full review of this literature is beyond the scope of this paper, but Furnham and Heaven (2001) provide a useful overview across a wide range of human activity, with specific work relating to consumption and finance being discussed in more detail below. The perspective used in this paper is not that personality types are deterministic, abstract or fixed, but that they represent facets of the individual that are contingent on situation and context, may vary

through the individual's life course and may exert different levels of influence on attitudes and behaviour from person to person.

Drawing jointly on the literature on student debt and that of the psychology of personality (Carver and Scheier, 2004; McCrae, 2009), two well-established personality types appear to have something to offer to the question of which students borrow money, how and why:

- ***Extraversion*** is an expression of an outgoing and sociable personality that thrives on the company of others, the opposite being introversion. Specific traits commonly associated with extraversion include warmth, gregariousness, self-confidence, assertiveness and positivity.

- ***Neuroticism*** describes individuals who are prone to anxiety, depression or mood swings, the opposite generally being rendered as 'emotional stability'. Other commonly associated traits include self-consciousness, impulsiveness and hostility.

These two types have a long history within applied psychology (e.g. Eysenck, 1947; Digman, 1990; Costa and McCrae, 1996; John, Naumann and Soto, 2008) and acceptance of their validity is near-universal, including their application across different cultures and age groups. They form two of the so-called 'Big Five' personality types, which McCrae (2009: p.148) describes as *"the dominant paradigm in personality research, and one of the most influential models in all of psychology"*. Extraversion and neuroticism (or close correlates) are generally included even by those proposing alternative models of personality (see McCrae, 2009 for a discussion thereof).

Furnham and Heaven (2001) note that relatively little has been written about the relationship between personality and financial decision-making; what does exists being focused mainly on consumption and savings rather than borrowing. Roberts and Robins (2000) find that the students with extravert personalities are more likely to have economic and hedonistic life goals, including

aspiring to exciting lifestyles, while Mooradin and Olver's (1996) research on shopping behaviours find that both extraversion and neuroticism are powerful predictors, with the former being related to social goals and conspicuous consumption and the latter being related to personal happiness and mood management. Furnham (1981) reports that people with extravert tendencies seek social interaction and physical activity in their leisure time; activities which are likely to incur additional costs. McClure (1984) finds that extraverts have a tendency towards extravagant lifestyle decisions, while those prone to neuroticism are more concerned about money and its ramifications. Morgan, Roberts and Powdrill (2001) identify expenditure on alcohol, effectively acting as a proxy for social life, as a major source of variability in student spending patterns, while McManus and Furnham (2006) find among their student sample that extraversion is correlated to a wide range of artistic activities that incur costs, such as attending concerts, visiting the cinema or theatre and going dancing. It is not surprising, then, that Metcalf (2005) finds that students who prize social factors more heavily accrue higher debts and that this is an active choice contrasted to frugality or part-time work. Nyhus and Webley (2001) conclude that extraversion and emotional stability both exert a significant influence on borrowing and saving behaviours (though not always in the ways hypothesised), while Mayfield, Perdue and Wooten (2008) note in passing that extraversion and neuroticism appear to be correlated with short-term investment decisions. Whilst they were examining savings portfolios, there is a clear link to the types of decisions that students routinely make about borrowing.

The existing body of literature therefore suggests that extraversion and neuroticism are useful concepts in probing patterns of spending and borrowing. Individuals who tend towards extraversion are more likely to incur additional social expenditures, seeking out new experiences, interacting with friends and acquiring status symbols. Those who tend towards neuroticism find money to be a source of anxiety, influencing their financial decision-making. However, no work to date appears to have addressed the specific issue of the relevance of personality type on borrowing behaviour among full-time undergraduate students. Two hypotheses therefore emerge to begin to address this gap :

- **Hypothesis 1** : that students with more extravert personalities will tend to have higher expenditures, particularly on their social life, leading to more frequent and/or extensive borrowing.

- **Hypothesis 2** : that students with more neurotic personalities will have a predisposition to worrying about their finances and seek to reduce their expenditure and indebtedness as a result.

As noted above, extraversion and neuroticism are two of the 'Big Five'. It is necessary here to briefly explain why the other three personality types (*conscientiousness*, *agreeability* and *openness to experience*) were not included in this study, for which there were two reasons. Firstly, from a theoretical standpoint, the other three types are more contentious, with a number of competing models (again, see McCrae, 2009 for a summary). While there is some evidence from previous studies of openness to experience impacting on lifestyle aspirations (Roberts and Robins, 2000) and financial decision-making (Nyhus and Webley, 2001; Mayfield, Perdue and Wooten, 2008), this was less strong than for the two chosen types and no specific hypothesis presented itself in the context of this study. Conversely, a hypothesis that conscientiousness might be associated with debt-averse and strong money management skills did present itself, but there was no specific support for this from the literature; indeed Mayfield, Perdue and Wooten (2008) specifically sought this connection and failed to find it. Secondly, from a pragmatic standpoint, there was a strong imperative to limit the size of the questionnaire in order to increase the response and completion rate. A fuller approach employing all of the Big Five is therefore an opportunity for future research.

Personality types are traditionally measured through the application of self-reporting inventories. As mentioned above, the time available for collecting data from students was limited and so some of the larger inventories commonly used in applied psychology (e.g. the 240-item 'NEO-PI-R'; Costa and McCrae, 1992) were not appropriate. The decision was therefore taken to use the

elements of the 44-item Big Five Inventory ('BFI'; John, Donahue and Kentle, 2001) that relate to extraversion and neuroticism, amounting to two 8-item inventories. There is good evidence (John, Naumann and Soto, 2008) to suggest that the BFI offers an acceptably robust and reliable solution, certainly within the terms of an exploratory study.

3. Research questions

The aim of the study reported in this paper was thus to investigate whether the widely understood concepts of extraversion and neuroticism could be usefully applied to the borrowing behaviours of undergraduate students. The study attempted to address the following specific research questions:

1. Can robust measures of extraversion and neuroticism be constructed within the confines of a short questionnaire?
2. How do these measures correlate with demographic variables, attitudinal variables and perceived subjective norms?
3. Do students with more extravert personalities have different patterns of borrowing behaviour, potentially resulting from a more sociable lifestyle?
4. Do students with more neurotic personalities have different patterns of borrowing behaviour, potentially resulting from greater anxiety about financial matters?
5. What implications do the findings of this study have for policy and/or practice?

4. Outline methodology

The research sample comprised current full-time UK undergraduates aged under 30 on entry at a large mid-ranking teaching-focused English university. All involved were subject to the post-2006

funding system[2]. A self-selecting sample of 604 students responded to an online questionnaire distributed by e-mail (along with a reminder two weeks later), amounting to around 8% of the total cohort who received the invitation.

The questionnaire fell into five sections : (a) current experience of borrowing money (via student loan, credit card, overdraft or family), (b) anticipated future borrowing from these sources, (c) inventories relating to extraversion and neuroticism, (d) attitudes and perceived norms in relation to debt, and (e) a measure of financial knowledge through a multiple-choice quiz. The questionnaire was piloted in advance with a group of 36 students and no difficulties of understanding were identified. The results were analysed using the SPSS statistics software.

5. Findings

5.1 Demographic variables

The following background demographic variables were collected for each respondent:

(a) Gender.
(b) Age on entry, collapsed into ‘under 21’ (younger) and ’21 or over’ (older) categories.
(c) Social class, classified according to the NS-SEC system (ONS, 2009) based on parental occupation for younger students or own occupation prior to studying for older students, collapsed into ‘higher socio-economic group’ (NS-SEC 1 to 3) and ‘lower socio-economic group’ (NS-SEC 4 to 8) categories.
(d) Year group, categorised into ‘first’, ‘second’ and ‘third or later’.
(e) Ethnicity, collapsed into ‘white students’ and ‘minority ethnic students’ due to low numbers in individual ethnic groups.

The demographic background of the sample is shown in Table 1; numbers may not sum to total due to missing or unclassifiable values. It broadly reflected the wider cohort in terms of gender, ethnicity and age, although students from lower socio-economic groups may have been slightly under-represented[3].

Table 1: demographic profile of sample

	n	%
Female	343	57
Male	259	43
Under 21	482	81
21 or over	116	19
Higher socio-economic group	409	79
Lower socio-economic group	119	21
White students	545	91
Minority ethnic students	52	9
First year	221	37
Second year	204	34
Third or later year	175	29
TOTAL	604	100%

The inter-relationship between the demographic variables was analysed to identify whether certain groups were over-represented among others (e.g. whether older students were disproportionately men or women). It was found that students from the lower socio-economic groups were significantly more likely to be older and from minority ethnic groups, which is in line with the wider higher education population. No other relationships were identified.

5.2 Personality and subjective norm variables

The 8-item inventories for extraversion and neuroticism provided scalar measures ranging between 8 and 40. These were normally distributed, with means of 27.1 and 22.8 respectively, with higher

scores representing higher levels of the two traits. Cronbach's alpha was calculated for both inventories and it was found that they had high levels of internal robustness ($\alpha > 0.84$ in both instances). There is therefore a strong degree of confidence in the inventories used. Using ANOVA tests, women showed significantly higher mean levels of both extraversion and neuroticism than men, while students from higher socio-economic groups had higher extraversion scores on average, but neuroticism scores were similar. There were no differences by ethnicity, year group or age. The mean scores for extraversion and neuroticism is shown in Table 2.

Table 2: mean extraversion and neuroticism scores by demographic group

	Extraversion	**Neuroticism**
Female	27.8**	24.3**
Male	26.3**	20.7**
Under 21	27.2	22.8
21 or over	26.8	22.5
Higher socio-economic group	27.5*	22.6
Lower socio-economic group	25.9*	22.9
White students	27.2	22.8
Minority ethnic students	26.8	22.2
First year	26.7	22.6
Second year	27.4	22.6
Third or later year	27.4	23.1
OVERALL	**27.1**	**22.8**

* significant at the 5% level ** significant at the 1% level

The questionnaire also contained statements about the students' perceived subjective norms in regard to family and friends, scored on a five-point Likert scale:

(a) "I don't want to seem 'tight' or money-conscious amongst my friends and other students"

(b) "I take note of my parents'/family's viewpoint on financial issues"

Relationships between the subjective norms and demographic variables were also tested using ANOVA, but the only significant finding was that older students were less likely to feel that they take notice of their family's viewpoint on financial issues.

Correlation coefficients were calculated between the four variables, but the only significant relationship was a negative correlation between extraversion and neuroticism ($r = -0.212$, $p < 0.001$). In other words, students with higher neuroticism scores tended to be less extravert in their outlook and *vice versa*. Interestingly, there did not appear to be any relationship between the subjective norms and personality types.

5.3 Borrowing history

Students in the research sample were asked about the current and future borrowing from four sources (student loan, overdraft, credit card and family), as well as to provide an estimate of their overall debt on graduation. Table 3 provides a summary of current borrowing patterns.

Table 3: borrowing patterns from different sources.

Type of borrowing	**%**	**Type of borrowing**	**%**
Student loan :		*Credit cards :*	
None taken	12.2%	Has no credit card	64.5%
Partial loan taken	5.3%	Has card and uses occasionally	28.5%
Full loan taken	82.5%	Has card and uses frequently	7.0%
Overdrafts :		*Family :*	
Has no overdraft facility	13.6%	Has never borrowed from family	52.3%
Has facility, but never uses	15.6%	Has borrowed, but not currently	18.8%
Has facility, but not currently using	21.7%	Currently owes money to family	28.9%
Has overdraft currently	49.2%		

The most frequent sources of borrowing used by the students in the sample were thus, in declining order of importance, student loans (88%), overdrafts (71%), family (48%) and credit cards (36%).

It is also clear that the latter three sources in particular were used on a contingent basis, to be dipped into when needed, but to be cleared when possible. For example, while a third of the sample owned credit cards, only one in fourteen were frequent users. Similarly, roughly a third of borrowers from overdrafts and family reported having paid off their debts.

Each of the four sources of borrowing were investigated in turn using logistic regression analysis. This technique is suited to dichotomous dependent variables (i.e. borrowed vs. has not borrowed) and the models were constructed in this form. The independent variables entered into the model were the demographic variables, the scores for extraversion and neuroticism and the two measures of subjective norms. The results tables are presented in Appendix A.

Student Loan : no significant predictors were found for propensity to take a student loan.

Overdraft : age, year of study, extraversion and peer norms were all identified as significant predictors for whether a student had borrowed through an overdraft. Younger students and those early in their studies were less likely to have used an overdraft facility, while those with more extravert personalities and those who felt influenced by their peers were more likely to have done so.

Credit card : age and year of study were identified as significant predictors for use of a credit card (occasionally or frequently), such that this was higher for older students and those in their third or later year.

Family : the only significant predictor for students borrowing from their family was extraversion, with more extravert individuals having a higher propensity to do so.

We thus find that each of the four sources of borrowing have distinct and contrasting explanatory models, while neuroticism, parental norms, social class, gender and ethnicity were found not to have a measurable impact on students' borrowing history.

5.4 Financial knowledge

The questionnaire used contained a 13 question multiple-choice quiz to assess respondents' knowledge of consumer finance in the UK. Questions included the relative interest rates of different types of borrowing and various personal tax rates. It was intended to act as a proxy for the degree of understanding that students had of the borrowing options available to them and the wider financial context in which they were managing their money. Scores were calculated by aggregating correct answers. They varied from 1 to 13 and were normally distributed with a mean of 8.3, representing a 64% correct answer rate.

Financial knowledge scores were significantly higher among men, older students and students in the later stages of their studies. A linear regression model demonstrated that each of these variables exerted a separate and significant effect on financial knowledge; this model is presented in Appendix B. There was also a tendency for students from lower socio-economic groups to have lower financial knowledge scores, but this did not reach statistical significance.

Better financial knowledge was also associated with a history of use of overdrafts and credit cards, although it is difficult to disentangle cause from effect (Robb and Sharpe, 2009): do students who use these financial products have better knowledge as a result, or do students with better pre-existing financial knowledge choose a wider range of commercial borrowing sources? The reality is probably that there is a mutually-supporting feedback loop between behaviour and understanding.

5.5 Borrowing intentions

Respondents were also asked about their future borrowing intentions in the subsequent three months from the latter three sources; they were not asked about student loans as the next borrowing decision was too far in the future for first and second year students, while final year students had had their last opportunity. A summary of the responses is presented in Table 4.

Table 4: anticipated borrowing plans for the following three months

	Definitely	**Probably**	**Probably not**	**Definitely not**
Overdraft	35.5%	19.2%	21.1%	24.1%
Credit card	5.1%	7.7%	19.2%	68.0%
Family	10.7%	25.6%	35.5%	28.4%

We find that once again overdrafts were the most popular form of borrowing, with 55% of students expecting to use one in the near future, compared to 36% borrowing from family sources and 13% using credit cards. In all, 70% of students anticipated borrowing from at least one source in addition to their student loan and 5% anticipated using all three.

Logistic regression models were once again built for intention to borrow, with the response collapsed into a dichotomous dependent variable (i.e. likely to borrow vs. not likely to borrow) and the same set of independent variables as those in the models discussed above, plus financial knowledge. The results tables are presented in Appendix C.

Overdraft : year of study and extraversion were found to be significant predictors for intention to use overdrafts in the future, with first year students being less likely than those in the later years and students with more extravert personalities also being more likely. Those with better financial knowledge and who are concerned about the opinions of their peers also had a higher propensity to be planning to use an overdraft.

Credit card : year of study was again a significant factor in future plans, with first year students being less likely than students in later years. In addition, students who were concerned about the views of their peers were also more likely to be anticipating using a credit card.

Family : there were no significant predictors for intention to borrow from family sources.

When previous borrowing behaviour was also added into the models, this became a significant predictor in all three cases. In other words, students who have borrowed from a source in the past are more likely to believe they will do so again in the future. Additional models were also constructed including all types of previous borrowing behaviour. With one exception, there was no evidence that prior borrowing from other sources influenced future intentions. The exception was that students who had used credit cards were significantly less likely to envisage borrowing from their family in the near future, suggesting a degree of interchangeability between the two sources.

5.6 Anticipated debt

Students in the sample were asked to estimate their total debt on graduation. The hypothesis was that certain groups of students may have different expectations, and specifically that extraversion and neuroticism might have a part to play in overall debt management. A summary of responses is provided in Table 5, comparing well the estimates quoted at the beginning of this paper.

Table 5: estimated total debt on graduation from all sources

No debt	3.2%
Less than £5,000	3.2%
Between £5,000 and £10,000	6.1%
Between £10,000 and £15,000	13.4%
Between £15,000 and £20,000	27.4%
Between £20,000 and £25,000	28.4%
Over £25,000	18.2%

Once again, a linear regression model was constructed including the demographic, personality and knowledge variables described above. However, no significant predictors for estimated overall debt were found. Adding in the four variables relating to borrowing practices, it was found that a history of borrowing through student loans and overdrafts were significant predictors; the results table can be found at Appendix D. Given the relative size of student loans, it is hardly surprising that those students who had not taken them should be anticipating lower levels of debt. More surprising is the link to overdrafts, as these are often conceptualised as being a short-term cashflow measure for students. Also interesting is that financial knowledge exerted no influence on anticipated debt; having a greater understanding of finance does not appear to limit borrowing behaviour (Robb and Sharpe, 2009).

Anticipated borrowing intentions were not directly entered into the explanatory model as it was not felt appropriate to attempt to predict a future estimate with other future intentions. However, a series of Mann-Whitney tests showed that those students who were anticipating borrowing from each of the three sources in the future all had significantly higher expected debts on graduation.

5.7 Attitudes to debt

Finally, the questionnaire also contained five statements about the students' attitudes to debt and their ability to influence it, scored on a five-point Likert scale:

(a) "During my time as a student, I regard myself to have been a good money manager"
(b) "I feel resigned to being in debt while studying"
(c) "I am comfortable with being in debt as part of the modern way of life"

Correlation coefficients were calculated between the three attitudinal scores and it was found that money management was negatively correlated with both debt-resignation ($r = -0.151$, $p < 0.001$)

and debt-comfort ($r = -0.144$, $p < 0.001$). Thus, those students who felt that they were good money managers generally expressed neither being resigned to being in debt nor being comfortable with it.

It was hypothesised that these attitudinal variables would be linked to a combination of demographic variables, personality, financial knowledge, subjective norms and borrowing behaviours to date. In order to test this, a linear regression model was constructed for each of the three variables; the results tables are presented in Appendix E.

Money management : once other variables were held constant, those students who felt that they were poor money managers were significantly more likely to be male, to have high scores on neuroticism, low scores on financial knowledge and to place low value on parental advice. They also tended to have a history of borrowing through overdrafts, credit cards and from their family.

Debt-resignation : a history of taking a student loan and/or using overdrafts and credit cards was the only significant predictor for feeling resigned to being in debt.

Debt-comfort : younger students were significantly more comfortable with being in debt than the older students in the sample. Debt-comfort was also positively associated with borrowing through student loans or from family sources.

It should also be noted that debt-resignation ($r = 0.320$, $p < 0.001$) and debt-comfort ($r = 0.136$, $p < 0.001$) were significantly positively correlated with anticipated overall debt, while money-management was negatively correlated ($r = -0.192$, $p < 0.001$). Students who anticipate higher levels of debt on graduation are more likely to be accepting of indebtedness and to think that they are less good at managing their money, but, as with financial knowledge, it is difficult to disentangle whether these relationships are causal in either direction.

6. Discussion

The main thrust of this paper is that the concepts of extraversion and neuroticism, borrowed from the field of psychology, have a contribution to make in terms of understanding contemporary undergraduate borrowing patterns. Returning to the research questions, we have found that it is possible to produce internally robust measures of the two traits and that female students score more highly on both, on average, with students from higher socio-economic groups also scoring more highly on the extraversion scale. The former relationship replicates the findings of a recent large-scale cross-cultural study (Schmitt *et al*, 2008), but surprisingly, there appears to be no recent literature on the connection between social class and personality types in young adults with which to contextualise the latter finding. We have also found that extraversion and neuroticism were negatively correlated in our sample, in common with similar studies (e.g. Mooradian and Olver, 1996; Noon and Fogarty, 2007; Mayfield, Perdue and Wooten, 2008). The strong measure of internal consistency and triangulation with the literature suggests that the measures of the two personality types used in this study are robust and reliable.

Turning in more detail first to extraversion, Hypothesis 1 was that a more sociable student lifestyle was likely to lead to greater borrowing, as found by Metcalf (2005). The results have not borne out this hypothesis in simple terms. While the literature (e.g. Mooradian and Olver, 1996; Morgan, Roberts and Powdrill, 2001; McManus and Furnham, 2006) consistently predicts that those with extravert personalities will, on average, have higher expenditures, this has not translated into anticipated debts in this instance. This could be as more extravert students are also more likely to have part-time jobs, thereby maintaining a high expenditure, but without a larger overall debt. Unfortunately, this study did not collect data on part-time work, so this is an avenue that would bear investigation in future research.

We have, however, found that the measure of extraversion does have a number of statistically significant relationships with borrowing behaviour. In particular, students with a high extraversion score had a higher propensity to use overdrafts and to be anticipating using them in the future, even when other factors were taken into account. They were also more likely to have a history of borrowing from their families; the only predictor for this type of debt.

It is useful to consider overdrafts in a little more detail. From the findings presented above, we get a particular picture about which students have the greatest propensity to use overdrafts. They are used particularly by students with extravert personalities and those who are concerned about being seen as 'tight' by their friends (though these two variables are not themselves linked). It seems reasonable to conclude that one of the primary reasons for using an overdraft is that they give students a short-term and 'free' sources of money to supplement their income for purposes linked to their more sociable lifestyle. Overdrafts thus begin life largely as a cashflow facility, to be paid off when other sources of income (e.g. student loan, part-time earnings) are available. Mayfield, Perdue and Wooten (2008) find that extraverts are particularly prone to making short-term investment decisions; a useful parallel.

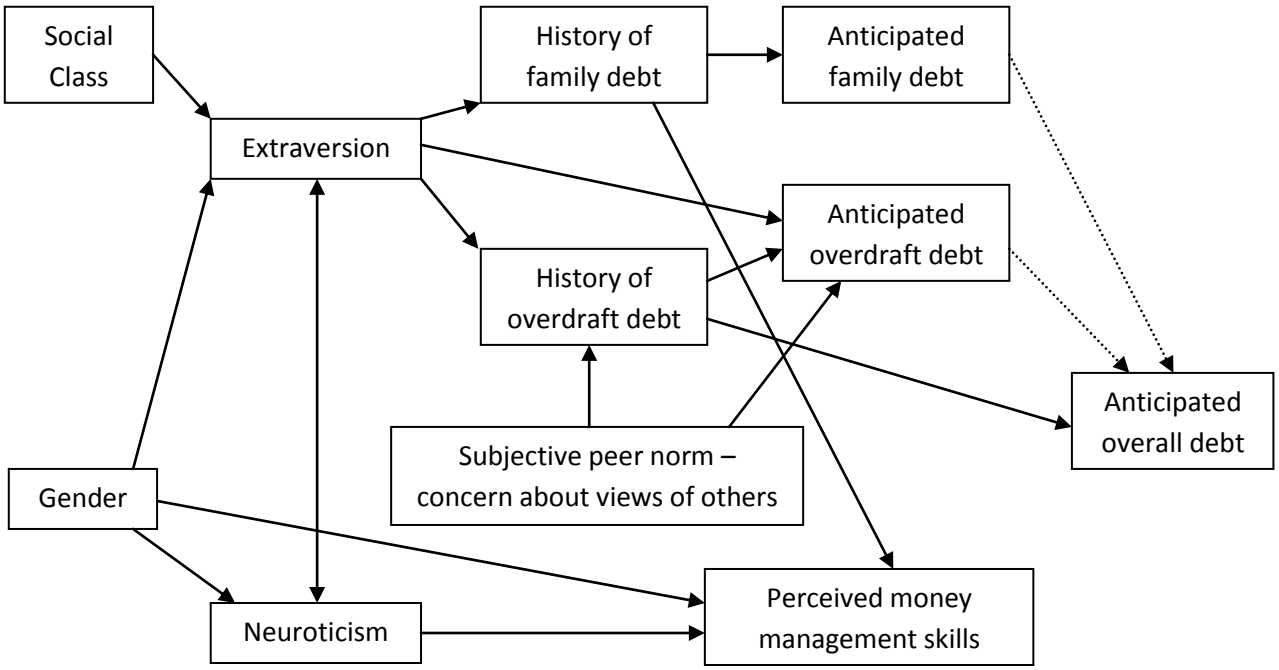
The findings described above show that overdraft use increases in later stages of students' academic careers, and, in particular, those students who have borrowed through an overdraft were more likely to be anticipating using it again in the future. This would tend to suggest that this type of borrowing accelerates, with future use linked also with growing familiarity with financial products. Indeed, Johnson *et al* (2009) find that mean overdraft debt more than doubles between first and final years for full-time students. A habit forms over time where overdraft use becomes normalised and this may explain why those with a history of using overdrafts expect to accrue higher overall debts on graduation. What begins as a short-term cashflow measure thus becomes a more significant and longer-term source of borrowing as time progresses.

Through the established relationship between extraversion and overdraft use, it is possible to see that there is a more complex path by which the initial hypothesis, in fact, still holds true. Students with more outgoing and sociable personalities gain an early familiarity with overdrafts that leads them into an increased expectation of using them in the future and finally of having a greater long-term debt. This appears to be the case also for that parallel group of students who are worried about they are perceived their peers. It could be suggested that as the final stages of a degree course draw nearer, students allow their overdraft debts to grow (perhaps as their part-time work commitments decline) with the intention of repaying them when in graduate work or converting them to more conventional bank loans. This process is almost certainly encouraged, whether deliberately or inadvertently, by UK banks' common practice of increasing the size of overdraft available in each successive year of study.

We turn now to neuroticism and Hypothesis 2; that students who are prone to anxiety will seek to minimise their debt and/or to use different approaches to borrowing. Given the negative correlation between this measure and extraversion, it might be expected to underpin strong constrasts in behaviour, attitudes and intentions. However, this was not the case. High neuroticism scores were not a significant predictor for any particular borrowing approach. They were strongly associated with fears about coping with finances, with those students expressing a tendency towards neuroticism also being more likely to feel that they were not good money managers, even though their behaviours and estimated overall debts were commensurate with other students. This finding fits well with other research in the field, with more neurotic individuals being more aware and concerned about money (McClure, 1984), but where anxiety about financial matters is not necessarily being associated with objectively worse situations (e.g. Stradling, 2001; Blythman and Orr, 2002; Johnson *et al*, 2009).

The role of extraversion and neuroticism in student borrowing can therefore be summarised in the descriptive diagram shown as Figure 1.

Figure 1: descriptive network of influences of extraversion and neuroticism on borrowing



Whilst not the main thrust of this paper, it is worth briefly considering some of the other findings that have emerged. Firstly, it is noted that despite the liberalisation of the credit market in the last twenty years, credit cards remain a relatively unimportant source of borrowing for students. Around a third of students in this sample had credit cards, with usage being higher among older students and those from higher socio-economic groups. At the time of the survey, only a small majority were frequent users with the remainder using the cards for occasional purchases or as an emergency safety net. This is perhaps due to an appreciation that credits cards are, in general, an expensive way to borrow. However, there was again some evidence to suggest that credit card use accelerates as more time is spent in higher education, with students in the later stages of their course being more likely to expect to be using a credit card in the near future. This phenomenon triangulates with the findings of Robb and Sharpe (2009) and might explain why Johnson *et al* (2009) find relatively little usage of borrowing sources other than student loans. Under this alternative view, significant sums of commercial debt are only accrued in the student's last six months or so.

Secondly, financial knowledge among the student body appears to be a state of flux. Male students and perhaps those from higher socio-economic backgrounds appear to have a better baseline knowledge about basic financial principles. There is some evidence for the relevance of these variables in the wider UK population from Atkinson *et al's* (2006) large-scale study. However, this is at odds with Marriott (2007) and Noon and Fogarty (2007), who found no demographic differences in financial knowledge/literacy among undergraduate students. No reason for this conflicting finding is readily apparent. In addition, this study found that life experience is also important in the developing financial knowledge, with older students, those with experience of commercial borrowing and those in the latter stages of their studies also getting higher scores on average. Similar relationships have been found in the US (Robb and Sharpe, 2009).

On the basis that a good knowledge about financial concepts and products is a key component in good financial decision-making, more research is needed to better understand how this knowledge is formed. Unsurprisingly, it was found that students with good financial knowledge were more likely to have a self-perception of being a good money manager. It is interesting that exposure to commercial borrowing helps to develop financial literacy, while, at the same time, leading to concerns about money management. Those students expressing these concerns also tended to be resigned to indebtedness and comfortable with it; a potentially dangerous mix for their future borrowing behaviours (Scott and Lea, 2001). We therefore end up with the slightly paradoxical position that helping students to become knowledgeable about money matters could actually make them more willing to enter the commercial borrowing market and become more relaxed about accruing debts. However, while Marriott (2007) paints a rather bleak picture of students' financial literacy and the consequences thereof, there was no evidence from this study that it affected the level of debt anticipated on graduation.

Thirdly, it should be noted that demographic variables used in this study exerted relatively little direct influence on borrowing. Ethnicity had no identifiable impact, while gender and social class

only impacted in isolated areas of behaviour. This finding is in contrast with those previous studies (Hesketh, 1999; Morgan, Roberts and Powdrill, 2001; Lea, Webley and Bellamy, 2001; Kettley, Whitehead and Raffan, 2008) that have stressed the importance of gender and social class in understanding students' financial affairs. This study suggests that personality types, and particularly extraversion, may be an important mediating factor in explaining the link between demographic variables and student debt. For example, the assumed casual pathway in previous studies has been that students from the lower socio-economic groups to be less likely to borrow due to underlying debt-aversion or lack of family resources. However, this study shows that when extraversion is included in the statistical model for borrowing, social class largely disappears as a separate predictor, suggesting that it is its influence on personality that is important rather than class-based attitudes or wealth. An alternative explanation for the lack of demographic predictors in this study would be that the move towards increased tuition fees and heightened expectations of indebtedness have permeated across the whole range of gender, class and ethnicity, lessening their importance compared to earlier studies.

7. Conclusions

This study has found the concepts of extraversion and neuroticism do indeed have something to add to ongoing scholarship and debate about student financial support, especially in terms of the use of commercial and informal credit. It has been demonstrated that students with more extravert personalities have a propensity to find themselves on a pathway which begins with the occasional use of short-term borrowing to support lifestyle choices, but which ends with concerns about their ability to manage their finances and higher levels of expected debt on graduation. It was also found that those students who were worried about not seeming 'tight' around their friends formed a distinct group, but with a similar pattern of financial behaviour and expectations to those with extravert personalities. It is perhaps surprising that these two groups were not linked. It has also been demonstrated that, contrary to the original hypothesis, students who are prone to neuroticism

did not have a distinctive approach to financial decision-making, but that they were significantly more likely to be anxious about their money management skills.

The implications of this study are various. The first is that it is important to understand that personality traits influence financial decision-making for students as much as for any other portion of society (Nyhus and Webley, 2001). Those who are naturally outgoing or who keenly feel the opinions of others make expenditures to support a lifestyle that feels 'right' for them; expenditure that may be seen by policy makers and commentators as "unrealistic" (Universities UK, 2003) or "extravagance" (Sharpe, 2009). Meanwhile, students who are prone to anxiety may become stressed due to feeling that they are failing to manage their money effectively, even when they are really coping as well as their peers. This has historically been a missing component in research on student finance, with the role of demographic factors possibly being overstated.

In policy terms, consideration needs to be given to how personality traits like these can be accommodated within the wider system of financial and pastoral support. This might include developing new vehicles for providing students with 'safe' forms of borrowing to reduce demand for commercial credit or excessive part-time work. Similarly, provision is needed to help bolster the confidence of those students who are perhaps unnecessarily anxious about managing their finances, to avoid stress and potential withdrawal. In the wider context of possible future rises in tuition fees, this latter issue is likely to increase in importance.

The phenomenon of banks increasing the size of overdraft facilities for students in later years of study has been noted, and the second implication of this study is therefore that the ethics of this needs to be questioned. It would appear, *prima facie*, that this policy gives students the scope to accumulate significant amounts of commercial debt as they move towards graduation, with the more outgoing and image-conscious students potentially being the most at risk. This is likely to be exacerbated by the student loan system offering smaller amounts to students in their final year.

Specific research that looks at this final period would be instructive, especially to provide policy makers with a more complete picture than that provided by official surveys at present.

Another implication of this work is that the acquisition of financial knowledge is not well understood. In particular, it would appear that female students, those from lower socio-economic groups and young entrants begin their university careers at a relative disadvantage. Efforts to increase financial literacy need to be informed by this situation and to develop specific strategies to engage with these groups. Perhaps more worryingly, there is some evidence from this study that the feedback loop between borrowing and financial knowledge can lead to increased debt-comfort and perceived money management problems, with students who are more aware of the options available being more ready to access them. If, as Scott & Lea (2001) also suggest, the student financial support system and commercial credit market is providing a situation where students are becoming comfortable with indebtedness at an early age, this has significant ramifications for wider society as this generation of students moves past graduation.

Appendix A

Has borrowed through a student loan	B	SE	Exp(B)	sig
CONSTANT	.677	1.303	1.967	.604
Gender (*Male* is reference category)				
- *Female*	.243	.339	1.275	.473
Age on entry (*Under 21* is reference category)				
- *21 or over*	.228	.432	1.256	.598
Ethnicity (*White* is reference category)				
- *Minority ethnic community*	-.823	.511	.439	.107
Social class (*NS-SEC 1 -3* is reference category)				
- *NS-SEC groups 4 to 8*	-.038	.429	.963	.929
- *Unclassifiable*	-.303	.533	.738	.569
Year of study (*First* is reference category)				
- *Second*	-.043	.381	.958	.911
- *Third or later*	-.194	.389	.823	.617
Extraversion	.042	.029	1.042	.145
Neuroticism	.001	.028	1.001	.979
Subjective norm : peers	.133	.134	1.142	.324
Subjective norm : parents/family	-.015	.178	.985	.932

* significant at the 5% level ** significant at the 1% level
Nagelkerke R^2 = 0.035

Has borrowed through an overdraft	B	SE	Exp(B)	sig
CONSTANT	-1.295	.934	.274	.166
Gender (*Male* is reference category)				
- *Female*	.101	.238	1.106	.672
Age on entry (*Under 21* is reference category)				
- *21 or over*	.752	.329	2.121	.022 *
Ethnicity (*White* is reference category)				
- *Minority ethnic community*	-.771	.402	.463	.055
Social class (*NS-SEC 1 -3* is reference category)				
- *NS-SEC groups 4 to 8*	.070	.309	1.072	.821
- *Unclassifiable*	-.004	.398	.996	.992
Year of study (*First* is reference category)				
- *Second*	.083	.248	1.087	.737
- *Third or later*	.795	.288	2.213	.006 **
Extraversion	.053	.020	1.054	.009 **
Neuroticism	.021	.020	1.021	.284
Subjective norm : peers	.240	.092	1.271	.009 **
Subjective norm : parents/family	-.203	.134	.816	.128

* significant at the 5% level ** significant at the 1% level
Nagelkerke R^2 = 0.118

Uses a credit card occasionally or frequently	**B**	**SE**	**Exp(B)**	**sig**
CONSTANT	-1.579	1.075	.206	.142
Gender (*Male* is reference category)				
- *Female*	-.166	.273	.847	.545
Age on entry (*Under 21* is reference category)				
- *21 or over*	.786	.299	2.195	.008 **
Ethnicity (*White* is reference category)				
- *Minority ethnic community*	.058	.524	1.059	.912
Social class (*NS-SEC 1 -3* is reference category)				
- *NS-SEC groups 4 to 8*	-.537	.378	.584	.156
- *Unclassifiable*	.533	.387	1.704	.169
Year of study (*First* is reference category)				
- *Second*	.333	.321	1.396	.299
- *Third or later*	.776	.316	2.173	.014 *
Extraversion	-.026	.023	.974	.255
Neuroticism	.013	.022	1.013	.548
Subjective norm : peers	.103	.111	1.109	.352
Subjective norm : parents/family	-.075	.134	.928	.575

* significant at the 5% level ** significant at the 1% level

Nagelkerke R^2 = 0.081

Has borrowed from their family	**B**	**SE**	**Exp(B)**	**sig**
CONSTANT	-1.468	.837	.230	.079
Gender (*Male* is reference category)				
- *Female*	-.199	.211	.820	.347
Age on entry (*Under 21* is reference category)				
- *21 or over*	-.312	.260	.732	.230
Ethnicity (*White* is reference category)				
- *Minority ethnic community*	-.047	.388	.954	.903
Social class (*NS-SEC 1 -3* is reference category)				
- *NS-SEC groups 4 to 8*	-.209	.269	.811	.436
- *Unclassifiable*	-.314	.348	.731	.367
Year of study (*First* is reference category)				
- *Second*	-.419	.231	.658	.070
- *Third or later*	-.047	.239	.954	.843
Extraversion	.040	.018	1.041	.025 *
Neuroticism	.021	.017	1.021	.224
Subjective norm : peers	.129	.083	1.138	.120
Subjective norm : parents/family	-.075	.108	.928	.486

* significant at the 5% level ** significant at the 1% level

Nagelkerke R^2 = 0.044

Appendix B

Financial knowledge score	**B**	**SE**	**t**	**sig**
CONSTANT	7.936	1.009	7.869	.000 **
Gender (*Male* is reference category)				
- *Female*	-1.039	.217	-4.791	.000 **
Age on entry (*Under 21* is reference category)				
- *21 or over*	.565	.263	2.144	.033 *
Ethnicity (*White* is reference category)				
- *Minority ethnic community*	-.175	.395	-.444	.657
Social class (*NS-SEC 1 -3* is reference category)				
- *NS-SEC groups 4 to 8*	-.516	.273	-1.888	.060
- *Unclassifiable*	-.328	.351	-.934	.351
Year of study (*First* is reference category)				
- *Second*	.440	.238	1.847	.065
- *Third or later*	.659	.249	2.644	.008 *
Extraversion	.009	.018	.510	.611
Neuroticism	-.019	.018	-1.059	.290
Subjective norm : peers	-.051	.085	-.603	.547
Subjective norm : parents/family	.106	.112	.946	.344

* significant at the 5% level ** significant at the 1% level

$R^2 = 0.106$

Appendix C

Anticipates borrowing through an overdraft	**B**	**SE**	**Exp(B)**	**sig**
CONSTANT	-3.453	.993	.032	.001 **
Gender (*Male* is reference category)				
- *Female*	.359	.227	1.432	.113
Age on entry (*Under 21* is reference category)				
- *21 or over*	.063	.272	1.065	.818
Ethnicity (*White* is reference category)				
- *Minority ethnic community*	-.164	.400	.849	.682
Social class (*NS-SEC 1 -3* is reference category)				
- *NS-SEC groups 4 to 8*	.447	.282	1.564	.113
- *Unclassifiable*	.080	.357	1.084	.822
Year of study (*First* is reference category)				
- *Second*	.277	.240	1.320	.247
- *Third or later*	.599	.256	1.821	.019 *
Extraversion	.039	.019	1.040	.038 *
Neuroticism	.025	.018	1.025	.172
Subjective norm : peers	.169	.086	1.185	.050 *
Subjective norm : parents/family	-.161	.117	.852	.170
Financial knowledge	.187	.050	1.206	.000 **

* significant at the 5% level ** significant at the 1% level

Nagelkerke R^2 = 0.113

Anticipates borrowing through a credit card	**B**	**SE**	**Exp(B)**	**sig**
CONSTANT	-4.355	1.543	.013	.005 **
Gender (*Male* is reference category)				
- *Female*	-.023	.332	.977	.944
Age on entry (*Under 21* is reference category)				
- *21 or over*	.449	.354	1.567	.205
Ethnicity (*White* is reference category)				
- *Minority ethnic community*	.448	.560	1.564	.424
Social class (*NS-SEC 1 -3* is reference category)				
- *NS-SEC groups 4 to 8*	.196	.401	1.216	.626
- *Unclassifiable*	.623	.463	1.864	.179
Year of study (*First* is reference category)				
- *Second*	1.051	.424	2.861	.013 *
- *Third or later*	1.156	.428	3.177	.007 **
Extraversion	-.031	.028	.969	.264
Neuroticism	.036	.027	1.036	.181
Subjective norm : peers	.293	.138	1.341	.034 *
Subjective norm : parents/family	-.195	.153	.823	.202
Financial knowledge	.135	.077	1.144	.081

* significant at the 5% level ** significant at the 1% level

Nagelkerke R^2 = 0.122

Anticipates borrowing from their family	**B**	**SE**	**Exp(B)**	**sig**
CONSTANT	-1.810	.989	.164	.067
Gender (*Male* is reference category)				
- *Female*	.243	.228	1.276	.286
Age on entry (*Under 21* is reference category)				
- *21 or over*	.025	.274	1.026	.927
Ethnicity (*White* is reference category)				
- *Minority ethnic community*	-.206	.422	.813	.625
Social class (*NS-SEC 1 -3* is reference category)				
- *NS-SEC groups 4 to 8*	-.324	.286	.723	.257
- *Unclassifiable*	-.649	.391	.523	.097
Year of study (*First* is reference category)				
- *Second*	-.219	.245	.803	.371
- *Third or later*	-.093	.256	.911	.716
Extraversion	.020	.019	1.021	.281
Neuroticism	.007	.018	1.007	.697
Subjective norm : peers	.133	.088	1.142	.131
Subjective norm : parents/family	.080	.116	1.084	.489
Financial knowledge	-.020	.049	.980	.677

* significant at the 5% level ** significant at the 1% level

Nagelkerke R^2 = 0.044

Appendix D

Anticipated debt on graduation	**B**	**SE**	**t**	**sig**
CONSTANT	2.522	.629	4.007	.000
Gender (*Male* is reference category)				
- *Female*	-.021	.126	-.169	.866
Age on entry (*Under 21* is reference category)				
- *21 or over*	-.210	.153	-1.371	.171
Ethnicity (*White* is reference category)				
- *Minority ethnic community*	.369	.231	1.598	.111
Social class (*NS-SEC 1 -3* is reference category)				
- *NS-SEC groups 4 to 8*	.153	.137	1.122	.263
- *Unclassifiable*	-.024	.145	-.167	.867
Year of study (*First* is reference category)				
- *Second*	.152	.155	.976	.329
- *Third or later*	.269	.206	1.310	.191
Extraversion	-.009	.011	-.863	.389
Neuroticism	.009	.010	.854	.393
Subjective norm : peers	.046	.049	.930	.353
Subjective norm : parents/family	.015	.064	.229	.819
Financial knowledge	.001	.028	.025	.980
Has borrowed through student loan	2.325	.190	12.248	.000 **
Has borrowed through overdraft	.676	.136	4.985	.000 **
Uses a credit card occasionally or frequently	-.197	.151	-1.308	.192
Has borrowed from family	.193	.117	1.655	.099

* significant at the 5% level ** significant at the 1% level

$R^2 = 0.357$

Appendix E

Perceived money management skills	**B**	**SE**	**t**	**sig**
CONSTANT	4.818	.571	8.444	.000 **
Gender (*Male* is reference category)				
- *Female*	.268	.115	2.324	.021 *
Age on entry (*Under 21* is reference category)				
- *21 or over*	-.114	.140	-.812	.417
Ethnicity (*White* is reference category)				
- *Minority ethnic community*	-.077	.208	-.369	.712
Social class (*NS-SEC 1 -3* is reference category)				
- *NS-SEC groups 4 to 8*	-.166	.140	-1.182	.238
- *Unclassifiable*	.115	.187	.616	.539
Year of study (*First* is reference category)				
- *Second*	-.067	.124	-.541	.589
- *Third or later*	.109	.132	.832	.406
Extraversion	-.018	.010	-1.870	.062
Neuroticism	-.034	.009	-3.697	.000 **
Subjective norm : peers	-.071	.045	-1.586	.113
Subjective norm : parents/family	.122	.058	2.090	.037 *
Financial knowledge	.052	.025	2.044	.042 *
Has borrowed through student loan	-.185	.172	-1.078	.282
Has borrowed through overdraft	-.628	.123	-5.107	.000 **
Uses a credit card occasionally or frequently	-.329	.138	-2.378	.018 *
Has borrowed from family	-.535	.106	-5.059	.000 **

* significant at the 5% level ** significant at the 1% level

$R^2 = 0.234$

Resignation to indebtedness	**B**	**SE**	**t**	**sig**
CONSTANT	2.549	.478	5.335	.000 **
Gender (*Male* is reference category)				
- *Female*	.010	.108	.096	.923
Age on entry (*Under 21* is reference category)				
- *21 or over*	.043	.129	.334	.739
Ethnicity (*White* is reference category)				
- *Minority ethnic community*	.180	.204	.883	.378
Social class (*NS-SEC 1 -3* is reference category)				
- *NS-SEC groups 4 to 8*	-.207	.132	-1.565	.118
- *Unclassifiable*	-.045	.173	-.260	.795
Year of study (*First* is reference category)				
- *Second*	.094	.115	.819	.413
- *Third or later*	.109	.123	.885	.377
Extraversion	-.009	.009	-.991	.322
Neuroticism	.005	.009	.579	.563
Subjective norm : peers	.045	.042	1.082	.280
Subjective norm : parents/family	.025	.054	.461	.645
Financial knowledge	.022	.024	.930	.353
Has borrowed through student loan	.842	.163	5.169	.000 **
Has borrowed through overdraft	.363	.116	3.138	.002 **
Uses a credit card occasionally or frequently	-.294	.127	-2.310	.021 *
Has borrowed from family	.016	.099	.162	.872

* significant at the 5% level ** significant at the 1% level

$R^2 = 0.130$

Level of debt-comfort	**B**	**SE**	**t**	**sig**
CONSTANT	2.748	.560	4.906	.000 **
Gender (*Male* is reference category)				
- *Female*	-.189	.126	-1.499	.135
Age on entry (*Under 21* is reference category)				
- *21 or over*	-.397	.153	-2.596	.010 **
Ethnicity (*White* is reference category)				
- *Minority ethnic community*	-.071	.237	-.301	.764
Social class (*NS-SEC 1 -3* is reference category)				
- *NS-SEC groups 4 to 8*	-.273	.155	-1.761	.079
- *Unclassifiable*	-.167	.205	-.818	.414
Year of study (*First* is reference category)				
- *Second*	-.096	.136	-.707	.480
- *Third or later*	-.119	.145	-.820	.412
Extraversion	-.008	.010	-.740	.460
Neuroticism	-.013	.010	-1.288	.199
Subjective norm : peers	.054	.049	1.092	.275
Subjective norm : parents/family	-.040	.065	-.619	.536
Financial knowledge	-.018	.028	-.636	.525
Has borrowed through student loan	.388	.189	2.055	.041 *
Has borrowed through overdraft	.259	.135	1.914	.056
Uses a credit card occasionally or frequently	.198	.153	1.292	.197
Has borrowed from family	.251	.116	2.153	.032 *

* significant at the 5% level ** significant at the 1% level

$R^2 = 0.085$

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[1] This figure is derived from students on the pre-2006 financial support system, for whom the amounts available to borrow are lower. This explains why it is out of step with the other estimates, which are based on forward estimates by students on the post-2006 system, which offers greater loans to cover higher tuition fees.

[2] The financial system for students entering from 2006 onwards was significantly different from the previous one, with higher tuition fees, an extended government-sponsored loan system, a grant for low income students and a myriad of university-specific bursaries.

[3] As there is a high proportion of missing data relating to students' social class in official datasets (NAO, 2008), the scale of under-representation could not be accurately measured and so it was not felt appropriate to weight the responses.