

Attitudes to debt among indebted undergraduates: a cross-national exploratory factor analysis

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Abstract

This paper reports the results of a cross-national study spanning England, New Zealand and the United States. A total of 496 first year undergraduates studying business or social science completed a 20-item questionnaire. This focused on their attitudes to their debt incurred while studying, as measured on a five-point Likert scale. A factor analysis model was developed, from which four consistent factors emerged, explaining 45 percent of the variation and consistent between countries. These factors were named: Anxiety, Utility-For-Lifestyle, Utility-For-Investment and Confidence. The first three factors were found to be uncorrelated with each other, but higher Confidence was associated with lower levels of Anxiety and Utility-for-Lifestyle and higher levels of Utility-for-Investment. The relationship with previous studies and implications for theory and practice are discussed.

Highlights

- Cross-national study of 496 undergraduates from England, New Zealand and the US
- Attitudes to debt found to have four factors
- Factors named Anxiety, Utility-For-Lifestyle, Utility-For-Investment and Confidence
- Confidence significantly correlated to other factors

Keywords

Debt attitudes; factor analysis; higher education; consumer attitudes and behaviour; educational finance

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1 Introduction

Over the last fifty years, the likelihood of students across the developed world accruing debt to finance their studies has grown rapidly (Usher, 2005). This has partly been a response to the 'massification' of higher education, with higher numbers progressing to university and governments reducing or abolishing grant funding as it has become judged to be an unsustainable drain on the public purse. Another strand has been the liberalisation of various forms of commercial credit, with young people having access to various forms of overdraft, credit card and personal loan that would not have been available to their antecedents. Banks and other financial institutions have taken the view that students are useful customers to have, as they tend to turn into high-earning graduates who will invest, save or borrow in greater depth later in their working lives.

From the students' perspective, borrowing to fund extended education is generally seen as a good investment, with long-term rates of return that exceed the cost of borrowing for most (Walker and Zhu, 2011). There has been a strong (and growing) perception that a degree is essential for entry into lucrative non-manual careers, such some judgement of the expected return becomes a component within the cost/benefit analysis that those considering university make. This is wholly consistent with *human capital theory* (Becker, 1994), which predicts that individuals will make economically rational decisions about their education, as with other forms of capital investment, although Brynin (2013) questions the extent to which prospective students are in a position to make this assessment. However, there are also wider wellbeing returns that act as an additional incentive, for example around the diversity of social experiences, improved job satisfaction or an increase in life expectancy associated with being a graduate. Furthermore, Brown (2003) argues that due to an 'opportunity gap' in graduate labour markets in developed economies, growing competition for a static number of jobs causes a drive for more credentials in order to establish a personal competitive advantage, such that contemporary students require a longer education to achieve the same occupational status as previous generations. This, in turn, is driving increased borrowing, for both undergraduate and postgraduate study.

With student debt thus becoming commonplace in many developed nations, it is surprising that more attention has not been placed on understanding what factors drive students' attitudes and behaviours around debt. This clearly has implications for theory, policy and practice, both for the individual and for wider society. This paper aims to move forward understanding of how students construct their attitudes to debt. In particular, it will address the following research questions:

1. How many dimensions are there within the complex attitudes around student debt and what do these dimensions describe?
2. What is the most mathematically elegant, robust and parsimonious model for these dimensions?
3. To what extent is this model consistent between countries?

This paper describes the results of an cross-national study, with data collected from corresponding

samples of students from England¹, the United States (US) and New Zealand (NZ). It is grounded broadly within a behavioural economics perspective, seeking to understand economic decisions that may be complex, contradictory or irrational. The primary data are subjected to exploratory factor analysis, with the construction and description of these factors being reflected upon and discussed. Finally, some implications for theory, policy and practice are suggested.

1.1 Policy contexts

The three countries represented in this study have varying approaches to the provision of governmental loans to students, amounts available and varying take-up rates.

- In *England*, government loans for undergraduate students were introduced in the late 1980s to supplement the existing programme of means-tested grants for living costs. Their scale and importance has grown rapidly since the early 2000s, when grants were temporarily abolished and tuition fees were introduced. English students have been paying the full cost of their tuition (up to £9,000 a year) since 2012, with loans available to defer the cost; there is also a complex system of means-tested grants and bursaries in place to offset a proportion of the fees (usually no more than one-third). Combined with an expanded loan available for maintenance costs, the English cohort in this study could borrow up to £14,500 per year, up from around £8,500 for those entering in 2011. Total indebtedness over the course of a three-year degree could therefore exceed £40,000.

Student loans in England have always been based on a delayed repayment system, where the first payment is ordinarily due nine months graduation. However, if the graduate is earning under a threshold, repayments can be deferred. From 2012, this threshold was raised to £21,000 a year, which is some way above the average graduate starting salary, such that most students would not expect to repay for some years. Repayments are set at 9 percent of income over the threshold. Prior to 2012, the interest on student loans was pegged to the retail price index, but there is now a means-tested premium of up to 3 percent above inflation. Take-up of student loans prior to 2012 was around 85 percent, but it is now approaching 100 percent as very few students are able to fund maintenance and tuition costs from their existing resources.

- The Student Loan Scheme in *New Zealand* has undergone a number of modifications since its introduction in 1992. Students are able to borrow for course related costs such as textbooks, living expenses, and to pay for tuition fees. Initially, the interest rate charged on student loans was indexed to the consumer price index; however in 2000, interest was abolished for full-time students and part-time students on low incomes. This was extended

¹ The constituent nations within the United Kingdom have different student funding systems and levels of indebtedness. The data in this paper and the references to social policy focus on England, which has the highest levels of average debt. The English system is similar to those in Wales and Northern Ireland, while Scotland does not charge tuition fees and so average debt levels are much lower.

in 2006, when loans were made interest free for all borrowers living in New Zealand, even including ex-students who were no longer studying. In 2010, a voluntary repayment bonus was introduced, which is a 10 percent bonus borrowers can receive for making voluntary repayments that total NZ\$500 or more in a tax year. So a borrower making a voluntary repayment of NZ\$1,000 receives NZ\$1,100 credit against their loan balance. The policy aimed to encourage borrowers to make extra repayments to repay their loans more quickly (and reduce costs to the government); however, it was not providing the expected value and was repealed in 2013.

As of 2012, 82 percent of full-time students took out a student loan, up from around 68 percent prior to the abolition of interest in 2006. The total amount of loan available to the current cohort of students is around NZ\$13,500 a year. Repayments are made once income reaches a threshold (around NZ\$19,000) and are pegged at 12 percent on income over this threshold.

- In the US, education is often labelled the 'pathway out of poverty' and government support for post-secondary and college education, primarily need-based funding, has been available since 1965. Through the 1992 reauthorisation of the Higher Education Act, access to federal funds for education broadened, annual borrowing limits were increased, and all students, regardless of financial need, gained access to unsubsidised student loans. To obtain federal funding, students apply for financial aid annually and, based on family income and related factors, students receive a personalized statement of the total financial aid available to them. Educational funding in the US is complex, covering a wide range of sources including need-based grants and scholarships (e.g. Federal Pell Grants, TEACH grants and aid for military families), subsidised and unsubsidised student loans, loans to parents and work-study options. Consequently, the amount available as well as repayment costs, including the interest charged and payment terms, vary depending on the type of aid received, who owns the debt (i.e. student or parent) and financial ability to pay the debt (e.g. employment status and annual income).

In 2011, the estimated 25.5 million undergraduates received 51 percent of their aid in the form of grants, 40 percent as loans, and 9 percent in a combination of tax credits and work-study. In that same period, public four-year college students graduated with average debt US\$23,800, with 57 percent of students taking loans. For the first time since 1992, total education borrowing, including federal student and parent loans, as well as non-federal loans, declined by 4 percent in real terms (Baum, Ma, & Payea, 2012).

1.2 Literature review

The phenomenon of student debt has come under research scrutiny since it began to emerge on a large scale in the 1980s and 1990s. Those writing from a sociological or social policy perspective have tended to focus on the relationship between student debt and elements of the student

experience, such as mental health (e.g. Cooke et al., 2004; Jessop et al., 2005) and propensity to withdraw (e.g. Quinn et al., 2005). There has also been interest in the demographics of student debt, including around gender, social class and ethnicity (e.g. Hesketh, 1999; Scott et al., 2001; Kettleby et al., 2008; Harding, 2011).

Perhaps most importantly, however, student debt has been repeatedly theorised as a major determinant in the demand for higher education, in the UK at least (e.g. Pennell and West, 2005; Jones and Thomas, 2005; Callender, 2012; Wilkins et al., 2013). It is generally argued that an underlying fear of debt discourages people from applying to university, especially those from lower socio-economic groups and others with a stronger aversion towards borrowing (e.g. women and those from minority ethnic communities). For this reason, all three countries in this study employ a variety of student aid programmes (either at national, regional or institutional level) to ameliorate the debt burden for those considered to be most at risk of being deterred.

However, this argument has been somewhat undermined by recent events. England has seen two recent episodes (2006 and 2012) where tuition fees have been tripled, with a concomitant sharp increase in average student debt. However, demand has remained buoyant and there is evidence to suggest that any dissuasive effect has more keenly been felt within more affluent communities who might be expected to have a lower price elasticity of demand (Harrison 2012; Higher Education Funding Council for England 2013). This suggests that the construction of students' attitudes and responses to debt are more complex than simply aversion or fear.

The first notable attempt to investigate the construction of students' debt attitudes was published in Davies and Lea (1995), who developed a unidimensional Attitudes to Debt scale, constructed to run from pro-debt to anti-debt. This scale comprises 14 items covering both philosophical/moral positions and more everyday responses. It was found to be correlated to lifestyle and total existing debt, such that those with higher expenditure on clothing and entertaining and higher overall debt professed more pro-debt attitudes. It was also argued that comfort with debt increased the longer that a student found themselves indebted. Furthermore, they argue that there may be two types of student debtor – those who borrow due to a lack of family resources or an unexpected incident, and those who borrow to meet their lifestyle expectations, knowing that there is a family safety net in place or that their future incomes will provide them with a route out of debt.

Callender and Jackson (2005) used a reduced version of the Attitudes to Debt scale with prospective students to argue that an underlying 'debt aversion' was major driver in decisions taken by young people about their educational investments. However, the data showed only a very modest relationship between debt aversion, demographic variables and the demand for higher education. Callender and Jackson also included a scale for 'cost/benefit balance of going to university', which might more appropriately be described as the perceived utility of debt under human capital theory, although this too appeared to have limited impact on anticipated future behaviour; its correlation with debt aversion was not explored.

Drawing on a US sample, Norvilitis et al. (2003) question the cross-cultural and cross-temporal reliability (as measured by Cronbach's alpha) of the Attitudes to Debt scale. Haultain et al. (2010) continue in the same vein, drawing attention to its low measures of internal reliability across a range of studies in the UK and NZ. Instead, they use data from New Zealand school pupils and undergraduates to construct a two-factor model of student debt attitudes. The two uncorrelated factors were identified as being Fear of Debt and Debt Utility - i.e. the extent to which an individual appreciated the usefulness of debt to pay for things that would otherwise be unaffordable. Under this model, it would therefore be possible to simultaneously fear taking on debt, but be willing to do so on for the benefits it brings.

Using the Attitudes to Debt scale on another US sample, Norvilitis et al. (2006) concluded that it was not a useful predictor of the amount of debt held by students. Subsequent research (Norvilitis and Mao 2013) finds no predictive value in either US or Chinese samples in terms of financial confidence, financial well-being or credit card use, while questioning the internal reliability of both the Attitudes to Debt scale and Haultain et al.'s bidimensional scale.

Others have independently attempted to develop measures of debt attitudes. Eckel et al. (2007, 259) use a Canadian sample in an experimental study to argue that 'debt aversion plays little or no role in the demand for postsecondary education finance in the form of a loan', although the measure used is of questionable validity, being based primarily on existing patterns of credit card use. Chudry et al. (2011) similarly find that UK students' future borrowing intentions are not influenced by their measure of Debt Aversion; one of four debt attitudes that they isolate using exploratory factor analysis, along with Debt Comfort, Self-Image Importance and Money Management. Only the last of these was a significant predictor, with students who showed an engaged and instrumental approach to student finance being more likely to expect to borrow in the future. Thus, while Chudry and colleagues identify four orthogonal dimensions of variation, only one of these has a causal role in borrowing intentions.

Focusing on student credit card use rather than student loans, Peltier et al. (2013) develop a six factor model from a US sample: Anxiety, Impulsivity, Social Status, Parental Involvement, Locus of Control and Compulsivity. Perhaps counterintuitively, they find that Anxiety is associated with higher indebtedness, suggesting either that the latter drives the former or that some use debt to offset their anxiety; such issues with causality are common in this area and raise questions about the development of models. Peltier and colleagues do find that the two factors involving the perceived utility of debt (Impulsivity and Social Status) are positively associated with borrowing.

Bachan (2013) has a similar finding, with a very simple measure of self-reported debt aversion being associated with higher debt, rather than an hypothesised lower debt – albeit at a non-significant level. Conversely, Oosterbeek and van den Broek (2009) find that the same measure adds significant predictive power to their model of student borrowing in the Netherlands. As such, there are clearly unresolved issues with the development of a psychological model for students' attitudes to debt that is robust across culture and student finance systems.

Finally, the rationale behind this study derives, in part, from the qualitative data reported in Harrison et al. (in press). Based on interviews with first year students, this proposes a six-way typology of debt attitudes ranging from 'debt positive' to 'debt angry', with a centre-of-gravity around those who were well-informed about what they were doing and resigned to indebtedness as a 'normal' feature of being a student. These data were used as a starting point for the development of the questionnaire, which seeks to investigate the validity of this typology and factors that define it.

2 Methodology

This study is quantitative in nature, working from the position that individuals are able to provide an acceptably accurate self-report of their attitudes using common tools such as the Likert scale. While such data is inevitably less rich or detailed than what might be collected through interviews, its numerical nature permits the use of well-established statistical techniques to infer a model of the main determinants of attitude and how these dimensions interact with each other. This, in turn, provides insight into the extent of variability within the sample and, by association, wider and international populations.

This is not to suggest that such attitudes are deterministic at the individual level, nor that they are necessarily constant through time and situation. It is also appreciated that self-reports will be socially constructed and that this may compromise their reliability, although the anonymous and impersonal approach used will have mitigated against this. In addition, the sample size made possible through a quantitative approach allows for a higher degree of representativeness and tolerance for individual measurement errors.

The study was centred around three universities - one each from England, the US and New Zealand. These were selected on the basis that they shared a similar student cohort, being mid-ranked institutions within their own national context. All three were situated within medium sized cities and had a mixed local and national recruitment profile that broadly echoed the national demographic profile for higher education students. As such, they are assumed to be typical sites from which defensibly-representative samples might be drawn.

The sampling frame for the study comprised full-time 'home' (i.e. not international) undergraduates in their first year on business (including management, marketing, accountancy, commerce, economics and applied mathematics) or social science (including sociology, psychology, politics and education) programmes; there was no age criterion. First year students were used to ensure that debt was a new experience for them, such that their indebtedness had limited time to change their attitudes; this reduces concerns about the direction of causality. International students were excluded as they are often ineligible for student loans in the country in which they are studying.

As noted above, the questionnaire used was developed from the results of the interview data

reported in Harrison et al (in press). The scales developed by Davies and Lea (1995) and Haultain et al. (2010) were not felt to be appropriate as they focused primarily on an abstract concept of debt, rather than students' responses to their lived experiences of indebtedness. The original questionnaire was piloted in England in December 2012 and a number of refinements made as a result. The questionnaire also contained demographic questions, a personality inventory and a financial literacy test (the results of these components are to be reported elsewhere). The final version of the questionnaire comprised 20 items measured on a Likert scale running from 1 (Strongly agree) to 5 (Strongly disagree).

The data were collected in an interval spanning October 2013 and January 2014. Due to the different cycles of the academic years in the three countries, this corresponded to a period roughly halfway through the students' first year of study. A nearly identical version of the questionnaire was used, with minor differences to accommodate local vocabulary and spelling.

A similar approach to data collection was used in each university. The questionnaire was rendered online using Moodle in NZ and Survey Monkey in England and the US, with e-mail and in-person reminders being provided over the course of one month. Responses from students outside the sampling frame and those without debt were subsequently removed by hand. In England and NZ, a prize draw incentive was used to increase response rates, while students in the US were offered class credit. Both approaches helped to ameliorate self-selection bias by engaging with groups who might not typically respond to an unsolicited survey invitation.

A total of 496 valid responses were received, comprising 240 from NZ, 199 from England and 57 from the US (where fewer students have student loans). Table 1 provides descriptive statistics for the three national samples.

Table 1: Sample descriptive statistics

| | England | | NZ | | US | | ALL | |
|------------------------------------|---------|----|-----|----|----|----|-----|----|
| | n | % | n | % | n | % | N | % |
| Social science degree | 75 | 38 | 114 | 48 | 26 | 46 | 215 | 43 |
| Business degree | 124 | 62 | 126 | 52 | 31 | 54 | 281 | 57 |
| Male | 66 | 33 | 92 | 38 | 26 | 46 | 184 | 37 |
| Female | 133 | 67 | 148 | 62 | 31 | 54 | 312 | 63 |
| Majority ethnic group | 178 | 89 | 208 | 88 | 41 | 72 | 427 | 81 |
| Minority ethnic group | 21 | 11 | 32 | 12 | 16 | 28 | 69 | 14 |
| Mother has degree | 43 | 22 | 91 | 38 | 33 | 58 | 167 | 34 |
| Mother does not have degree | 156 | 78 | 149 | 62 | 24 | 42 | 329 | 66 |
| Father has degree | 54 | 27 | 94 | 39 | 31 | 54 | 179 | 36 |
| Father does not have degree | 145 | 73 | 156 | 61 | 26 | 46 | 317 | 64 |

Response rates were high for a general online survey. For example, the rate in England was 16

percent, 17 percent in NZ and 27 percent in the US. The samples were found to be broadly representative of the populations from which they were drawn by demographic variables, although women were slightly over-represented and students from minority ethnic groups were slightly under-represented.

SPSS v19 was used for the analysis, with a specialist additional module using an enhanced module for factor analysis using R v2.10.1.

3 Results

Table 2 shows the cross-national contrasts between means and standard deviations for each of the 20 questionnaire items. As the items were not normally distributed, the Kruskal-Wallis analysis of variance test was used to examine the differences between countries, with a Mann-Whitney pairwise *post hoc* analysis to determine which comparisons were significant; a 5 percent significance level was used.

English students were significantly more likely than US or NZ students to view debt as an expected part of attending university ($KW_2 = 28.380, p < .001$) and less prone to worry about the affordability of repayments than US students ($KW_2 = 6.948, p = .031$), but also more likely than NZ students to view this as unfair ($KW_2 = 10.293, p = .006$). US students had a significantly higher propensity than English and NZ students to see a degree as a means of securing a job ($KW_2 = 18.117, p < .001$) and higher earnings ($KW_2 = 15.940, p < .001$). US students also professed less use of debt for luxuries than both other nationalities ($KW_2 = 12.075, p = .002$) and less use of debt to fund their social life than English students ($KW_2 = 8.487, p = .014$), while being less likely to assert that they knew what credit card and overdraft debts they were incurring than both English and NZ students ($KW_2 = 9.040, p = .011$). NZ students were significantly more likely, on average, than English students to see university expenses as the best use for student debt ($KW_2 = 20.395, p < .001$). However, they had a lower propensity to believe they knew the repayment terms for their loan ($KW_2 = 7.820, p = .020$) and a higher propensity to report feel socially isolated by their debt ($KW_2 = 11.735, p = .003$).

Exploratory factor analysis was then undertaken on the 20 items. In terms of the suitability of factor analysis for this dataset, Bartlett's test for sphericity was significant ($\chi^2_{190} = 3385.963, p < .001$), while the KMO statistic of .775 demonstrated a strong sampling adequacy. In addition, the large sample size of 496 gave a nearly 25:1 ratio of cases-to-variables, which is in line with both traditional and more recent ideas of best practice (Field, 2005; Hogarty et al., 2005). On this basis, it was felt appropriate to move to factor extraction.

Following Ruscio and Roche (2012) and Courtney (2013), the dataset was explored using the *comparison data* and *parallel analysis* techniques in preference to the less reliable scree plot or Kaiser's rule approaches. These two approaches both suggested that a four-factor solution would be most appropriate for the data; there was no evidence for fewer than four factors.

Table 2: means and standard deviations for each item, by country

| | England | | NZ | | US | | ALL | |
|---------------------------------------------------------------------------------|---------|-------|------|-------|------|-------|------|-------|
| | M | S.D. | M | S.D. | M | S.D. | M | S.D. |
| Debt is an expected outcome of attending university | 1.67 | .846 | 1.93 | .851 | 2.30 | 1.205 | 1.87 | .915 |
| Educational loan debt is a good investment for the future | 2.29 | .928 | 2.28 | .916 | 2.21 | .967 | 2.28 | .925 |
| Even though I am incurring debt now, it will be worth it in the future | 1.92 | .819 | 1.78 | .681 | 1.89 | .846 | 1.85 | .759 |
| I expect to earn more in the future because I went to university | 1.78 | .738 | 1.66 | .725 | 1.38 | .524 | 1.68 | .720 |
| I feel I have a good understanding of how student loans work | 2.24 | .970 | 2.31 | .918 | 2.33 | .970 | 2.29 | .944 |
| I feel isolated by my student debt | 3.78 | 1.024 | 3.50 | 1.019 | 3.84 | 1.041 | 3.65 | 1.032 |
| I have a good idea about how much credit card and overdraft debt I am incurring | 1.95 | .878 | 2.12 | 1.151 | 2.55 | 1.212 | 2.09 | 1.066 |
| I have a good idea about how much student loan debt I am incurring | 2.08 | .992 | 1.99 | 1.021 | 2.09 | .986 | 2.04 | 1.004 |
| I have a greater chance of getting a job if I have a degree | 1.74 | .961 | 1.75 | .713 | 1.35 | .588 | 1.70 | .701 |
| I know about the repayment terms for my student loan | 2.57 | 1.143 | 2.83 | 1.130 | 2.52 | 1.177 | 2.69 | 1.147 |
| I minimize my spending to minimize my debt | 2.41 | 1.124 | 2.46 | 1.062 | 2.34 | 1.066 | 2.43 | 1.086 |
| I sometimes can't sleep because I worry about how much debt I am in | 3.96 | 1.114 | 3.67 | 1.246 | 3.78 | 1.228 | 3.80 | 1.198 |
| I use debt so I don't miss out on 'normal' student experiences | 3.49 | 1.145 | 3.40 | 1.116 | 3.26 | 1.231 | 3.42 | 1.141 |
| I use debt to pay for a good social life | 3.63 | 1.115 | 3.83 | 1.063 | 4.06 | 1.089 | 3.77 | 1.093 |
| I use debt to pay for luxuries | 4.01 | .964 | 4.05 | .982 | 4.45 | .812 | 4.08 | .965 |
| I will start to deal with my student debt once I leave university and get a job | 2.01 | .856 | 1.90 | 1.003 | 1.89 | .880 | 1.94 | .932 |
| I worry about debt to the point where it affects my grades | 4.11 | .973 | 4.07 | 1.004 | 3.96 | 1.247 | 4.07 | 1.020 |
| I worry that the repayments on my debt will become unaffordable | 3.13 | 1.265 | 2.97 | 1.111 | 2.68 | 1.183 | 3.00 | 1.188 |
| The best use of my student debt is to pay for my university expenses | 1.84 | .781 | 1.53 | .690 | 1.78 | 1.057 | 1.68 | .789 |
| The debt I create as a student is an unfair start to my working life | 2.58 | 1.116 | 2.92 | 1.128 | 2.71 | 1.165 | 2.76 | 1.136 |

Scales run from 1 = Strongly agree to 5 = Strongly disagree

As the research question was focused on identifying an underlying structure of latent variables, a factor analysis approach was selected in preference to principal components analysis. Due to the use of an ordinal Likert scale, *principal axis factoring* was selected as the extraction method, using polychoric correlations in preference to Pearson correlations. As there were no specific grounds to assume that factors relating to debt attitudes should not be correlated, oblique rotation (*Oblimin*) was used to generate a final model. Orthogonal rotation (using the *Varimax* procedure) was also explored, but this provided a similar solution while artificially preventing the factors from correlating.

The full factor loadings are presented in Appendix A. Given the exploratory nature of the study, a loading threshold of .400 was used to isolate the most important items comprising each factor and these results are presented in Table 3 below.

Table 3: Factor loadings for four factor solution with oblique rotation

| | Loaded items | Loading |
|-----------------|------------------------------------------------------------------------|----------------|
| Factor 1 | I sometimes can't sleep because I worry about how much debt I am in | .783 |
| | I worry about debt to the point where it affects my grades | .778 |
| | I feel isolated by my student debt | .750 |
| | I worry that the repayments on my debt will become unaffordable | .690 |
| | The debt I create as a student is an unfair start to my working life | .526 |
| Factor 2 | I use debt to pay for a good social life | -.805 |
| | I use debt to pay for luxuries | -.760 |
| | I use debt so I don't miss out on 'normal' student experiences | -.652 |
| | I minimize my spending to minimize my debt | .449 |
| Factor 3 | Even though I am incurring debt now, it will be worth it in the future | .662 |
| | I have a greater chance of getting a job if I have a degree | .552 |
| | I expect to earn more in the future because I went to university | .546 |
| | Educational loan debt is a good investment for the future | .445 |
| | The best use of my student debt is to pay for my university expenses | .431 |
| Factor 4 | I feel I have a good understanding of how student loans work | .872 |
| | I know about the repayment terms for my student loan | .780 |
| | I have a good idea about how much student loan debt I am incurring | .598 |

The four-factor model provided an elegant and 'overdetermined' solution, with no items loaded on multiple factors and a strong conceptual coherence within the factors; three items did not load substantially on any factors and were therefore discounted. The rotated solution captured 45 percent of the variance within the dataset. The four factors were named as follows:

1. **Anxiety.** This factor measured the extent to which the student was undergoing negative affect due to their indebtedness, including a sense of unfairness.

2. **Utility-For-Lifestyle (UFL).** This factor measured the individual's use of credit to support an active social life which matched their normative expectations of 'studentness'. (NB: This factor was negatively loaded.)
3. **Utility-For-Investment (UFI).** This factor measured the extent to which the individual believed that their debt was an investment that would lead to better (and better paid) work in the future.
4. **Confidence.** This factor measured the individual's self-reported awareness of their debt burden and the conditions for its repayment.

As can be seen in Table 4 below, the polychoric correlations showed a degree of inter-relationship between the four factors. Specifically, the Confidence factor was significantly correlated with all three other factors. Students who were better informed about their debt were, on average, less anxious about it, more likely to believe that it was a good investment and less likely to incur debt for lifestyle expenses. It is also interesting to note that the two factors relating to the utility of debt were not correlated, suggesting that they are distinct aspects of how students view the credit that is available to them and that they do not form a zero-sum game where being positive about debt for personal investment precludes using it for lifestyle purposes, and *vice versa*. Finally, it can be seen that Anxiety is not correlated with either of the utility factors.

Table 4: Polychoric correlation coefficients between extracted factors

| | Confidence | UFI | UFL |
|----------------|-------------------|------------|------------|
| Anxiety | -.203** | -.037 | -.034 |
| UFL | .241** | <.001 | |
| UFI | .256** | | |

* $p < .05$, ** $p < .01$

Finally, the factor analysis was rerun for England and NZ samples; the US sample was too small for meaningful analysis. While there were minor differences in loading and the amount of variance captured by the factors, the basic model was consistent between the two countries.

4 Discussion

The four-factor model of students' responses to debt reported in this paper provides a relatively strong description of the underlying data, explaining around half of the variance through factors that are conceptually coherent. As far as could be examined, the model is robust between countries. As such, it is asserted that the model is a good representation of attitudes among indebted higher education students – at least in the three countries studied.

It adds to the already established literature (Norvilis et al. 2003; Norvilis et al. 2006; Haultain et al.

2010; Norvilis et al. 2013) findings that Davies and Lea's (1995) unidimensional Attitudes to Debt scale is insufficient to adequately describe this conceptual space. This could be due to changes in the role of, and meaning ascribed, to student debt in the intervening twenty years, as it has become more widespread and a more accepted aspect of the university experience. Alternatively, it may be that the small sample size compromised their analysis.

The current study is also in a degree of conflict with the findings of Haultain et al. (2010) who argued for a two-factor model. The two studies are not entirely incompatible, however. Firstly, the Anxiety factor in this study and their Fear of Debt factor are readily analogous, suggesting that an affective component is crucial to understanding students' responses to debt. Secondly, there is a clear congruence between their Debt Utility factor and the factor named Utility-For-Lifestyle in the current study. It is suggested that both are measuring a latent attitudinal variable that relates to the extent to which a student is comfortable with using debt to meet the lifestyle that they have chosen. Such relationship between lifestyle expectations and the use of debt has been asserted by Davies and Lea (1995), Metcalf (2005) and Harrison and Chudry (2011), among others. It is noted that US students, on average, perceive a lower utility in using debt for social or luxury purposes.

However, this study argues for an additional conceptualisation of utility that is absent from Haultain et al. (2010). The third factor in this study's model (Utility-For-Investment) addresses the students belief in education as a long-term financial investment and the extent to which the accumulation of debt is acceptable given higher future employability and earnings expectations. In other words, it reflects the belief in human capital theory (Becker, 1994) and the relative return-on-investment from accruing debt to improve one's own labour market position. This study argues that this form of utility is orthogonal to lifestyle utility and represents a separate dimension in students' responses to debt.

The final factor in this study (Confidence) has not previously emerged in the literature. It represents a latent variable described in the extent to which the individual feels informed and in control of their debt. It may be related, to a degree, to Locus of Control (e.g. Peltier et al., 2013) or Money Management (Chudry et al., 2011), which have been hypothesised to have a role in debt behaviour in other studies. It is assumed to be related to, but does not directly capture, their knowledge, nor their behavioural reaction to the information at their disposal. However, it is reasonable to contend that there is an underlying openness to seeking out and internalising information about debt which is personal in nature and which may impact on behaviour. In other words, it may be possible to feel well-informed and confident, but still anxious, leading to debt reduction or avoidance; conversely, one might be unconfident, but sufficiently comfortable with indebtedness to increase borrowing.

The Confidence factor plays an interesting role within the model, being significantly correlated with all three other factors. Further work is needed to explore the extent to which these relationships may be causal. For example, does having high perceived knowledge about finances help to reduce anxiety, or do those who are anxious about debt refuse to interest themselves in

financial matters, preferring a position of 'blissful ignorance'? Similarly, does financial confidence help students to make economically-rational cost/benefit decisions about educational borrowing, or is there an unknown latent variable that predicts both the desire understand one's finances and the extent to which one 'buys into' human capital theory?

The model presented in this paper is consistent with the six types proposed by Harrison et al. (in press), but it suggests that these types represent clustered positionings within a multi-dimension model, rather than the dimensions of this model. For example, the 'debt oblivious' type appears to be described by a combination of low Anxiety and Confidence and high Utility-For-Lifestyle, while the 'debt positive' type has low Anxiety coupled with a high Utility-For-Investment. There is therefore scope for possible new types not described in Harrison et al. (in press). For example, an individual with high Confidence, Utility-For-Investment and Anxiety scores might be described as 'debt risky', calculatingly trading off their short-term anxiety for long-term benefit. A putative type of those with high Anxiety and low Utility-For-Investment are likely to be those dissuaded from higher education altogether, with possible debt causing them negative affect with no belief that the outcomes of accruing the debt will be positive.

The analysis of the average item scores demonstrate that US students, on average, have a stronger belief in the ability of higher education to provide labour market advantage. This is consistent with stereotypes around the meritocratic nature of American society and an underlying credentialism that leads to career success. As this belief is lower in England and NZ, it might be hypothesised that students in these countries are more sensitive to the costs of higher education relative to the long-term benefits.

Indeed, this might begin to explain recent trends in applications in England, where a significant increase in the expected debt burden has counterintuitively led to a fall in applications from higher socio-economic groups (Harrison 2012; HEFCE 2013). It is suggested that those dissuaded were those who were unconvinced about their return-on-investment from student loans, perhaps due to a declining graduate premium, overqualification and plausible alternatives to higher education in establishing a lucrative career (Brown et al., 2011). This might be heightened further for those with modest academic ability who are unlikely to have top graduate opportunities opened up for them by a degree. Conversely, those from lower socio-economic groups (like their American peers) appear to continue to express a strong belief in the ability of higher education to offer them greater opportunities and incomes than would otherwise be available.

As such, the Utility-For-Investment factor in this study should perhaps be conceptualised as a form of disposition towards risk, grounded in a cost-benefit analysis that weighs up the financial and emotional costs of their debt with their estimates of the long-term return (in various forms) from their educational investment. Indeed, Eckel et al. (2007), Oosterbeek and van den Broek (2009) and Bachan (2013) all find that a willingness to take risks are associated with increased indebtedness, while Brynin (2013) argues for an inherent risk in higher education due its uncertain returns. Furthermore, the Utility-For-Investment factor may also capture a sense of the individual's temporal horizon, with educational investment necessarily requiring a long-term

perspective. Indeed, Eckel et al. (2007), Oosterbeek and van den Broek (2009), Norvilitis and MacLean (2010) and Bachan (2013) all report that patience, gratification delay and discounting are also salient to borrowing decisions. What remains unclear is the direction of this effect and whether it might be expected to work in opposite ways for student loans (long-term investment) and credit cards and other forms of consumer credit (short-term gratification).

The recent increase in student loan take-up in New Zealand (from around 68 percent in 2005 to 82 percent in 2012) could therefore be seen as a result of a reduction in the perceived risk associated with them; the period has also seen a 20 percent rise in university admissions. This may also explain why NZ students are less aware of the repayment terms for their loan than their peers from England and the US. However, New Zealand also has a very strong tradition of graduates repaying their loans quickly after graduation (19 percent doing so within one year in 2011), suggesting that anxiety about indebtedness remains high.

Given the recent changes to student funding in England, it is unsurprising to find that this group are most likely to feel that debt is unfair; whether this is a result of the significantly higher student debt burden in England or simply a short-term response to the heightened media and political discourse cannot be determined from the data. Despite the perceived unfairness, British students were nevertheless more confident, on average, of meeting their debt obligations, suggesting that they drew comfort from the safety nets in place.

5 Limitations and further research

This study gathers data from three nations, but the sample in each instance is drawn from a single university. It is unclear the extent to which this might influence the data, although the universities selected were broadly typical for their national context, which should help to mitigate sampling bias. It is also important to reference the self-selection bias inherent in those responding to the questionnaire. Once again, reasonable efforts were made to mitigate this and the individual samples were broadly representative of the populations from which they were drawn on a range of demographic markers.

A deliberate decision was taken to limit analysis to those students with first-hand experience of student debt. These data therefore reflect the views of those who have engaged with indebtedness and exclude those who have chosen not to accrue debt, either because their financial circumstances do not require it or they have an alternative form of income (e.g. part-time work). As such, it does not provide a comprehensive picture of student responses to debt, although it is felt unlikely that data from those not accruing debt would radically alter the dimensions discussed in this paper. Exploring this group (now very rare in England and increasingly uncommon in NZ) in more detail would require a future study.

Finally, this paper has purposefully focused on the development of the model; a future article will report further analysis of the inter-country and demographic differences.

6 Conclusions

This paper reports a four-factor model of students' responses to indebtedness, based on 496 individuals drawn from three countries. These factors have been named Anxiety, Utility-For-Investment, Utility-For-Lifestyle and Confidence; the first three were uncorrelated, but Confidence shows a relationship with all three other factors. This provides a strong challenge to Davies and Lea's (1995) unidimensional model, while extending Haultain et al.'s (2010) bidimensional model and finding a degree of congruence with other researchers' findings.

The discussion develops the argument that the interplay between, in particular, Anxiety and Utility-For-Investment has an important role in defining whether an individual seeks to enter higher education and secondary choices such as location and course. For example, an individual may bear the short-term anxiety of indebtedness if they have a high expectation of what their education will provide in the long-term. The role of Confidence is more moot, it being impossible to determine the extent to which knowledge about student and commercial loans drives responsible and low-anxiety borrowing, as opposed to indebtedness leading to higher levels of knowledge about debt. Given that our sample is drawn from new undergraduates, it is suggested that the former is more likely to hold.

This being the case, there are useful ramifications for university managers and policymakers. Firstly, improving confidence about money management may lead to reduced anxiety and lifestyle spending, while bolstering a belief in the utility of borrowing for personal and career development. Secondly, and perhaps more importantly, this belief would appear to be key in decisions about entering higher education, such that outreach and recruitment work that focuses on strengthening concepts of utility and reducing perceived risk is more likely to be successful. There is clearly an ethical component to this too, with a requirement that information is presented honestly, notwithstanding the significant unknowns about graduate employment outcomes. The other ramification for policy is that applications from lower socio-economic groups are likely to remain buoyant as long as there is a reasonable expectation of improved long-term life chances. This may be strong in times of high youth unemployment, but potentially more fragile when opportunities are many and financially attractive.

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Appendix A: Factor loadings for four-factor model

| | F1 | F2 | F3 | F4 |
|---------------------------------------------------------------------------------|-------------|--------------|-------------|-------------|
| I sometimes can't sleep because I worry about how much debt I am in | .783 | -.094 | .007 | .003 |
| I worry about debt to the point where it affects my grades | .778 | -.130 | -.047 | -.026 |
| I feel isolated by my student debt | .750 | -.101 | .000 | -.048 |
| I worry that the repayments on my debt will become unaffordable | .690 | .045 | .006 | -.135 |
| The debt I create as a student is an unfair start to my working life | .526 | -.001 | -.077 | -.086 |
| I use debt to pay for a good social life | .082 | -.805 | .038 | .031 |
| I use debt to pay for luxuries | .096 | -.760 | -.004 | .042 |
| I use debt so I don't miss out on 'normal' student experiences | .200 | -.652 | .132 | -.021 |
| I minimize my spending to minimize my debt | .357 | .449 | .013 | .177 |
| Even though I am incurring debt now, it will be worth it in the future | -.281 | .022 | .662 | .075 |
| I have a greater chance of getting a job if I have a degree | -.104 | .015 | .552 | .008 |
| I expect to earn more in the future because I went to university | -.138 | -.040 | .546 | -.051 |
| Educational loan debt is a good investment for the future | -.347 | -.064 | .445 | .088 |
| The best use of my student debt is to pay for my university expenses | .250 | .348 | .431 | .057 |
| I will start to deal with my student debt once I leave university and get a job | .101 | -.009 | .350 | .040 |
| Debt is an expected outcome of attending university | .153 | -.086 | .338 | -.009 |
| I feel I have a good understanding of how student loans work | -.037 | -.170 | -.070 | .872 |
| I know about the repayment terms for my student loan | -.097 | -.012 | -.093 | .780 |
| I have a good idea about how much student loan debt I am incurring | -.008 | .010 | .082 | .598 |
| I have a good idea about how much credit card and overdraft debt I am incurring | .009 | .128 | .060 | .367 |

Loadings of over .400 are highlighted