Perception of financial satisfaction and its implications for free first-year education in New Zealand university students

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Financial stress predicts negative academic, social, and psychological outcomes in a tertiary student's life. To investigate whether free first-year education could mitigate financial stress in New Zealand tertiary education students, 270 psychology students from the University of Canterbury completed scales measuring financial stress, perceived socio-economic status, and debt attitude as well as demographic status and financial status variables over a series of two experiments. The efficacy of the New Zealand government's free first-year tertiary education policy on reducing students' financial stress was investigated in contrast with taking a temporal discounting approach, i.e. putting less value on future gains: Half of the participants were primed with a paragraph regarding free first-year education. Students' financial stress increased with increasing debt, inability to save money, and thinking that one's weekly income was not sufficient for living needs, but objective financial status variables such as their income, receiving Student Allowance, and part-time employment were not associated with students' financial stress. Priming with the government's free first-year education policy did not decrease first-year students' financial stress, indicating that the students were taking a temporal discounting approach. Overall, the findings suggest that 1) the government's focus could usefully shift to students' present financial concerns and 2) students' financial counselling and financial management skills could be enhanced.

Keywords: *Student Allowance, Financial Stress, Tertiary Education, Priming, Temporal Discounting.*

Introduction

University students in the Western world are expected to be conscious of both academic duties and financial obligations. A perception that one's financial obligations exceed their available resources to cope with these obligations is defined as financial stress (Gurung, 2013; Sulsky & Smith, 2005). Financial stress leads to negative academic and mental health outcomes (Drentea, 2000; Joo, Durband, & Grable, 2008; Krause, 1997; Letkiewicz et al., 2014; Skinner, Zautra, & Reich, 2004). The aim of the current study was to examine the effect of recently introduced free first-year tertiary education on perceived financial stress in tertiary students in New Zealand (NZ). In the rest of this introduction, the negative outcomes of financial stress are briefly pointed out, followed by a discussion of student debt as a factor that exacerbates financial stress (Letkiewicz et al., 2014; Morra, Regehr, & Ginsburg, 2008). A mitigating factor of financial stress, perception of one's financial status (Dwyer, McCloud, & Hodson, 2012; Lim, Montalto, & Heckman, 2014), is also discussed. Finally, the rationale for the current research is presented.

Financial stress predicts negative academic outcomes. According to a news article in The Australian, Australian students reported that financial instability was one of the reasons they would drop out of university (Hare, 2017). Joo et al. (2008) conducted an online survey in the USA to examine the attributes of students who dropped out of college or at least reduced their course work to get employment. They found that financial stress in students, financial stress in the family, older age, and work engagement led students to drop out or reduce their course work. In addition, Letkiewicz et al. (2014) investigated the expected time to finish a university degree in relation to economic and social factors using data from 2010 Ohio Student Financial Wellness Survey. They found that financial stress predicted the odds of graduation taking more than four years, except in those individuals who met with financial counsellors or were employed – being more likely to graduate on time. It can be noted from the mentioned two studies, Joo et al. (2008) and Letkiewicz et al. (2014), that financial stress leads to negative academic outcomes. However, there is inconsistency in relation to work engagement: Joo et al. (2008) showed that it led students to drop out, while Letkiewicz et al. (2014) determined that it helped students graduate on time.

Financial stress is associated with mental health problems. Generally, financial stress has been a predictor of low self-esteem (Dohrenwend & Dohrenwend, 1982), negative emotions (Skinner et al., 2004), depression (Krause, 1997), and anxiety (Drentea, 2000) in all population groups. Hyun, Quinn, Madon, and Lustig (2006) reported that students' confidence in financial status (self-report that they had enough financial support to complete their studies) was negatively related to mental health issues such as hopelessness, exhaustion, sadness, depression, and being overwhelmed. As well as investigating factors mitigating financial burden, Hyun et al. (2006) revealed the subjective nature of financial stress such that it was self-report of financial support availability that decreased mental health issues. Notably, financial

stress affects both dimensions of subjective happiness, well-being and psychological distress, as explained by Headey and Wearing (1992). More specifically, financial stress influences well-being negatively by affecting one's emotional state (Skinner et al., 2004); and it enhances psychological distress as a consequence of leading to depression and anxiety (Drentea, 2000; Krause, 1997).

Letkiewicz et al. (2014) showed that students who had high amounts of debt, those who spent more than they earned (using credit cards) and those who had car loans reported more financial stress. These findings were further supported by Lim et al. (2014), wherein they analysed responses from 2010 Ohio Student Financial Wellness Survey to identify factors leading to financial stress in college students. According to them, the two most important stressors in a student's life appeared to be expecting a large student loan at graduation and inability to participate in the same activities as peers due to insufficient funds. As evident from this study, not just the present debt, but even anticipation of future debt can lead to financial stress. This finding is further supported by Morra et al. (2008) who studied a sample of Canadian medical students and reported that both present and future anticipated debt predicted perceived financial stress. Moreover, anticipated debt accounted for extra variance in financial stress beyond that produced by current debt.

A US study by Dwyer et al. (2012) found that the level of student debt had three types of effects on degree completion. A student loan up to 10,000 USD increased the probability of students completing their degrees; the effect plateaued at 10,000 USD; and debt beyond 10,000 USD decreased the probability of degree completion. There are noticeable differences between the US and NZ Student Loan schemes. For instance, most NZ tertiary students take Student Loan in NZ from the government (The Student Loan Scheme Annual Report, 2020) and there are no private loans. While in the US, around 8% students acquire private loans (Backman, 2020) and some Student Loans in the US could be forgiven (Friedman, 2019). However, the amount of average student debt is almost similar in both countries: around 29000 USD in the US and around 27000 NZD in NZ (Friedman, 2019; Student Loan Scheme Annual Report 2017, 2018). The average student loan, thus, could potentially decrease the odds of degree completion in both countries based on the study by Dwyer et al. (2012). Consistent with this, Scott (2009) reported that a majority of NZ tertiary students did not finish their degrees. However, the leading factor behind this, according to Scott (2009) seemed to be being a part-time student. Unfortunately, there are no other published studies directly examining the effects of financial stress on degree completion in NZ tertiary students.

Research studies have found that lower socio-economic status was one of the factors leading to increased financial stress across all generations (Caplan & Schooler, 2007; Drentea, 2000). Dwyer et al. (2012) reported that students from higher socio-economic strata were less influenced by the effects of increasing student debt on completing their degrees. The effects of socio-economic status may be mirrored by students' perceptions of their financial situation. Lim et al. (2014) also reported that those with better financial efficacy (high rating of "I manage my money well") and financial optimism (high rating of "being optimistic about the future despite financial problems") reported less financial stress despite the effects of expecting a high amount of student loan at graduation and inability to participate in the same activities as peers. In the light of these findings, it can be argued that the students who perceive themselves as financially better off will potentially report lower financial stress.

An NZ tertiary education student faces similar financial challenges to students in other developed countries. Except in a limited number of European and South American countries (Goetz, 2017), university students or their families finance students' studies and pay for their day to day living needs (Saker & Hawkins, 2017). Some governments, such as NZ, provide Student Loan services (Barr & Crawford, 2005) such that students' tuition fees are paid by the state services and automatically deducted from their incomes later on. However, day to day living allowances reportedly do not keep pace with expenses and students struggle to make ends meet, leading to financial stress (Enoka, 2015). For instance, longitudinal studies by the NZ Union of Students' Associations (NZUSA) revealed that a typical student (full time, borrowing money for weekly costs, no Student Allowance, and working part-time) was close to severe financial distress; a third of students reported a severe financial burden; and the weekly income of a typical student was not sufficient for day to day needs. Moreover, final-year students had an extra concern. They tended to report increased distress as they estimated that their Student Loans would be more than 30,000 NZD on average by graduation. These students self-reported that increasing Student Loans were affecting their future decisions such as their ability to buy a home, go overseas, study further, and have children (Income & expenditure report 2017 - The cost of being a student in New Zealand, 2018).

This outcome is not unexpected since only a third of NZ tertiary education students are eligible to receive Student Allowances and Accommodation Benefits (non-repayable amounts paid weekly to full-time or semi-full time students to help with living costs and rental accommodation) (Accomodation Benefit, 2018; Student Allowance, 2018). The rest of them may borrow weekly Living Costs – a payable loan that adds up towards the Student Loan balance (Student Loan living costs, 2018) - work on a part-time or full-time basis in-term and during summer holidays, or be assisted by their families (Income & expenditure report 2017 - The cost of being a student in New Zealand, 2018) to pay for their day to day or present financial needs. The most common present financial obligations include living costs, such as accommodation, food, bills, commuting, and phone and internet; as well as one-off costs, such as rental property bonds, computer, and text books (Income & expenditure report 2017 - The cost of being a student in New Zealand, 2018; Typical living costs, 2018). Besides present needs, NZ tertiary education students face a future financial obligation in the form of paying back their Student Loan, as they do not have to pay it back while studying, because they have no or low income (Income & expenditure report 2017 - The cost of being a student in New Zealand, 2018; Paying back

your student loan, 2018).

The Labour-led government of NZ elected in 2017 decided to address the Student Loan issue, in the form of instituting free first-year tertiary education, as one of their key policy changes. The policy was announced in November 2017 and students starting tertiary education in 2018 did not pay any tuition fees (Fees-free tertiary study on fast track, 2018). The policy was meant to "invest in education" and get the student "closer to a more affordable future" (Fees-free tertiary study on fast track, 2018). This policy shift might have noticeable effects because Student Loan is the most common source of paying university tuition fees in NZ. Based on figures from the Ministry of Education, 176,938 individuals (which comprises 70% of eligible students) borrowed from Student Loan in 2016 and the average amount borrowed was 9053 NZD. Based on NZUSA figures, 79% of students reported that they paid their tuition fee via Student Loan (Income & expenditure report 2017 - The cost of being a student in New Zealand, 2018).

It is well-established in the literature that those with lower incomes and younger ages (such as students) attribute less value to future gains and losses – a phenomenon known as temporal discounting (Ainslie & Haslam, 1992; Thaler, 1981). Moreover, the discount rates for gains are usually more pronounced than for losses, i.e., these individuals tend to discount more if it is a delayed future gain compared to a delayed future loss (Thaler, 1981). If the fees-free first year policy is examined in the light of temporal discounting, we argue that the government has been addressing future economic concerns of tertiary education students, but these they would temporally discount anyway. In the meantime, the present financial concerns are increased because the cost of living as a student has increased since 2012 (Income & expenditure report 2017 - The cost of being a student in New Zealand, 2018). We developed the current studies to test the argument that students will disregard this future financial gain in the form of fees-free first year policy. If it is true that students discount the future gain for the present needs, their financial stress should not reduce even if they are reminded of the fees-free policy. We used priming with the fees-free policy to explore this possibility. More specifically, if temporal discounting happens, priming was not expected to decreases students' financial stress. On the other hand, if such priming decreases the financial stress of students, it would mean that the government was on the right track with the fees-free policy, easing the future financial burden of tertiary students.

The current studies investigated university students' financial stress using the Students' Financial Stress Scale – Aotearoa (SFSS-A). SFSS-A was preferred over readily available scales such as Revised COPE Inventory (Brougham, Zail, Mendoza, & Miller, 2009) and Financial Stress Scale – College Version (Northern, O'Brien, & Goetz, 2010). The latter two scales have been developed in the USA, but since the loan profiles and the economic obligations of NZ students are different to those of American students (Backman, 2020; Friedman, 2019; Student Loan Scheme Annual Report 2017, 2018), we decided to use a scale that would be more relevant to NZ tertiary students. The SFSS-A was originally developed by a Research Methods (PSYC344) course students of University of Canterbury in 2017 (PSYC344 Students, 2017). Of course, these students were subject to financial stress in a NZ context. We further measured the well-known relationships between debt vs financial stress and perceived financial status vs financial stress to confirm the validity of SFSS-A, so that students with higher debt levels and those with lower perception of their financial and subjective social status should report higher financial stress.

Participants also completed the MacArthur Subjective Social Status (SSS) Scale (Adler & Stewart, 2007), answered demography, study status, and financial status questions. Those with higher ratings on the SSS Scale were expected to have less stress.

Study 1

The free first-year education policy applies to first-year university students exclusively. Therefore, it was expected to affect students at different study levels differently. In Study 1, Stage-1 (100 level) students who did not pay tuition fees in 2018 were compared with Stage-2 (200 level) and Stage-3 (300 level) students who did pay tuition fees in 2018. Participants' financial stress was measured using the SFSS-A (PSYC344 Students, 2017) and the SSS (Adler & Stewart, 2007) was used to measure subjective social status. Students were also asked demographic questions and whether or not they had any type of debt (*debt* group and *no-debt* group hereafter), whether or not they received Student Allowance, their employment status, and whether or not they had any Student Loans. To investigate if reminding them of the free first year education policy affects students' stress, half of them were primed with the statement of Education Minister regarding the fees-free first year education policy and the other half were un-primed. If students were employing temporal discounting, we anticipated that such priming would affect all participants similarly, such that the SFSS-A scores of *primed* Stage-1 students would be comparable with the SFSS-A scores of *un-primed* ones (Hypothesis-1a). Alternatively, a simple priming effect would predict that the *primed* Stage-1 students would score lower on SFSS-A than the *un-primed* ones (Hypothesis-1b). Since the fees-free policy does not apply to Stage-2/Stage-3 students, we did not expect any differences in the effects of priming and/or employing temporal discounting. Therefore, we hypothesised that scores in *primed* Stage-2/Stage-3 students would be comparable on SFSS-A with the scores in *un-primed* ones (Hypothesis-2). In addition, it was anticipated that all students in the *debt* group, regardless of the study year, would score higher than the *no-debt* group on SFSS-A (Hypothesis-3). Finally, it was hypothesised that the participants who ranked themselves with higher SSS, regardless of study year, would score lower on the SFSS-A than those who ranked themselves lower SSS (Hypothesis-4).

METHOD

Participants

One hundred and twenty participants consisting of 60 Stage-1 and 60 Stage-2 or Stage-3 psychology students of the University of Canterbury were subjects of this experiment. Stage-1 students were credited 1% towards

their final introductory psychology course grades. Stage-2 and Stage-3 students received 10 NZD gift vouchers each; and went into a draw to win an additional 50 NZD gift voucher. The study was a 2 (*primed*, *un-primed*) X 2 (*debt*, *no-debt*) between-subject ANCOVA design. The independent variables were condition (*primed* vs. *un-primed*) and whether they were in the debt group or no-debt group. SSS functioned as a covariate. The SFSS-A score was the dependent variable of the study.

Materials

SFSS-A. This is a 22-item unidimensional self-report scale (see Table 1) designed to measure university students' perceived stress due to financial burden (PSYC344 Students, 2017). The scale was generated by PSYC344 (Research Methods) course students of the School of Psychology, Speech and Hearing, University of Canterbury in 2017. It has acceptable levels of convergent and discriminant validities and its internal consistency reliability is $\alpha = 0.93$ (PSYC344 Students, 2017). The participants responded to each item on a 7-point Likert scale (Barnette, 2012) from 1 (strongly disagree) to 7 (strongly agree). The rating scale appeared opposite each question. A sample statement of SFSS-A is, "worrying about money affects my daily mood". Two items, 4 and 20 are reverse scored, indicated with (*R*s) in Table 1.

Table 1. Means and standard deviations of SFSS-A items.

Items	*M*	*SD*
1. I think about how to reduce my spending every day	5.38*	1.10
2. I constantly worry about my financial situation	4.93	1.75
3. I try not to think about how much debt I am in	4.52	1.70
4. My income is sufficient to meet my needs (*R*)	3.79	1.83
5. I think my financial position has a negative effect on my social life	4.27	1.70
6. I think my financial position has a negative effect on my study	3.88	1.75
7. Not meeting my weekly financial demands is constantly on my mind	3.78	1.91
8. Worrying about money affects my daily mood	4.15	1.81
9. I feel like I don't have enough money to do the things I enjoy	4.96	1.68
10. I feel ashamed if I have to borrow money	5.38*	1.67
11. I worry about unplanned expenses	5.22*	1.64
12. I find myself stressing about upcoming payments	4.73	1.73
13. I feel stressed when I receive my bills	4.68	1.66
14. I am often concerned I will not have enough funds to make necessary purchases	4.48	1.73
15. I feel I need to get a job to cover my immediate needs	5.04*	1.81
16. I spend all my money on living costs	4.06	1.81
17. I regularly miss out on social occasions due to finances	3.76	1.82
18. I compromise my well-being due to my financial situation	3.68	1.84
19. I have avoided checking my bank balance out of fear	3.50	2.12*
20. I am able to easily balance my finances with my social life (*R*)	3.88	1.51
21. Financial stress restricts my social life	3.83	1.73
22. I avoid interactions that involve money	4.07	1.54

Note. M = mean. *SD* = standard deviation.* indicates the removed item. The rating scale was from 1 (strongly disagree) to 7 (strongly agree). *R* = reverse scored.

Subjective Social Status (SSS) Scale. SSS (Adler & Stewart, 2007) is a self-report measure of social status that asks participants to compare themselves with the people of their community, using a numbered stepladder image. The scale has reportedly demonstrated good test-retest reliability for overall socioeconomic position ($k = 0.62$) (Giatti, Camelo, Rodrigues, & Barreto, 2012). It is a 10-point scale with ladder rungs from 1 (the worst-off) to 10 (the best off) and we used it as a measure of overall socioeconomic position.

The survey also asked questions regarding age group, gender, ethnicity, level of education, employment status, whether or not participants received Student Allowance from the government or any other form of financial support, and if they had any form of debt (*debt* group and *no-debt* group). The survey concluded by thanking respondents for their participation.

Procedure

The questionnaire was distributed online. Participants read the information sheet, consented to participate and were randomly assigned to *primed* and *un-primed* conditions. The *primed* condition read a statement by the Education Minister Chris Hipkins declaring free first year tertiary education for first-year students in 2018. The *un-primed* participants read a paragraph of the same length about the nature of New Zealand. Participants then completed the scales and answered demography questions on their own. Answers were anonymously pooled after data collection, so the participants were not debriefed immediately. Instead, they were asked whether or not they wanted to receive a copy of the results. The questionnaire took 10-15 minutes to complete. IBM Statistical Package

for Social Sciences (SPSS) version 25 was used to analyse the data.

RESULTS

Demography data

The majority of participants identified as female, between 18-24 years old, and NZ Europeans. Most of them reported some unspecified form of debt, were full-time students, and reported not receiving Student Allowance. Less than half of the participants were not currently employed. Please refer to Table 2 for a further breakdown of demographic data.

Table 2. Demography data breakdown for all participants of Study 1

		%	*Frequency*
Gender			
	Female	80.00	96
	Male	19.20	23
	Other	0.80	1
Age group			
	Under 18	9.20	11
	18 - 24	76.70	92
	25 - 34	10.00	12
	35 - 44	1.70	2
	45 - 54	2.50	3
Ethnicity			
	Pākehā (NZ European)	75.00	90
	NZ Māori	2.50	3
	Pacific Islander	2.50	3
	South Asian	4.20	5
	African	0.80	1
	East Asian	3.30	4
	Middle Eastern	0.80	1
	Other	10.80	13
Debt			
	Yes	70.80	85
	No	29.20	35
Student Allowance			
	Yes	40.00	48
	No	60.00	72
Employment status			
	Employed part-time	55.80	67
	Not currently employed	44.20	53
Course work			
	Full-time student	95.80	115
	Part-time student	4.50	5

Initial observations of the data

Participants' scores of Subjective Social Status (SSS) scale were normally distributed with skewness of -0.08 (*SE* = 0.22) and kurtosis of -0.62 (*SE* = 0.44). Categories ranged from 2-8, with a mode of 4, *M* = 4.90, and *SD* = 1.52. The means and standard deviations were monitored for extreme floor and ceiling effects, thus items 1, 10, 11, and 15 (Table 1) were removed due to high average scores (*M* > 5) and item 19 was removed due to a high standard deviation (*SD* > 2). Only a few participants did not think about ways to reduce their spending (1), did not feel ashamed of borrowing money (10), did not worry about unplanned expenses (11), and did not feel they needed jobs to cover their immediate needs (15). The composite variable of SFSS-A was calculated by averaging responses of each participant over the remaining 17 items. The reliability analysis determined that the item-total correlations of all items were above 0.3. The internal consistency reliability of the scale was acceptable (α= .94). The 17 items had an average score of *M* = 4.20 and *SD* = 1.25.

Priming and temporal discounting

The sample was divided into two groups (Stage-1 and Stage-2/Stage-3) and their mean stress scores were analysed separately using analysis of covariance (ANCOVA) controlling for SSS. The perceived financial stress of *primed* Stage-1 students was not significantly different from that of the *un-primed* Stage-1 students, $F(1,55) = 3.86$, $p = .054$, supporting Hypothesis-1a. The alternative hypothesis (Hypothesis-1b) was thus not supported. In addition, average perceived financial stress did not differ between the *primed* and *un-primed* conditions for Stage-2/Stage-3 students, $F(1,55) = 0.23$, $p = .64$, supporting Hypothesis-2. These findings suggest that Stage-1 students were potentially employing temporal discounting regarding fees-free tertiary education.

For the next section, all participants were treated as one group.

Effects of debt, SSS and demographic variables

Bivariate correlations showed that financial stress decreased with higher SSS ($r = -.42$, $p < .001$) and with receipt of a Student Allowance ($r = -.23$, $p = .013$); and increased if there was any form of debt ($r = .35$, $p < .001$) (See Figure 1 for a scatterplot of the relationship between the SFSS-A and SSS).

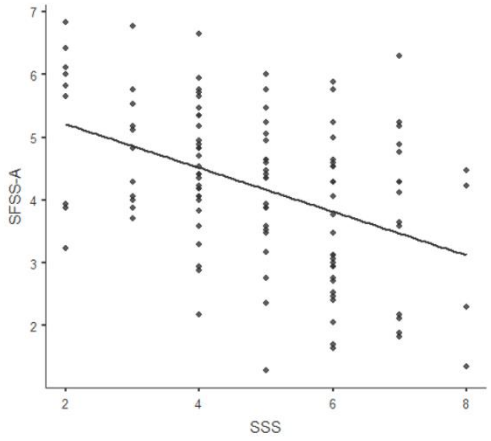

Figure 1. Scatterplot of relationship between SFSS-A and SSS in Study 1.

There were no significant correlations of SFSS-A with gender, age, level of study, employment or study status being full- or part-time. However, when we excluded the shared variance of independent variables using multiple regression, it was found that only debt and SSS were significant predictors of perceived financial stress, $R^2 = .29$, $F(3,116) = 15.57$, $p < .001$, and not Student Allowance (Table 3, Model 1).

Therefore, we excluded Student Allowance using hierarchical regression and obtained Model 2 (see Table 3 again). Model 2 showed that participants' reported debt and SSS predicted financial stress with a large effect size

(f^2 = 0.36). Thus, debt was a strong predictor of perceived financial stress with β = .32 as predicted by Hypothesis-3 (see Table 3 for other model parameters).

The participants' higher SSS scores predicted lower perceived financial stress with β = -.40, as anticipated in Hypothesis-4. Furthermore, the scores of SSS, *primed* and *un-primed* conditions, and *debt* group and *no-debt* group were centred to assess the moderation effects of SSS on the mentioned measures. It turned out that SSS did not moderate perceived financial stress of *primed* vs. *un-primed* participants, β = .07, $t(116) = .88$, $p = .38$. Likewise, SSS did not moderate the perceived financial stress of the *debt* group vs. *no-debt* group, β = .05, $t(116) = .68$, $p = .50$. Thus, although subjective social status mitigated financial stress in general, it did not particularly mitigate the financial stress of those with debt.

Table 3. Model Coefficients for multiple regression analysis in Study 1

Predictor	Estimate	*SE*	*t*	*p*	St Est
Model 1					
Intercept	7.18	0.47	15.22	< .001	
SSS	-0.30	0.07	-4.48	< .001	-0.37
Having debt	0.85	0.22	3.95	< .001	0.31
Student Allowance	-0.25	0.21	-1.20	0.233	-0.10
Model 2					
Intercept	6.91	0.41	16.66	< .001	
SSS	-0.32	0.06	-5.00	< .001	-0.40
Having debt	0.86	0.22	4.01	< .001	0.32

Note. SE = Standard error, *t* = t value, *p* = p value, St Est = Standardised estimate

Study 2

In Study 1 we found that debt led to perceived financial stress, perceived higher socioeconomic status decreased perceived financial stress, and that university students potentially use temporal discounting in regard to perception of fees-free education. The results supported Hypothesis-1a, Hypothesis-2, Hypothesis-3, and Hypothesis-4. Study 1 also showed that SSS affected financial stress, but receiving Student Allowance and the employment status did not. Study 2 added new scales to measure attitudes to debt, and some new questions to investigate the varying effects of subjective and objective financial status variables on financial stress. These questions included asking the subjects to report amount of their weekly income (objective) and what they usually spent it on, report whether or not they thought this amount was enough for their living needs (subjective), and whether or not they could save at the end of each week (subjective). We notice that asking about weekly income being enough is similar to items 4 and 7 of SFSS-A. However, the additional question in Study 2 was a simple yes/no question. Study 2 also sought to replicate the findings of Study 1; therefore, all the Study 1 questions were asked again.

Only Stage-1 psychology students participated in Study 2, but we ensured that no Study 1 participants were re-recruited. Study 2 respondents completed SFSS-A (PSYC344 Students, 2017), the SSS (Adler & Stewart, 2007), and also the Attitudes to Debt Scale (ADS) (Haultain, Kemp, & Chernyshenko, 2010). The ADS consists of two uncorrelated factors, Fear of Debt (emotional aversion to debt) and Debt Utility (the usefulness of acquiring debt) (Haultain et al., 2010), and these have been shown to correlate differently with financial status factors. For instance, Haultain et al. (2010) found the amount of debt was not correlated with Fear of Debt, but it was correlated with Debt Utility ($r = .14$, $p < .01$). On the other hand, the amount of saving decreased Fear of Debt ($r = -.12$, $p < .01$), but not Debt Utility. The respondents were also asked if they would have enrolled if it was not for free education in 2018. The specific hypotheses of Study 2 follow below.

The priming manipulation matched that of Study 1. It was anticipated that the SFSS-A scores of *primed* students would be comparable with the SFSS-A scores of *un-primed* ones (Hypothesis-5). It was anticipated that the participants in the *debt* group would show higher financial stress than the *no-debt* group (Hypothesis-6) and that participants who ranked themselves with higher SSS would demonstrate lower financial stress than the ones who ranked themselves with lower SSS (Hypothesis-7).

It was hypothesised that the students who thought their weekly income was enough would show lower financial stress than those who thought their weekly income was not enough (Hypothesis-8). Similarly, the students who reported that they could save at the end of the week would demonstrate lower financial stress (Hypothesis-9). However, we suspected that the objective variable of actual income level would not affect the financial stress (Hypothesis-10).

It was anticipated that the students who reported higher SSS scores, could save at the end of the week, or thought that their weekly income was sufficient, would report lower Fear of Debt (Hypothesis-11). Moreover, the students who showed higher Fear of Debt were anticipated to show greater financial stress (Hypothesis-12). Consistent with Haultain et al. (2010), it was anticipated that Debt Utility would not correlate with the subjective financial status measures (Hypothesis-13).

METHOD

Participants

One hundred and fifty Stage-1 psychology students of the University of Canterbury participated in the study. They were credited 1% towards their final course grades. The study was a 2 (*primed*, *un-primed*) X 2 (*debt*, *no-debt*) between-subject ANCOVA design. The independent variables were condition (*primed* vs. *un-primed*) and whether they were in the *debt* group or *no-debt* group. SSS functioned as a covariate and the rating of the SFSS-A was the dependent variable of the study.

Materials

The questionnaire contained the SFSS-A (PSYC344 Students, 2017), SSS (Adler & Stewart, 2007) and, additionally, the two-factor Attitude to Debt Scale (ADS) (Haultain et al., 2010).

ADS. ADS (Haultain et al., 2010) is a 9-item two-factor (Fear of Debt and Debt Utility) self-report measure

of attitudes towards debt. Fear of Debt has four items and its internal consistency reliability was $\alpha = 0.65$ (Haultain et al., 2010) when tested with first year university students. Debt Utility has five items and its internal consistency reliability was $\alpha = 0.64$ (Haultain et al., 2010) when tested with first year university students. The participants responded to each item on a 7-point Likert scale (Barnette, 2012) from 1 (strongly disagree) to 7 (strongly agree). The rating scale appeared opposite each question. A sample statement of Fear of Debt is, "One of the worst aspects of tertiary education is being in debt". A sample statement of Debt Utility is, "I would rather be in debt than change my lifestyle".

The survey also asked questions about age, gender, ethnicity, employment status, the amount of weekly income, and being a part-time or a full-time student. In addition, the participants were asked whether or not they received Student Allowance or any other form of financial support, what they spent their weekly income on (living costs, general spending, credit card repayments etc.), and if they had any form of debt (*debt* group and *no-debt* group). Finally, they were asked whether or not they could save at the end of a week, whether or not they thought their incomes were sufficient, and whether or not they would enrol this year had it not been for free education. These three were all answered yes/no. Priming and other instructions were similar to Study 1. Data analysis concentrated on replicating Study 1 results and examining the effects of the newly added variables. We used IBM SPSS version 25 to analyse the data.

RESULTS

Demography data

The majority of participants identified as female and NZ Europeans (See Table 4 for detailed demographic data). The age of participants ranged from 16 to 49 years ($M = 20.94$, $SD = 5.76$) and their weekly income ranged from none to 1000 NZD ($M = 251.85$, $SD = 199.60$), with three participants reporting more than 1000 NZD weekly income. It appeared that most of their weekly income was spent on living costs and general spending such as clothes and recreation.

Most were full-time students and about half were employed part-time. Less than half reported receiving Student Allowance and financial support from other sources such as family and Living Costs loans from the Ministry of Social Development. Only a small number reported some form of debt and had Student Loans. In terms of subjective financial measures, around half of them thought that their weekly income was not sufficient for their living needs, and fewer than half reported that they could not save at the end of the week. In addition, 20% of the students reported they would not have enrolled this year if it was not for *free* education.

Initial observations of the data

The distribution of scores on SSS and data relating to the SFSS-A were very similar to those obtained for Study 1 and hence are not reported here. The composite variable of SFSS-A was calculated in a similar method as Study 1. Likewise, the composite variables of the two factors of ADS, Fear of Debt and Debt Utility, were separately calculated by averaging responses of each participants over items of these scales. It was found that Fear of Debt and Debt Utility were not significantly correlated ($r = -.11$, $p = .19$). The reliability analysis yielded acceptable internal consistency reliabilities for both Fear of Debt ($\alpha = .77$) and Debt Utility ($\alpha = .79$).

Table 4. Demography data breakdown for all participants of Study 2

	%	*Frequency*
Gender		
Female	74.67	112
Male	23.33	35
Other	2.00	3
Ethnicity		
Pākehā (NZ European)	76.67	115
NZ Māori	7.33	11
Pacific Islander	2.00	3
South Asian	4.00	6
East Asian	2.67	4
Other	7.33	11
Debt		
Yes	30.00	45
No	70.00	105
Type of debt		
Student Loan	15.33	23
Finance payment	10.67	16
Credit card	10.00	15
Mortgage	4.67	7
Can save at the end of the week?		
Yes	61.33	92
No	38.67	58
Weekly income is enough?		
Yes	49.33	74
No	50.67	76
Student Allowance		
Yes	43.33	65
No	56.67	85
Employment status		
Employed part-time	55.33	83
Not currently employed	42.00	63
Employed full-time	2.67	4
Financial support from other sources		
Yes	42.00	63
No	58.00	87
Weekly income spent on...		
Living costs	82.67	124
General spending	74.67	112
Commuting	9.33	14
Course work		
Full-time student	89.33	134
Part-time student	10.67	16

Effects of Priming, SSS, demography and financial variables

ANCOVA analysis showed that there were no significant differences in financial stress of *primed* vs. *un-primed* conditions. Thus, the outcome of priming in Study 1 was replicated here and Hypothesis-5 was supported. As demonstrated in Table 5, bivariate correlations showed that financial stress decreased with higher SSS (see also Figure 2), while it increased with age, if the participant was female, if they did not receive financial support from the family, and if they had any form of debt.

Table 5. Pearson correlation scores of SFSS-A with demography and financial status variables

	r	*p* - value
SSS	-0.36	<.001
Age	0.21	0.01
Gender	0.30	<.001
No family financial support	0.23	0.004
Have debt	0.27	0.001
Not saving at end of week	0.53	<.001
Weekly income not enough	0.55	<.001
Having credit card loan	0.19	0.02
Pay for finances	0.21	0.01
Student Allowance	-0.14	0.09
Employment condition	-0.08	0.36
Support from MSD	-0.15	0.08
Amount of weekly income	0.06	0.47

Note. All *p*-values are reported as exact unless they are <.001. SFSS-A = Composite scores of SFSS-A. SSS = Subjective Social Status scale. MSD = Ministry of Social Development

The participants also demonstrated increasing financial stress if they thought they could not save at the end of each week, if they thought their weekly income was not sufficient for their living needs, and if they had credit card loans or finances. Financial stress was not significantly correlated with Student Allowance receipt, employment condition, if they received financial support from the government such as weekly benefits, or with weekly income. It is noticeable here that none of objective financial status measure were associated with financial stress, supporting Hypothesis-10.

Analysis with multiple regression showed that inability to save at the end of the week, thinking that the weekly income was not sufficient, being a female, and receiving financial support from the family were significant predictors of perceived financial stress, R^2 = .54, $F(7,142) = 23.55$, $p < .001$ (see Model 1 in Table 6), while age, SSS and debt were not.

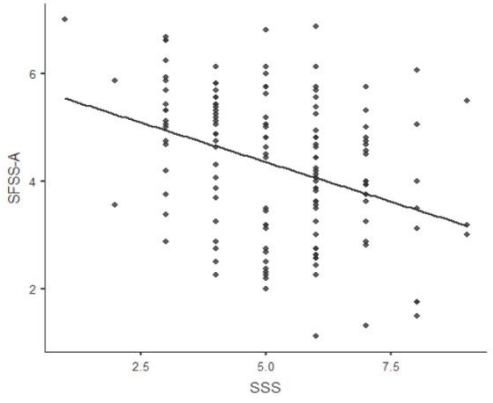

Figure 1. Scatterplot of relationship between SFSS-A and SSS in Study 2.

We excluded non-significant predictors of financial stress one after another, using hierarchical regression repeatedly, resulting in Models 2 and 3 (see Table 6). The final model (R^2 = .53, $F(5,144) = 31.94$, $p < .001$) determined debt as a significant predictor of financial stress along with other independent variables resulted earlier in Model 1 (see Table 6) with a large effect size (f^2= 1.13). However, Models 1, 2, and 3 were not significantly different from each other (ΔR^2 = ns).

Table 6. Model coefficients for multiple regression analysis in Study 2

Predictor	Estimate	*SE*	*t*	*p*	St Est
Model 1					
Intercept	-42.40	5.22	-8.12	< .001	
SSS	-0.10	0.05	-1.86	0.07	-0.11
Having debt	0.32	0.17	1.86	0.06	0.11
No saving	0.86	0.18	4.67	< .001	0.32
Not enough income	0.86	0.17	4.94	< .001	0.33
Gender	0.73	0.17	4.44	< .001	0.26
Age	0.01	0.01	0.46	0.65	0.03
Receiving family support	-0.40	0.17	-2.36	0.02	-0.14
Model 2					
Intercept	-43.04	5.02	-8.58	< .001	
SSS	-0.09	0.05	-1.82	0.07	-0.11
Having debt	0.34	0.17	1.99	0.05	0.12
No saving	0.87	0.17	5.11	< .001	0.33
Not enough income	0.86	0.17	4.95	< .001	0.33
Gender	0.74	0.17	4.47	< .001	0.26
Receiving family support	-0.40	0.17	-2.35	0.02	-0.14
Model 3					
Intercept	-46.23	4.74	-9.75	< .001	
Having debt	0.34	0.17	2.02	0.046	0.12
No saving	0.93	0.17	2.38	< .001	0.35
Not enough income	0.91	0.17	5.29	< .001	0.35
Gender	0.78	0.17	4.73	< .001	0.27
Receiving family support	-0.46	0.17	-2.64	0.009	-0.15

Note. SE = Standard error, *t* = t value, *p* = p value, St Est = Standardised estimate. No Saving = Thinking they cannot save at the end of the week, Not enough income = Thinking their weekly income is not enough.

As Table 6 shows, the findings that debt, thinking that the weekly income was sufficient, and ability to save at the end of the week were significant predictors of financial stress is consistent with hypotheses 6, 8, and 9 respectively. However, contrary to Study 1, SSS was no more a significant predictor of financial stress, rejecting Hypothesis-7. Notably, receiving financial support from the family mitigated financial stress and being female increased it.

Attitudes towards debt

Fear of Debt decreased with increasing SSS (r = -.22, p <.01), if they could save at the end of the week (r = -.18, p <.05), and if they thought their weekly income was sufficient for their living needs (r = -.25, p <.01) – consistent with Hypothesis-11. Moreover, consistent with Hypothesis-12, Fear of debt increased financial stress (r = .43, p <.001). Debt Utility did not correlate with subjective financial status measures; nor did it correlate with SSS supporting Hypothesis-13. Age was significantly correlated with Debt Utility, r = -.21, p =.008.

DISCUSSION

This project investigated implications of perceived financial stress for first-year fees-free education in tertiary students after NZ government announced the policy for new students of 2018. As mentioned earlier, the government policy mostly relates to students' future, but a number of results indicate that students are more

concerned about the present. Note particularly the effects of debt and not being able to save at the end of the week on increasing financial stress; and of higher SSS (only based on Study 1) and thinking that one's weekly income is sufficient on decreasing financial stress. These results indicate that the participants were heavily concerned about their present financial needs.

Consistent with this interpretation, Lim et al. (2014) and the NZUSA report (Income & expenditure report 2017 - The cost of being a student in New Zealand, 2018) showed that the sources of financial stress in students were their day to day or present financial obligations, not the future concerns of repaying Student Loan. It may be that the primed students were not impressed that their future financial concerns were taken care of, because their financial stress was related to their present financial obligations. Thus both studies suggest that the university students potentially employed temporal discounting in regards to fees-free education. They disregard the remote future gain and worry about their present financial needs. This is consistent with former research on temporal discounting (Ainslie & Haslam, 1992; Thaler, 1981).

Another explanation for the lack of priming may be the dubious efficacy of monetary priming in general. Caruso, Vohs, Baxter, and Waytz (2013) conducted five experiments indicating that priming with money prompted the participants to endorse free-market systems and tolerate social inequality. However, when Rohrer, Pashler, and Harris (2015) replicated the mentioned study, they found no evidence of such a priming effect. This could be regarded as a limitations of the current study, which could be further probed in the future by examining temporal discounting in a different way than priming.

We found in both studies that debt increased financial stress. In Study 1, we also found that subjective perception of higher social status decreased financial stress. Study 2 further determined that other subjective financial status measures, such as ability to save and thinking that weekly income was sufficient decreased financial stress. The importance of subjective factors in student financial stress was underscored by the significant correlation of subjective financial and social status measures with the emotional dimension of the ADS, Fear of Debt (Haultain et al., 2010), as well as by the finding of no correlation between subjective financial status measures and Debt Utility. In contrast, both studies found objective financial status measures such as Student Allowance receipt, employment, other financial support from the government, and income were not associated with financial stress. The only objective measure that decreased financial stress—based on Study 2—was receiving financial support from the family. Future studies could further compare and contrast subjective and objective financial stress measures.

Consistent with the findings of the current project, former foreign studies, e.g. Dwyer et al. (2012), Letkiewicz et al. (2014), as well as the NZUSA report (Income & expenditure report 2017 - The cost of being a student in New Zealand, 2018), demonstrated that student debt was a source of financial stress in university students. The findings of Study 1 are consistent with Dwyer et al. (2012) and Hyun et al. (2006) in indicating that perceived higher social status is a protective factor against students' financial stress. From Study 2, it is evident that the driving force behind students' financial stress is how they perceive themselves financially, and not the amount they make on weekly basis. Those who think their income is sufficient and can save at the end of the week (regardless of the amount) experience less financial stress. On the other hand, objective measures do not necessarily define financial stress. The amount of income and receiving Student Allowance or any other type of support did not decrease financial stress, unless the student was subjectively satisfied and thought their income was enough. However, critics could argue that the financial stress results based on the SFSS-A (PSYC344 Students, 2017) relate to the present financial concerns not because students do not have future financial concerns, but because the observed variables of the scale represent the present financial issues only. This matter could be resolved by research on students' financial worries for the future, although such research will also need to investigate the relative strengths of present and future financial concerns. It would also be borne in mind that the relative strengths might well differ from person to person.

An obvious limitation of the present research is that, partly for reasons of convenience, the research has focussed on students studying a single discipline at a single NZ university. However, previous NZ research (e.g. Haultain et al., 2010) indicates that psychology students are not particularly unusual in how they think about their finances. Nor is there any reason to believe that students at the University of Canterbury are very different in their concerns, although students at vocational institutes and polytechnics may have a somewhat different perspective. Previous research does indicate considerable international differences in students' financial concerns, but, as mentioned earlier, different countries do have very different sets of policies.

As it stands, our findings imply, firstly, the policy focus might usefully be shifted to the present financial concerns of tertiary students. On the contrary, the government's free first-year tertiary education policy is addressing a future economic concern. Secondly, the driving forces behind financial stress appear to be mostly subjective factors. This suggests that applied psychological measures might be useful in overcoming students' financial stress. There are at least two practical applications based on the mentioned theoretical implications:

In the first place, our research indicates that the free first-year education policy may not be serving its purpose. Two key parts of the policy were to improve the affordability of tertiary education and to encourage more students to study after school (Fees-free tertiary study on fast track, 2018). But our research and findings by Lim et al. (2014) show that it is the present financial concerns that lead to financial stress and eventually, negative educational, social and psychological outcomes (Drentea, 2000; Joo et al., 2008; Krause, 1997; Lim et al., 2014). Furthermore, the policy does not seem to be encouraging many students into tertiary education. Four out of 5 participants in Study 2 reported that they would have enrolled in university regardless of the policy. Nor is there any guarantee that the extra 20% students of 2018 continued to study in 2019 – when they had to pay their

tuition fees. The government might do better to make Student Allowance and similar services more readily available to ease the present financial burden of students instead of investing in fees-free education at the cost of negative educational, social and psychological outcomes due to financial stress.

Secondly, financial stress might be mitigated by changing the way students see themselves. Our analysis showed that there were a few students who did not think about reducing their spending, were not ashamed of borrowing money, did not worry about unplanned expenses, did not feel they needed jobs to cover their immediate needs, and did not constantly worry about their financial situation. These worries differ from person to person. One may consider twenty dollars enough saving while another will not be satisfied with a hundred. One might think two hundred dollars weekly income is enough and another would be looking for a thousand. Former empirical evidence suggests that these perceptions can be changed. For instance, Letkiewicz et al. (2014) showed that the US students who received financial counselling had higher odds of graduating in four years than those who had financial stress.

A majority of people consider themselves above average in most important life roles despite having ongoing daily hassles, including financial burdens (Headey & Wearing, 1992). That said, financial counselling services and financial management plans could be shaped for NZ tertiary education students in a way that could mitigate their financial stress. This, however, does not mean that we accept the financial stress being considered a normal phenomenon in students. We do believe it is an important issue and it has to be addressed. In the meantime, empirical evidence is needed to evaluate efficacy of financial counselling services and financial management plans in an NZ context. A future study might investigate if such interventions work.

To conclude, subjective financial status variables such as ability to save and thinking that the weekly income is sufficient influence financial stress in NZ university students. On the other hand, weekly income, Student Allowance, and employment status do not. Reminding first-year students of their free first-year education does not decrease their present financial stress due to the possibility of temporal discounting. Perhaps the focus should shift to the present financial burden of students – which might be reduced by financial counselling and enhancing financial management skills.

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