

Credit card use and debt by female students

A case study in Melbourne, Australia

BY HUONG HA

This paper examines credit card usage and credit recovery activities by female students at universities in Melbourne, Australia. Primary data were collected through a four-part questionnaire. A total of 257 valid responses were analysed. The research found that there is no relationship between monthly average credit card debt and demographic and socioeconomic variables. There is, however, a negative correlation between monthly average credit card debt and weekly income. The patterns of credit card usage by the respondents in years 3 and 4 tend to be negative (irresponsible). The junior respondents are more likely to have positive (responsible) credit card usage than the senior respondents. Also, the majority of the respondents sought financial help from their parents and/or relatives, although some approached financial counsellors, government and non-governmental agencies for help to settle debts. Overall, both junior and senior female students need assistance in regard to credit card usage and credit recovery.

Credit card debt in Australia reached \$41.8 billion in 2011 (Wang 2011), and it is one of the most frequent debts for university students (Dowling et al. 2008; Ha 2013). The average credit card debt in Australia is \$3,141 (Schulz 2010). In the United States, Hayhoe et al. (2000) and Carpenter and Moore (2008) found that college students are heavy credit users, and

they are often targeted for investigation of financial behaviours. Adams and Moore (2007), Berg et al. (2010) and Hancock, Jorgensen and Swanson (2012) commented that a debt of more than US\$1,000 by a student is considered high risk, and this is usually associated with undesirable behaviours, such as low academic performance and substance abuse. Wang (2011)

highlighted that many students at colleges exhibited “irresponsible behaviour when using [a] credit card” (p.85). In Australia, Beal and Delpachitra (2003) explained that a lack of financial knowledge was reflected in a high level of debt, overuse of credit cards, and over-borrowing of money for consumption.

In the United States, Abdul-Muhmin and Umar (2007) and Lawrence et al. (2003) found that females were more likely to hold a credit card than males. Armstrong and Craven (1993) reported that the number of credit cards held by female students was higher than that of male students. Robb (2011) found that females tended to carry four or more credit cards. Female students also carried more debt than male students (Robb & Sharpe 2009). Female students were more likely than male students to:

- have a lower level of financial literacy;
- be less financially confident;
- seek parents’ help to pay their credit card bills (Borden et al. 2008; Hancock, Jorgensen & Swanson 2012);
- demonstrate overspending behaviours (Wang 2011);
- be financially dependent (Carpenter & Moore 2008);
- demonstrate more risky behaviour related to credit card use (Lyons 2004); and
- exhibit more problematic credit card behaviours (Worthy, Jonkman & Blinn-Pike 2010).

According to a study by Corbett and Hill (2012), although female and male graduates had the same amount of debt (incurred through financing their education and other expenses), in 2009 “women one year out of college who were working full time earned, on average, just 82 per cent of what their male peers earned” (p.1). In

Australia, the average full-time working female earned about \$13,842 less than the average full-time working male (Wade 2013). In addition, women often leave relationships with “a poor credit rating and outstanding debts”, including credit card debt (Good Shepherd Youth & Family Service and Kildonan UnitingCare 2012, p.2). A study by Lyons (2004) revealed that “females had a greater likelihood of being delinquent on their cards as compared with males” (p.32).

There are also differences between junior (years 1 and 2) and senior university students (years 3 and 4 and higher) regarding the number of credit cards carried, and the amount of debt (Lyons 2004). The average debt of senior students was twice as high as that of junior students (Nellie Mae 2002). Senior students were 2.4 times more likely than freshmen (first-year students) and sophomores (second-year students) to carry over US\$500 in debt (Hancock, Jorgensen & Swanson 2012, p.8), and more financially independent from their parents (Shim et al. 2010; Hancock, Jorgensen & Swanson 2012). Generally, senior students exhibit a more negative¹ attitude toward credit card use than junior students (Wang 2011).

From the above discussion, there is strong evidence that females are more vulnerable than males, and senior students exhibit a more negative attitude toward credit card use than younger students (Wang 2011). Therefore, female students at different levels of education (year of study) should be the target group for research on credit card use and debt.

Although credit card debt incurred by university students is an important area of research, and female students are more financially vulnerable than male students, there has been insufficient research on credit card usage and debt accumulation by female students in Australia. Many research studies have focused on debt and demographic and

psychological variables in general. There has been little research on positive (responsible) and negative (irresponsible) credit card usage patterns and credit recovery activities among female students. This study aims to address these gaps by examining demographic and socioeconomic factors affecting monthly average credit card debt by female students in Melbourne, Australia, and exploring the credit behaviours and financial attitudes towards debt of female students with different levels of education, in regard to positive and negative credit card usage, and credit recovery activities.

In this study, positive credit card usage refers to paying the full amount of a credit card bill before it incurs fees or penalties, and having sufficient money in other accounts to meet obligations on the credit card. Negative credit card usage refers to using the entire credit limit, paying the minimum requirements or less, paying credit card bills late, and borrowing money to pay for credit card debts. Educational level refers to the year level in which a respondent is enrolled in her university course. Credit recovery activities include seeking financial help from various parties through to declaring bankruptcy.

Different levels of financial literacy may affect students' credit behaviour and attitudes towards debt. This study endeavours to provide recommendations for various groups of stakeholders regarding the provision of tailored educational programs on debt that target female students. Credit card use and debt is an important research area, given the lack of contemporary research in this area in Australia.

Literature review and theoretical framework

Credit card use and debt by students

Demographic and socioeconomic factors

Factors that contribute to the number of

credit cards a student has, and the way in which those cards are used, include demography, socioeconomic factors and individuals' psychological characteristics (Chien & Devaney 2001). Variables – namely age, employment status, credit balance, the interaction between specific attitude and education, and debt – influence attitudes to credit card usage (Chien & Devaney 2001).

In the US, being a postgraduate student, married, black, female, renting a flat, being of an ethnicity other than Caucasian, and working more than 20 hours per week are factors that significantly increase students' credit card debt (Lyons 2004). There was a positive correlation between credit card ownership and education, income and marital status (Barker & Sekerkaya 1992; Kaynak & Harcar 2001). Gan and Maysami (2006) found that gender, education, age and occupation were significant variables of credit card usage.

Austin and Phillips (2001) found that differences in gender, age and marital status did not alter credit card behaviour, but the total loan amounts were significant predictors of inappropriate credit card use. Xiao et al. (2011) found that students with a responsible attitude towards credit card usage were more likely to be males, and living on campus, and were more likely to own credit cards. Kinsey (1981) reported that females used their credit card more often. However, there was no significant difference between females and males regarding the number of credit cards held, the amount of monthly credit card balance, and attitudes towards credit usage and debt (Joo & Grable 2004).

Low levels of personal financial literacy

Easily obtained credit is one of the causes of overspending (Roberts & Jones 2001). Robb and Sharpe (2009) found a positive correlation between college students' responsible financial behaviour and personal financial knowledge.

In Australia, younger people (18 to 24 years old) have a low level of financial literacy and competence than other adults (Roy Morgan Research 2003). In the US, young people are considered as being more vulnerable to overspending than others, given their low level of financial literacy (Aulie et al. 2003). Usually, young students do not have sufficient experience to use credit responsibly, and credit card issuers are blamed for pushing students into debt by making credit cards too accessible (O'Loughlin & Szmigin 2006).

Credit card usage and credit card recovery activities

In her UK study of females aged 18 to 50, Pine (2009) explained that the availability of easy credit compels respondents to spend more than they have at the time of purchase. About 36% of the respondents in Pine's (2009) study spent more than they could afford. Being financially independent, receiving financial aid and owing US\$1,000 or more in other debt increases the probability of "maxing out" credit cards (Lyons 2004). Peers and parents have been found to directly influence students' attitudes and behaviours towards credit card use and debt (O'Loughlin & Szmigin 2006).

In Australia, the Financial Literacy Foundation (2008) reported that 71% of female respondents in its 2007 survey of over 4,000 women had a credit card, 77% were comfortable with their level of debt, and 14% made only minimum repayments on their credit card/s. Females were less able to manage debt than males, and the percentage of females who did not pay their total credit card balance when due was higher than for males. In the US, Carpenter and Moore (2008) found that female students were less financially independent, and engaged in credit recovery (seeking help) less frequently than male students. However, females had a higher level of positive credit card usage. In the UK, Pine

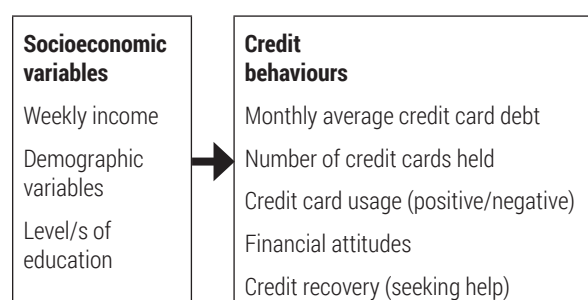
(2009) found that some females were unable to change their habit of overspending even when they experienced debt or declared bankruptcy.

There is no substantial research in Australia regarding students' responses to credit card debt, but a number of services are available. For example, in Victoria, the University of Melbourne provides information and referrals via its website², and the Victorian Government has a website specifically geared towards financial advice for young people.³

Explanatory framework

The hypothesis for this research was that demographic and socioeconomic factors may affect students' credit card usage and debt, and that there may be differences between groups of female students in regard to credit behaviours and financial attitudes. An explanatory framework (see Figure 1) is proposed to examine the relationships between independent determinants and students' credit behaviours and financial attitudes toward seeking help to settle credit card debt.

Figure 1: Explanatory framework for female students' credit behaviours and financial attitudes



Research methods

This study is descriptive and quantitative. A four-part questionnaire was designed, including questions regarding socioeconomic and demographic information, credit card possession, credit usage and credit recovery. The author and a research assistant collected

primary data via surveys conducted in Melbourne, Australia, in 2008. The participants were recruited from the campuses of all eight universities in Melbourne, with the aim of producing a non-biased sample in terms of universities. Only responses from female participants were selected for this study. The target group for this project was female students who had at least one credit card and were 18 years old or older.

The author used SPSS 21 software to analyse the collected data, and employed descriptive statistical techniques to examine the profiles of the female respondents. Chi-squared tests were applied to explore the relationships between monthly average credit card debt and demographic and socioeconomic variables. Factor analysis reduced the data to a manageable size. Finally, Kruskal-Wallis and Fisher LSD (Least Significant Difference) tests were performed to ascertain whether or not there were any significant correlations between educational levels and, first, positive and negative credit card usage and, second, credit recovery activities.

Profiles of the respondents

The data set used in this paper included female respondents who held at least one credit card ($n = 257$ respondents). From Table 1, the largest group of respondents was aged between 22 and 23 (32.7%). The majority of respondents were in Year 4 and above (41.6%) and Year 3 (33.9%).

Table 1: Demographic profile of the respondents

Variable(s)	f (n = 257)	Percentage (%)
Age		
18–19	55	21.4
20–21	72	28.0
22–23	84	32.7
24 and above	46	17.9

Variable(s)	f (n = 257)	Percentage (%)
Marital status		
Single	160	62.3
Married/co-habiting/de facto	73	28.4
Others (Divorced/separated/widow)	24	9.3
Educational level		
Year 1	19	7.4
Year 2	44	17.1
Year 3	87	33.9
Year 4 and higher	107	41.6
Mode of study		
Full time	180	70.0
Part time and others (external/distance learning)	77	30.0
International students		
No	204	79.4
Yes	53	20.6
Weekly income from employment (Australian dollars, A\$)		
\$0–\$199	113	44.0
\$200–\$399	83	32.3
\$400–\$599	30	11.7
\$600 and above	31	12.0
Number of credit cards held		
1–2	242	94.2
3 and above	15	5.8
Monthly average credit card debt (Australian dollars, A\$)		
\$0–\$199	148	57.6
\$200–\$399	61	23.7
\$400–\$599	22	8.6
\$600 and above	26	10.1

Source: survey data

Findings

Factors affecting monthly average credit card debt

To address the first research question, chi-squared tests were performed to test the

relationship between various independent and dependent variables. Weekly income and monthly average credit card debt are significantly negatively correlated ($\chi^2 = 33.84$, $p\text{-value} = 0.000$, $\alpha = 0.05$). The data analysis reveals that 18.7% of the respondents had a monthly average credit card bill of \$A400 or more, and the majority of these respondents (66.66%) earned less than A\$400 per week. However, there was no significant relationship between other demographic variables and monthly average credit card bill.

Positive and negative credit card usage and credit recovery behaviour

To answer the second research question, the data were analysed in three steps. First, various factor analyses were undertaken to identify items with high factor loadings.⁴

Table 2: Factor analysis of 'Credit card usage' and 'Credit recovery activities'

Items (Credit card usage)	Factor loading	Eigenvalue	Percentage of variance explained
Positive (responsible) credit card usage		1.568	14.26
When I get my credit card bills, I pay off all credit card balances on all cards monthly.	.874		
When I use my credit card, I have enough money in the bank.	.783		
Negative (irresponsible) credit card usage		4.232	38.47
I use the entire credit limit of my card.	.722		
My current credit limit is insufficient to pay for my purchases.	.722		
When I get my credit card bills, I make only the required minimum payment on all cards monthly.	.755		

Items (Credit card usage)	Factor loading	Eigenvalue	Percentage of variance explained
When I get my credit card bills, I pay off some cards in full but make only the minimum payments on others monthly.	.739		
Items (Credit recovery activities)			
Seeking financial help from parents and/or relatives		3.615	51.64
Seek help from parents and/or relatives	.798		
Seeking financial help from others		1.300	18.57
Seek help from relevant government agencies	.827		
Seek help from an industry association	.871		
Seek help from a consumer association or a non-governmental agency	.835		
Declare bankruptcy	.736		

Source: survey data

Table 2 shows that the percentage of variance explaining negative (irresponsible) credit card usage (38.47%) is much higher than that for positive (responsible) credit card usage (14.26%). Also, seeking help from parents and/or relatives (51.64%) to settle credit card debt has a higher percentage of variance explained than seeking help from others (18.57%).

Second, to determine if female students with different educational levels had different attitudes towards the individual items listed in Table 2, Kruskal-Wallis tests were performed. The results of the tests are summarised in appendices 1 and 2. There was a statistically significant difference between female students with different educational levels regarding "When I use my credit card, I have enough money in the bank", "I use the entire credit limit of my card", "When I get

my credit card bills, I pay off some cards in full but make only the minimum payments on others monthly”, and all statements under seeking financial help from parents and/or relatives and seeking help from others.

Third, Fisher LSD tests were performed to find the statistically significant difference between female students enrolling in different years at universities and the above factors. The outputs of Fisher LSD tests are presented in appendices 3 and 4.

Regarding having enough money in the bank when using a credit card, the results of Fisher LSD tests reported no significant difference between Year 1 and Year 2, and between Year 3 and Year 4 students; however, there were significant differences between other groups of students. Year 1 and Year 2 students in this sample were more likely to have enough money in the bank when they used credit cards than students in Year 3 and Year 4. Only 19.62% of Year 4 respondents and 22.99% of Year 3 respondents had sufficient money in the bank when they used their credit cards. These percentages are much smaller than the percentages of Year 1 (52.63%) and Year 2 (43.18%) respondents who had enough money in the bank when using their credit cards.

There was a significant difference between Year 2 and Year 4 students, and no significant difference between other groups of students, regarding using their entire credit limit. Year 4 students were more likely to use their entire credit limit than Year 2 students. Out of 19.07% of the respondents who often or very often used their entire credit limit, 38.78% were Year 4 students, and only 12.24% were Year 2 students.

There was a significant difference between Year 2 and Year 3 students, and no significant difference between other groups of students, regarding their paying off some cards in full but making only the minimum payments on others monthly. Year 3 students were more

likely to make the minimum payments for some of their credit cards than Year 2 students. The analysis of the collected data shows that 15.18% of the respondents often or very often paid the minimum amount required by the card issuers of some credit cards. Among them, 28.21% were Year 3 respondents, and only 10.26% were Year 2 respondents.

Table 3: Fisher LSD tests for credit recovery behaviours of the respondents

Credit recovery activities	Significant difference between groups	No significant difference between groups
Seeking help from parents	Other groups of respondents	Year 1 and Year 2 respondents
Seeking help from governmental agencies	Year 1 and Year 3 respondents	Other groups of respondents
Seeking help from industry associations	Other groups of respondents	Year 3 and Year 4 respondents
Seeking help from consumer associations or a non-governmental agency	Other groups of respondents	Year 2 and Year 3 respondents
Declaring bankruptcy	Other groups of respondents	Year 1 and Year 2 respondents

The findings, in terms of credit recovery behaviour, are summarised in Table 3. There were significant differences between most of the groups of respondents regarding seeking help from parents, industry associations, consumer associations and non-governmental organisations, and declaring bankruptcy. According to the descriptive analysis, nearly half of the respondents (45.91%) asked for help from their parents and/or relatives to settle their credit card debt. About 14.8%, 13.6% and 7.5% of the respondents were likely to settle their debt by approaching industry associations, consumer associations and declaring bankruptcy respectively. The proportions of Year 1 (94.74%) and Year 2 (68.18%) respondents who sought financial help

from their parents were much higher than the percentages of Year 3 (12.64%) and Year 4 (33.64%) respondents who did the same. About 26.46% of respondents also talked to financial counsellors when they had financial problems.

Discussion and implications

Socioeconomic factors and credit card debt

The findings suggest that students with lower weekly incomes were more likely to carry a large amount of credit card debt. Over time, female students with low levels of income may face more financial challenges because they have to pay accumulated debts plus interest, and possibly new debts as a result of insufficient savings and/or low income, even after graduation. Since students who received adequate social support were less likely to have credit card debt (Wang 2011), educators, consumer associations and credit card issuers should design social and financial support systems that aim to help needy students.

Positive and negative credit card usage

This article finds that junior students were more likely than senior students to use credit cards in a responsible manner. Senior respondents were more likely to use the entire credit limit and were less likely than junior students to have enough money in their bank account. It may be the case that the longer students are enrolled in a university, the more they become financially independent (Shim et al. 2010; Hancock, Jorgensen & Swanson 2012). Senior students may often use credit cards to buy first and pay later for their purchases, due to a cash shortage. The findings also support research by Lyons (2004), which found that senior students may be less financially dependent on their parents, and thus may often spend the entire credit limit. Similarly, Robb and Sharpe (2009) found that “average debt levels were larger for higher levels of class rank” (p.27). As a consequence,

senior students may need more social and financial support than junior students.

The results of this study, in terms of negative credit card usage, support findings by Jorgensen and Savla, (2010), and Hancock, Jorgensen and Swanson (2012) that many respondents were likely to make the minimum payment off their monthly credit card balance. Possible explanations are that students were comfortable making the minimum payments, or did not have sufficient money to pay the entire credit card balance. This payment pattern, in either case, may be considered a risk factor for an increase in debt. According to Carpenter and Moore (2008), female students were more likely to pay credit card bills late. Since senior female students may be comfortable with minimum payments, early intervention strategies are important in shaping financial attitudes and credit recovery activities. Provision of financial knowledge that can help students establish “positive financial attitudes at earlier ages” can prevent “poor financial habits from taking root” (Hancock, Jorgensen & Swanson 2012, p.10).

Credit recovery activities

In making a connection between the findings of this research study and its practical implications, it is suggested that seeking help from parents has a high factor loading in this study. The data analysis also reveals that a significant proportion of the respondents were likely to discuss their financial problems with financial counsellors. Thus, different groups of relevant stakeholders, such as wealth advisors, financial counsellors and financial educators, should work closely with parents to identify effective mechanisms to educate students in responsible credit card usage.

Implications

Understanding the differences in the credit card usage and behaviours of female students

with different levels of education provides important information to financial educators, parents, financial counsellors and policymakers, which is of relevance in the development of suitable programs to educate students, especially females, before credit card abuse and debt become prominent problems.

Government agencies, universities, industry and consumer associations need to address issues associated with student credit card debt in a timely manner by introducing policies that require “students to pass financial management classes” (Hancock, Jorgensen & Swanson 2012, p.10). Although Walstad, Rebeck and MacDonald (2010) mentioned that financial management classes were important to freshmen and sophomores, this study proposes that such classes should be offered to both junior and senior students, that is, throughout the entire time students spend at university. Such classes should aim at addressing high-risk factors associated with credit card debt by targeting students used to making minimum payments, since making minimum payments will eventually lead to higher amounts of interest being paid. Classes can be offered either on campus or online so that students can conveniently attend classes at any time and place (Hancock, Jorgensen & Swanson 2012).

To enhance positive credit card use and behaviour, financial educators should focus on how to improve female students’ financial literacy, especially for students who do not receive sufficient financial support from their families. Since many females are considered “emotional spenders” (Pine 2009, p.15), have lower levels of financial literacy than males, and are less able to manage their debt (Financial Literacy Foundation 2008), female students should receive adequate and relevant financial education and social support. As “attitudes shape behaviours” (Hancock, Jorgensen & Swanson 2012, p.9), an increase in financial literacy

will influence financial attitudes, including credit card payment patterns. Thus, financial knowledge should be taught in a manner that can shape young women’s attitudes towards credit card usage and credit recovery.

In addition, financial interventions and education should reach students in a timely manner. Students may not know how various organisations (for example, government agencies, industry and consumer associations) can help them settle their debt, and they may end up doing something that may jeopardise their study plans. Therefore, information about financial education and social support systems should be disseminated widely and at appropriate times.

Finally, the financial sector should utilise various research findings and work with wealth advisory and consumer associations to profile consumers, for example female senior students, who might be classified as financially vulnerable, in order to design appropriate products and consumer policies to protect vulnerable consumers (Wang 2011).

Limitations

The author adopted a non-random sampling method in this study, which was similar to that used in previous studies. Although all universities with campuses in Melbourne were chosen for the distribution of the questionnaire, participants were conveniently selected. However, the author made every effort to minimise errors. The author was very careful in drawing any conclusion relating to population parameters, and avoided comparisons that statistical results could not support. Other common limitations, such as non-response errors and inaccurate data entry, were minimised as two independent people carefully checked the processed data.

Conclusion

This study found that there was a negative relationship between monthly average credit card debt and weekly income. The female respondents, especially senior students, tended to use credit cards in an irresponsible manner. Junior female students were more likely than the senior students to use credit cards in a responsible manner. Also, seeking financial help from parents and/or relatives was popular among the majority of respondents, although some students did approach financial counsellors, while fewer approached government and non-government agencies for help to settle their debt. Contrary to other studies, this study found that senior as well as junior female students may need financial assistance regarding credit card usage and credit recovery activities.

More than 15% of the respondents paid only the minimum repayment required monthly, a practice that would eventually lead to more credit card debt. This is one of the risk factors that relevant stakeholders need to address early. Although this research sample may not necessarily represent the views of all female university students in Melbourne, the findings do support further investigation of ways to better protect students, especially given that research on credit card use and debt among students is relatively new, and students' behaviours are constantly changing (Goldsmith & Goldsmith 2002).

University students will continue to face financial challenges from several sources, including the lack of a sustainable income, insufficient social support and inadequate financial education. Future research should profile at-risk female and foreign students. Although several authors have used demographics for profiling, consumer behaviour could help to provide better insights

into why senior female students may be at a higher risk of financial problems than junior students. In addition, examination of credit card usage and credit recovery activities should be extended to the online market where students use their credit cards to make purchases.

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Notes

1. In this study, "positive" refers to "responsible" and "negative" to "irresponsible" in regard to credit card usage.
2. <http://www.services.unimelb.edu.au/finaid/managing/trouble.html>
3. <http://www.youthcentral.vic.gov.au/Managing+Money>
4. The results of the Bartlett's tests and Kaiser-Meyer-Olkin (KMO) values (KMO = .798, $p = .000$ for credit card usage, KMO = .825, $p = .000$ for credit recovery activities) support the use of factor analysis. Varimax factor rotation method was applied to the 11 components under credit card usage and seven components under credit recovery activities, using principal component analysis and the minimum eigenvalue of one as the criterion to extract the number of factors.

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Author

Huong Ha is currently the Academic Coordinator of the MBA, Bachelor of Business and Bachelor of Commerce programs at the University of Newcastle, Australia (UoN Singapore). She was previously the Dean of TMC Business School and Director of Research and Development, TMC Academy (Singapore).

Appendices

Appendix 1: Kruskal-Wallis tests for 'Positive and negative credit card usage' and 'Educational level'

Positive credit card usage	Chi-Square	df	Asymp. Sig.
When I get my credit card bills, I pay off all credit card balances on all cards monthly.	4.065	3	.255
When I use my credit card, I have enough money in the bank.	8.854	3	.031
Negative credit card usage			
I use the entire credit limit of my card.	8.941	3	0.030
My current credit limit is insufficient to pay for my purchases.	7.502	3	0.058
When I get my credit card bills, I make only the required minimum payment on all cards monthly.	7.782	3	0.051
When I get my credit card bills, I pay off some cards in full but make only the minimum payments on others monthly.	8.877	3	0.031

Note: Grouping variable: Education level ($\alpha = .05$)

Appendix 2: Kruskal-Wallis tests for 'Seeking help from parents and/or relative' and 'Seeking help from others'

Seeking help from parents and/or relatives	Chi-Square	df	Asymp. Sig.
Seek help from parents and/or relatives	33.160	3	.000
Seeking help from others			
Seek help from relevant government agencies	26.388	3	.000
Seek help from an industry association	29.889	3	.000
Seek help from a consumer association or a non-government agency	29.566	3	.000
Declare bankruptcy	41.779	3	.000

Note: Grouping variable: Education level ($\alpha = .05$)

Appendix 3: Fisher LSD tests for positive and negative credit card usage and credit recovery behaviour

Dependent variable	Education level (A)	Education level (B)	Mean Difference (A – B)	Std. Error	Sig.
When I use my credit card, I have enough money in the bank.	Year 1	Year 3	.830*	.296	.006
		Year 4	.801*	.291	.006
	Year 2	Year 3	.470*	.217	.031
		Year 4	.441*	.210	.037
		Year 1	-.830*	.296	.006
	Year 3	Year 2	-.470*	.217	.031
		Year 1	-.801*	.291	.006
I use the entire credit limit of my card.	Year 2	Year 4	-.458*	.209	.029
	Year 4	Year 2	.458*	.209	.690
When I get my credit card bills, I pay off some cards in full but make only the minimum payments on others monthly.	Year 2	Year 3	-.355*	.187	.059
	Year 3	Year 2	.355*	.187	.059

*. The mean difference is significant at the 0.05 level for (1) and (2) and 0.06 for (3)

Note: Only results which are significant are included in this table.

Appendix 4: Fisher LSD tests for seeking financial help

Dependent variable	Education level (A)	Education level (B)	Mean Difference	Std. Error	Sig.
Seek help from parents and/or relatives	Year 1	Year 3	1.421*	.300	.000
		Year 4	1.393*	.295	.000
	Year 2	Year 3	.818*	.219	.000
		Year 4	.790*	.212	.000
		Year 1	-1.421*	.300	.000
	Year 3	Year 2	-.818*	.219	.000
		Year 1	-1.393*	.295	.000
	Year 4	Year 2	-.790*	.212	.000
Seek help from relevant government agencies	Year 1	Year 3	-.978*	.267	.000
		Year 4	-1.041*	.263	.000
	Year 2	Year 3	-.632*	.195	.001
		Year 4	-.696*	.189	.000
		Year 1	.978*	.267	.000
	Year 3	Year 2	.632*	.195	.001
		Year 1	1.041*	.263	.000
	Year 4	Year 2	.696*	.189	.000
Seek help from an industry association		Year 2	-.647*	.282	.023
	Year 1	Year 3	-1.027*	.260	.000
		Year 4	-1.280*	.256	.000
		Year 1	.647*	.282	.023
	Year 2	Year 3	-.380*	.190	.047
		Year 4	-.633*	.184	.001
		Year 1	1.027*	.260	.000
	Year 3	Year 2	.380*	.190	.047
		Year 1	1.280*	.256	.000
	Year 4	Year 2	.633*	.184	.001

Dependent variable	Education level (A)	Education level (B)	Mean Difference	Std. Error	Sig.
Seek help from a consumer association or a non-government agency		Year 2	-.700*	.283	.014
	Year 1	Year 3	-.942*	.261	.000
		Year 4	-1.323*	.257	.000
		Year 1	.700*	.283	.014
	Year 2	Year 3	-.242	.191	.205
		Year 4	-.623*	.185	.001
	Year 3	Year 1	.942*	.261	.000
		Year 4	-.381*	.149	.011
		Year 1	1.323*	.257	.000
	Year 4	Year 2	.623*	.185	.001
		Year 3	.381*	.149	.011
Declare bankruptcy	Year 1	Year 3	-1.090*	.239	.000
		Year 4	-1.287*	.235	.000
	Year 2	Year 3	-.582*	.175	.001
		Year 4	-.779*	.169	.000
		Year 1	1.090*	.239	.000
	Year 3	Year 2	.582*	.175	.001
		Year 1	1.287*	.235	.000
	Year 4	Year 2	.779*	.169	.000

*. The mean difference is significant at the 0.05 level.

Note: Only results which are significant are included in this table.

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