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Credit Cardholders: Distinguishing the Good Apples from the Bad Apples

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Abstract

Credit card is a double-edged sword. While the credit facilities offered by credit card provide liquidity for unforeseen circumstances, it also tempts one to overspend. The "buy today, pay later" lifestyle is becoming a concern as credit card debts and bankruptcy due to credit card bad debts is on the rise globally.

This paper investigates the factors that distinguish a cardholder who uses the credit card as a convenient payment tool with a cardholder who uses the credit card as a credit instrument. Using the logistic regression model, it is found that socio-demographic variables such as gender, marital status, income and education level are significant in profiling the type of credit card user. Credit education is found to be important in shaping responsible usage of credit cards. The study also analyses the drivers to credit card ownerships. 617 responses from active credit cardholders in Malaysia are used in this study.

As credit facilities offered through credit cards are unsecured credit, the findings in this paper will help shape accurate policy measures to minimize the possible negative impacts to the economy.

Keywords: Credit card, Revolving credit, Consumer credit
JEL Categories: D12, D14, E51

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Introduction

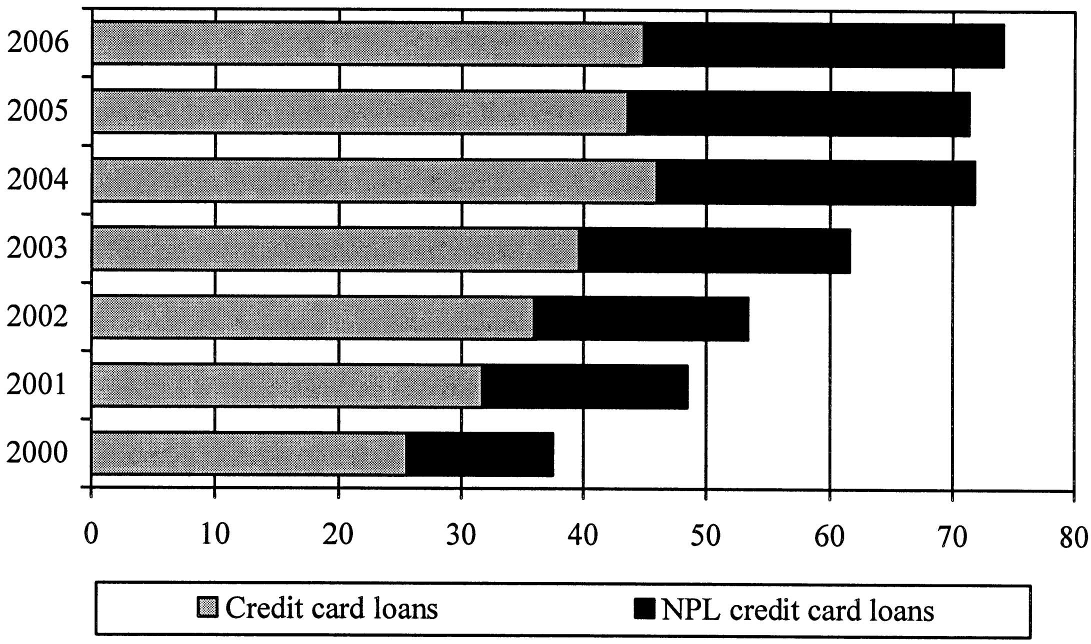
In today's modern economy, making payments using a payment card is almost a fact of life. Credit card is distinctively different[1] from the other payment cards such as the charge cards, debit cards and electronic purses. Although both credit cards and charge cards are referred to as "pay later" cards, the two cards are different. Credit card is considered a revolving credit instrument where its holder can roll over its outstanding balances to the following month and interest will be charged on the outstanding balances. On the other hand, charge cardholders must settle the full amount of balances at the end of the month.

The revolving credit feature in credit card makes it an interesting subject in the study of consumer credit. Through credit cards, consumers are now able to gain easy access to credit which previously was not possible. The automatic credit extended to each eligible credit card holder can tempt cardholders to lead a "buy today, pay later" lifestyle. The credit facilities offered in credit card is only one of the features that make it popular among consumers. The other advantages offered by credit cards are the convenience and security of making payments without carrying large amount of cash around, warranty protection in the merchandise purchased, emergency cash advance, cash rebates and rewards redemption points, 24 hours customer service and interest free installment plans.

[1] Debit card is known as a "pay now", electronic purses are usually pre-paid cards, while credit cards and charge cards are "pay later cards".

Figure 1 shows that the credit card debts and non-performing credit card debts have been gradually increasing in Malaysia from the year 2000 to 2007. The gradual upward trend in the fraction of the credit card debts relative to total consumer debts (excluding housing loans) and the higher percentage of non-performing credit card debts to non-performing total consumer credits are definitely a concern to monetary authorities and policy makers[2].

Figure 1: Percentage of credit card debts to total consumer debts and percentage of non-performing credit card debts to total non-performing consumer debts in Malaysia: 2000- 2007



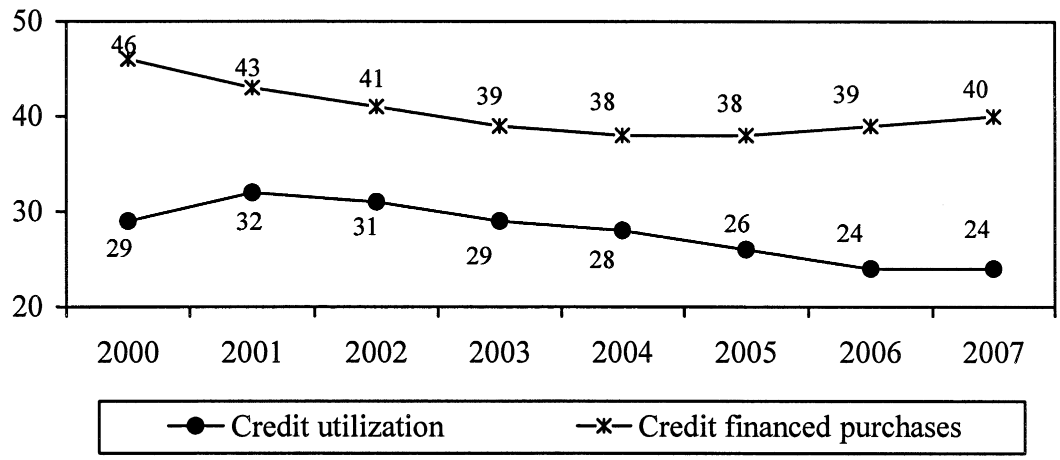
Source:
Bank Negara Malaysia, Credit Card Operations in Malaysia, Monthly Statistical Bulletin, June 2008.
Bank Negara Malaysa , Commercial Banks: Non performing loans by Sector, Monthly Statistical Bulletin, June 2002, June 2005, June 2006 and June 2008.

[2] Cheah (2006) and Tam (2006) from The Star have both reported that Malaysian Domestic Trade and Consumer Affairs Secretary-General, Datuk Seri Talaat Husain, and the Assistant Governor of Bank Negara Malaysia, Datuk Mohd Razif Abdul Kadir, have voiced serious concerns about the changing lifestyle of Malaysians living on credit. Further, a Credit Counselling and Debt Management Agency (AKPK) was established in May 2006 and it was found that 31% of those who have approached the agency for assistance have problem settling their credit card debts (The Star, 2008).

The ratio of credit card debts to the total consumer credit (excluding housing loans) has also increased steadily from 25.5% to 45% over the same period (year 2000-2007). While the upward trend may be alarming, on further investigation, it is found that the increased share of credit card debts to the total consumer credit is largely due to the shift of consumer durables credit to credit card. The shift is due to the attractiveness of interest free installment plans for the purchase of durable goods when these purchases are made using credit cards.

Further, on analyzing the trends of credit utilization of credit cards and the fraction of credit card purchases which are credit financed, the concern over the increased credit card debts and non-performing credit card debts problems appear to be over hyped. Figure 2 shows the trend of credit utilization of credit cards and the percentage of credit financed purchased which refers to as the fraction of credit card debts to the total credit card purchases.

Figure 2: Credit utilization and percentage of credit financed purchases



Source:
Bank Negara Malaysia, Credit Card Operations in Malaysia, Monthly Statistical Bulletin, June 2008.

Credit utilization is measured as the percentage of total outstanding credit card debts against the total credit limit extended. Total credit limit extended has increased over the years following the increase in the number of credit cards in circulation. Number of credit cards in circulation has increased drastically, from 2.82 million in 2000 to 9.89 million in 2007. From Figure 2, it is clear that despite the increase in credit limit extended from RM 22,430 million in 2000 to RM87,989 million in 2007, the credit utilization of credit cards has in fact decreased. Further, the fraction of credit card purchases that is credit financed has also decreased.

The analysis on the credit card data appears to give mix signals on the severity of credit card debt and the interpretation of the data very much depends on how one wants to read it. Is the introduction of credit card into the payment landscape a curse or a gift to consumers and policy makers? Is it tempting consumers to live on credit or is it making payments more convenient for consumers and cost efficient for policy makers? Regardless on how we want to look at it, it is important to nip the issue of credit card debts before it becomes critical. Credit card issuers also run into risk with increasing credit card debts as credit cards debts are considered as unsecured loans. One of the ways to control the credit card debt problem is to understand the characteristics and the perception of credit cardholders in their monthly credit card bill payments habits. What distinguishes a credit card holder from another in the way credit card is used?

In the research on credit card, much studies have been conducted on profiling consumers and their credit card usage habits such as the extent of credit card expenditure, the extent of credit cards debt and also the ownership of credit cards.[3] However, little

[3] For literatures on the extent of credit card usage and credit card debts (*see*, Johnston, 2007; Jin and Devaney, 2005; Rui and DeVaney, 2005; Castronova and Hagstrom 2004; Min and Kim, 2003; Stavins,

has been done on the analysis of consumer's motivation of using credit card with the exception of the study by Kim and DeVaney (2001), Lee and Kwon (2002) and King(2004).

This paper extends from these studies several ways. *Firstly*, this study takes into account the credit cardholder's awareness and knowledge towards the fees structure imposed by the credit card issuers on the various credit cards' facilities. To our best knowledge, so far no studies on credit card have taken this factor into account when examining the credit cards usage. *Secondly*, in today's modern economy, this study assumes that most individuals holds more than one loan portfolio. Hence, instead of investigating the obvious which is; more loan commitments would lead to higher likelihood of failing to pay the monthly credit card bill in full, this study tries to investigate if different type of loan portfolios would lead to different degree of likelihood for a credit cardholder to have credit card debts. Lastly, majority of the existing credit card studies are conducted on the USA's data and little is known if Asian credit cardholders behave the same way as the Americans. Further, despite the concerns on the upward trend of credit card debts in Malaysia, there has not been a study carried out on the Malaysian credit cardholders.

A logistic regression model is used. The credit cardholder's monthly bill payment habit is used to indicate if the cardholder uses credit card as a payment instrument or as a credit instrument.

2001; Chien and Devaney, 2001; Durkin, 2000; Delener and Katzenstein, 1994 and etc.). For literature on credit cards ownership (*see*, Durkin, 2000, Kaynak et.al., 1994; Duca and Whitesell, 1995; Kinsey, 1981.

Credit Cards in Malaysia

Credit cards were first introduced in Malaysia in the 1970s. Before the Asian crisis in 1997, credit cards applicants must earn a minimum annual income of RM24,000 and are in active employment for three months when application for credit card is submitted. After the Asian crisis in 1997, the Bank Negara Malaysia (central bank of Malaysia) relaxed the income requirement to a minimum of RM18,000 per annum to helped ease liquidity problems among the consumers.

Credit cardholders must pay a minimum of 5% of their monthly transactions or RM 50 whichever is higher. Any outstanding payment will be charged 18% interest rate per annum (1.5% per month). Late payment charges will be imposed at the rate of 1% of the minimum payment if the credit cardholder fails to make the minimum payment by payment due date. Credit cardholders are given 20 days interest free period to enjoy on all retail transactions, provided all outstanding balances from previous month have been fully settled.

In the effort to promote responsible usage of credit cards and to promote credit card as a payment instrument instead of a credit instrument, with effect from July 1 2007, Bank Negara Malaysia (Central Bank of Malaysia) announced a tiered pricing structure for credit card users. According to the tiered pricing structure, credit cardholders who settle their outstanding balances promptly for 12 months consecutively will only be charged an interest rate of 15% per annum instead of the ceiling 18% per annum rate. Recently, following the introduction of the tiered pricing structure in 2007, with effect from July 1, 2008, cardholders who made only minimum or partial payment on their outstanding balances, will no longer enjoy the 20 days interest free period for new retail transactions. The new measures reflect Bank Negara Malaysia's emphasis of credit card as a payment instrument and not a credit instrument.

Model Development

The selection of variables that determine the type of credit card users are drawn from past studies by Johnston (2007), Jin and Devaney (2005), Rui and DeVaney (2005), Castronova and Hagstrom (2004), Lee and Kwon (2002), Min and Kim (2003), Stavins (2001), Chien and Devaney (2001), Durkin (2000), Delener and Katzenstein(1994) and Kaynak et al. (1994). The variables are broadly divided into three categories: a) Credit cardholder's socio-demographic and economic characteristics, b) Credit cardholder's perception towards debt and the role of credit card and c) Credit cardholder's level of awareness and knowledge towards the pricing structure of credit cards.

a. Socio-demographic and economic characteristics

The socio-demographic and economic characteristics included in the model are age, income, marital status, gender, education level, ethnic and the type of loan commitments undertaken by the cardholder.

In the Ando and Modigliani's life cycle hypothesis (1957), it was argued that the propensity to consume is higher in either young or old households, whose members are borrowing against future incomes or exhausting their life savings. The young and the old households have lower income than those in the middle age group as the younger ones are just starting out in their career and the older ones are retired or approaching retirement. In other words, this suggests that besides age, income levels also play a role in consumer credit. Hence, age and income are usually included in studies on consumer credit and credit card (for more recent studies, *see*, Bertaut and Haliassos, 2004; Castronova and Hagstrom, 2004; Yilmazer and DeVaney , 2006.

Further, marital status of an individual will affect the level of financial commitments undertaken by an individual. Married individuals are more likely to face budget constraints and hence would seek other means to ease their financial burden. Lyons (2003) and Yilmazer and DeVaney (2006) found that married individuals are more likely to hold debt than single individuals.

Males and females approach financial transactions and financial related decisions differently and this is found to be true by Jianankopoulous and Bernasek (1999) who showed that women are more risk averse when making financial related decisions. Further, as male are more likely to be the head of household who would be responsible of the financial needs of the household, it is expected that males are more likely to use credit card as a credit instrument than females. Yieh (1996), Flynn (2003), Lyon (2003) and Yilmazer and DeVaney (2006) are amongst those who found that males are more likely to hold credit card debt and the amount of credit card debt is also higher than the female credit cardholders.

According to the life-cycle permanent income hypothesis, rational individuals form expectations of their future earnings, borrowing against those expected future earnings and smooth their consumption over their life cycle. Hence, if education is considered a future resource as argued by Becker (1975), this could imply that higher educated individuals expect higher future income which is then likely translate into higher demand for consumption and higher current borrowing. On the other hand, higher education implies better credit worthiness as higher educated individuals are more likely to hold higher paying jobs. Further, higher educated individuals have better understanding on credit and financial management. Thus, if this argument holds true, education is expected to have a negative effect on usage of credit card as a credit instrument. Choi and DeVaney (1995), Zhu and Meeks (1994) are amongst those who found a positive relationship between education and credit use while Lee and Kwon (2002), Castronova and Hagstrom (2004), Steidle (1994) and Bei (1993) have found the reverse relationship to hold.

In a multi-ethnic country like Malaysia, the ethnic factor is added to investigate if there are differences across ethnic groups in the way they use credit cards. Ethnicity has been added into the studies on credit card usage and debt by previous researches such as Min and Kim (2003), Castronova and Hagstrom (2004), Delener and Katzenstein (1994), Delener and Nedjet (1994) and Chebat et.al (1988).

There are four common loans, which are included in the model namely housing loan, car loan, study loan and personal loans. These loans serve different purposes and differ in terms of the average value of the loan, the repayment period and interest rates[4]. In other words, these loans signal different level of financial commitments and needs of an individual, which then may influence the way a credit cardholder uses credit card.

b. Perception towards debt and credit card

Theory of Planned Behaviour (Ajzen, 1991) and the Theory of Reasoned Action (Fishbein and Ajzen, 1980) showed that beliefs and attitude play an important role in determining the action and behaviour of an individual. Chien and DeVaney (2001) distinguished between general and specific attitude towards the use of credit. The general

[4] For example, the average repayment period for car loan 7 years while housing loan has a longer repayment period which of over 20 years.

attitude in this paper refers to the general perception of credit cardholder toward debt and borrowing while the specific attitude refers to the opinion of the credit cardholder on the primary function of credit card. Lee and Kwon (2002), Chien and DeVaney (2001), Bi and Montalto (2005), Steidle (1994) and Bei (1993) have examined how credit cardholder's attitude towards debt will influence the extent of credit card debt that a cardholder undertakes.

c. Awareness and Knowledge towards the pricing structure

The inclusion of the regulatory knowledge factor is based on the premise that sound financial management can only take place when consumers are financial literate and has full understanding on the terms and conditions involved in the use of any financial facilities. Ignorance of credit cardholders on the terms and conditions stipulated by credit cards issuers have been cited as one of the contributory factors to excessive spending behaviour and the failure to repay. Hence, this paper will investigate if lack of awareness and knowledge on the pricing structure of credit cards affects the way credit cards are used.

In this paper, respondents are given six questions to test their awareness on the various charges imposed on the use of credit cards and four questions are given to test their specific knowledge on the charges imposed on the use of credit cards. The questions touch on matters such as the number of interest free days entitled to a cardholder, the level of interest rate charged should there be an outstanding balance, the amount of minimum payment expected and the amount of transaction fees charged for the usage of cash advance facilities. Respondents' answers will be marked with the maximum score of 100%.

Methodology: Data and Model

Data

The data used in this study is collected from a survey conducted on active credit cardholders in Penang from December 2007 to February 2008. Active credit cardholders are defined as those with at least RM50 transactions per month. All credit card issuers stipulate a minimum payment of monthly credit card bill to be RM50. Hence, if a credit cardholder uses less than RM50, it will be impossible to judge from their monthly bill payment habit whether they are using credit card as a payment instrument or a credit instrument. Thus, credit cardholders with less than RM50 monthly transactions are considered as inactive credit cardholders and are excluded from the study.

Responses from the credit cardholders are obtained either through a face-to-face interview or a self-administered questionnaire. Respondents are selected randomly. The questionnaire focuses on credit cards only. A total of 685 credit cardholders were approached for the study, of which, 635 responded to the survey. However, only 617 returned questionnaires were complete while as the incomplete questionnaires have missing key information. Some respondents have reservations revealing information related to income and their loan portfolios.

Model

A binary choice logistic regression model is used to determine the likelihood that a credit cardholder typically pays his monthly credit card bill in full or only pays the minimum or less than minimum payment required in his monthly credit card bill. The former is said to be a convenience user who treats the credit card as a payment instrument while the latter is regarded as a credit revolver who takes the credit card as a credit instrument. The logistic regression model can be expressed as follows:

$$\mathrm{Log}\frac{P}{1-P} = \alpha + \beta_i X_i + \varepsilon \qquad (1)$$

The dependent variable used in examining the determinants of credit cardholder's purpose of using credit card is measured by a binary dummy variable with value = 1 if the credit cardholder(respondent) typically pays his monthly credit card bill in full and value = 0, if the credit cardholder fails to pays his monthly credit card in full. This would imply that the credit cardholder only pays minimum or less than the minimum required amount of his monthly credit card bill. Hence, P refers to the probability that a credit cardholder uses the credit card as a payment instrument (hence, a convenience user) and 1-P refers to the probability that a credit cardholder uses the credit card as a credit instrument (hence, a credit revolver). $\mathrm{Log}\frac{P}{1-P}$ is the log of odds that a credit cardholder is convenience user. βi are the coefficients of the explanatory variables and X_i are the explanatory variables as hypothesized in Table 1. ε is the stochastic disturbance term of the regression.

Table 1: Summary of Sample Characteristics and Explanatory Variables

Variables	Description of Variables	Pays monthly credit card bill in full (Convenience user) n_1=334		Do not pay monthly credit card bill in full (Credit Revolver) n_2= 283		Total Sample N= 617	
		Mean	S.E	Mean	S.E	Mean	S.E
i) ***Socio-demographic and economic factors*** (Binary variables: yes=1, no=0)							
Age 18-30	Respondent's age between 18-30	0.50	0.027	0.51	0.029	0.50	0.020
Age 31-50	Respondent's age between 31-50	0.37	0.026	0.36	0.026	0.37	0.019
Male	Respondent is male	0.63	0.026	0.46	0.030	0.55	0.020
Married	Respondent is married	0.48	0.027	0.60	0.029	0.53	0.020
Tertiary	Respondent has tertiary education	0.72	0.024	0.59	0.029	0.66	0.019
Income 1	Respondent's income is between RM1400-RM2999	0.31	0.025	0.23	0.025	0.28	0.018
Income 2	Respondent's income is between RM3000 –RM4599	0.35	0.026	0..38	0.029	0.3	0.019
Income 3	Respondent's income is between RM4600-RM5999	0.22	0.023	0.19	0.023	0.21	0.016
Malay	Respondent is a Malay	0.28	0.024	0.42	0.029	0.34	0.019
Chinese	Respondent is a Chinese	0.59	0.027	0.44	0.029	0.52	0.020
Housing Loan	Respondent has housing loan	0.51	0.027	0.64	0.029	0.57	0.020
Car Loan	Respondent has car loan	0.69	0.025	0.65	0.029	0.67	0.019
Study Loan	Respondent has study loan	0.25	0.024	0.74	0.026	0.48	0.020
Personal Loan	Respondent has personal loan	0.31	0.025	0.32	0.028	0.32	0.019
ii) Opinion towards ... (Binary variables: yes=1, no=0)							
Debt	Should not borrow money if cannot afford to repay and any money owed should be paid back straight away even if that means going short on other things	0.84	0.021	0.87	0.020	0.85	0.014
Credit card	Credit card is a payment instrument	0.84	0.020	0.52	0.030	0.69	0.019
iii) Awareness and Knowledge on Pricing Structure							
Awareness	Level of awareness (%)	82.4	1.11	76.3	1.38	79.6	0.88
Knowledge	Level of knowledge (%)	61.9	1.60	55.6	1.68	59.0	1.16

Characteristics of survey respondents

From Table 1, in terms of the socio-demographic and economic factors, it appears that there are considerable differences in the gender, marital status and education level of respondents in their monthly credit card bill payment habit. It is found that 63% of male, 48% of married and 73% of cardholders with tertiary education pay their monthly credit card bills in full. Further, among the four types of loan holdings, there exist differences among those who have housing loan and/or study loan. Those who have housing loan and study loan are more likely to fail to pay their monthly credit card bill in full. It is found that among the respondents interviewed, 64% of those with housing loan and 74% of those that holds a study loan do not pay their monthly credit card bill in full.

While attitude towards debt do not make huge differences in the respondents' monthly credit card bill payment habit, perception towards the role of credit card appears to have an effect on respondents' monthly credit card bill payment. Further, it is found that respondents that have a better understanding on the pricing structure of credit card seems to pay their monthly credit card bill in full.

Empirical Findings

The estimated Logit coefficients (column 1), the odds ratio (column 2), the standard error (column 3) and the associated z-statistics (column 4) are reported in Table 2. The goodness of fit tests for the model indicated that the Likelihood ratio (LR) statistics is 292.0 which has a probability value of 0.0000. Thus, the null hypothesis is rejected and this concludes that the model fits the data well. This is supported by the Hosmer-Lemeshow statistics, which has a value of 9.91 and a probability value of 0.2713. This indicates that the null hypothesis is accepted and that the model is good fit. Further, on evaluating the prediction power of the model, it is found that 80.55% of the prediction of this model is correct. Hence, it can be concluded that the model developed here is a good fit model.

a. Socio-demographic and economic factors

In terms of socio-demographic and economic factors, it is found that gender, marital status, education, income and holdings of study loan have significant effect on the type of credit card user. Age, ethnic factor and other loan holdings do not have significant impact on the way a credit cardholder treats credit card.

From column (2) in Table 2, it is found that male cardholder is 1.67 times more likely to be pay his monthly credit card bill in full (convenience user) than a female credit cardholder while a married credit cardholder is 0.45 times less likely to pay his monthly credit card bill in full than an unmarried credit cardholder. The finding suggests that males are more apprehensive about spending on credit than females, which differs from the existing empirical findings such as studies by Yieh (1996), Lyons (2003) and Yilmazer and DeVaney (2006). Perhaps, the credit cardholders in this study indicate that the stereotype placed on women as keen shoppers may ring some truth here where women are tempted to overspend with credit card and eventually find difficulties to repay their credit card spending. The higher likelihood for a married credit cardholder to be a credit revolver than an unmarried credit cardholder is perhaps due to the higher financial commitments that a married cardholder has to undertake than an unmarried cardholder. This is supported by the fact that married credit cardholder are found to hold more loan portfolios than single married cardholder[5].

Credit cardholder who has a tertiary education is 1.5 times more likely to pay his monthly credit card bill in full than a credit cardholder who does not have a tertiary education. The finding here is consistent with Zhu and Meeks (1994) and Choi and

[5] A cross-tabulation is done to see the relationship between marital status and number of loans undertaken by each individual. From the survey, it is found that more married individuals hold two and more loan portfolios than single individuals.

DeVaney (1995) who also found a negative relationship between education and credit use. Tertiary educated credit cardholders may have better understanding on the financial implications of failure to pay the monthly credit card bill in full.

There are four categories of income levels considered in the model with income above RM6000 as the base variable. It is found that two income groups (RM1400-RM2999) and (RM4600 to RM5999) which is lower than the highest income group (above RM6000) are more likely to pay their monthly credit card bill in full than those earning above RM6000. Further, it is also found that those earning RM1400-RM2999 are more likely to pay their monthly credit card bill in full compared to those earning between RM4600 to RM5999. These findings seems to contradict the results in existing studies such as by Chien and DeVaney (2001), Min and Kim (2003) and Castronova and Hagstrom (2004). Perhaps this may suggest that those earning higher income are more willing to pay the financial charges compared to those earning less and may even find the financial charges affordable given the credit convenience they get to enjoy when they use credit cards. However, there is no significant differences between income earners of RM3000 to RM4599 with the highest income group (above RM6000) in the way the monthly credit card bill is paid.

Amongst the four type of loans holdings, only holdings of study loan is significant. It is found that a credit cardholder who holds are study loan is 0.75 times less likely to pay his monthly credit card bill in full. Holders of study loan are likely to be those who have just completed their studies and are in the early stage of their career[6]. Credit cards provide easy credit access for them where other alternatives of financial

[6] It is found that 50% of the holders of study loan in this study are from between the age of 18-30. In other words, majority of the holders of study loan are just starting out in their career.

relief may not be as easily available to them given their short employment and credit history. Thus, holders of study loans are more likely to use credit card as a credit instrument to cushion their financial constraints.

b. Perception towards debt and credit card

General perceptions on debt and borrowing makes no significant difference to the way a credit cardholder handles his monthly credit card bill payments. In fact, the results here showed that perception on debt does not reflect the actual action taken by credit cardholders in their monthly credit card bill payment habit. However, specific perception on the main function of credit card appears to have a significant impact on the way a credit card is actually used. A credit cardholder who thinks that the credit card is a convenient payment tool is 5.63 times more likely to pay his monthly credit card bill in full than a credit cardholder who think that credit card is credit instrument. This implies that to instil responsible usage of credit card, it is essential that a credit cardholder be educated on the correct primary function of credit card.

c. Level of knowledge and awareness on the pricing structure

The findings show that a credit cardholder who has higher level of awareness on the pricing structure of credit cards is 1.01 times more likely to pay his monthly credit card bill in full. However, level of knowledge on the pricing structure is found to have no significant effect. In general, respondents are aware that fees are charged for the various facilities offered by credit card but fewer respondents are knowledgeable on the exact fees charged. It is found that over 68% of the respondents in this survey had scored more than half of the question related to the awareness of fees correct while only about 48% of the respondents could answer correctly more than half of the knowledge based questions that asked for the exact fees charged. Nevertheless, the positive relationship between awareness and knowledge with the way credit card is used indicate that educating credit cardholders on the financial costs of using credit card as a credit instrument is essential in shaping responsible usage of credit cards.

Table 2: Summary statistics for logit analysis of determinants of credit cardholder's monthly credit card bill payments habit

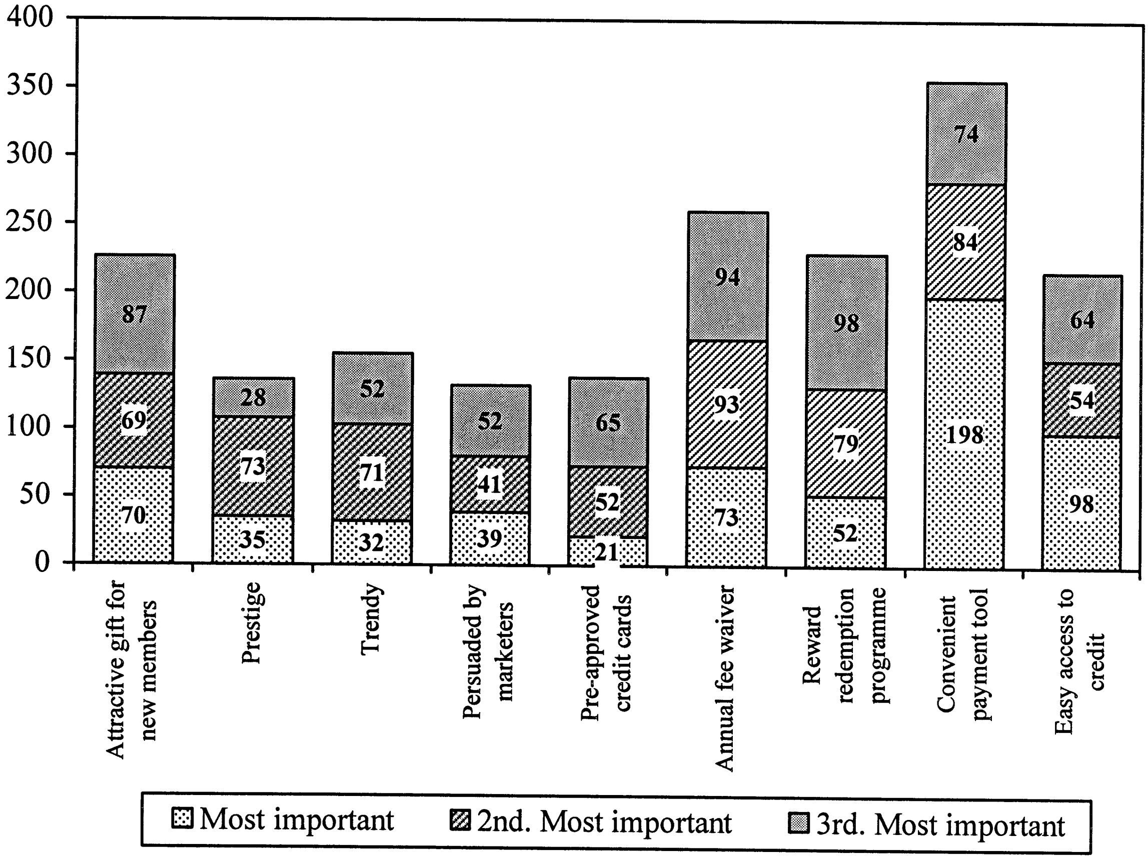
Explanatory Variables	Log of odds, β (1)	Odds ratio, e^{β} (2)	Std. Error (3)	Z-statistics (4)
a. Socio-demographic and economic factors				
Age18-30	-0.517	0.596	0.365	-1.41
Age 31-50	-0.522	0.593	0.372	-1.40
Male	0.515**	1.675	0.229	2.25
Married	-0.791***	0.453	0.222	-3.55
Education (Tertiary)	0.405*	1.499	0.232	1.74
Income 1 (RM1400-RM2999)	0.732**	2.080	0.352	2.08
Income 2 (RM3000-RM4599)	-0.071	0.931	0.342	-0.21
Income 3 (RM4600-RM5999)	0.658*	1.931	0.387	1.70
Malay	-0.421	0.656	0.344	-1.22
Chinese	-0.060	0.942	0.323	-0.19
Housing Loan	-0.361	0.697	0.222	-1.63
Car Loan	0.219	1.245	0.224	0.98
Study Loan	-2.582***	0.076	0.232	-11.12
Personal Loan	0.273	1.313	0.228	1.20
b. Perception towards...				
Debt	-0.376	0.686	0.286	-1.32
Credit Card	1.728***	5.631	0.259	6.67
c. Level of Awareness and Knowledge				
Awareness	0.011**	1.011	0.006	1.98
Knowledge	0.002	1.002	0.004	0.52

Note: *** at 1% significant rate; ** at 5% significant rate; * at 10% significant rate

Drivers to Credit Card Ownership

Respondents were asked to rank the top three reasons for holding credit cards. Figure 3 shows the drivers to holding credit card according the respondent's opinion. In terms of the most important driver, it is clear from Figure 3, that the convenience of using credit card as a payment tool is the most important driver to credit card ownership. This is followed by the ease of accessing credit via credit card and annual fee waiver offered by credit card issuers. However, when taking into account the overall top three most important drivers to credit card ownership, the attractiveness of credit access via credit card fails to dominate other credit card features, which were found to be more appealing such as the waiver of annual fees and the attractive reward redemption programme offered to credit cardholders.

Figure 3: Three Most Important Drivers to Credit Card Ownership



It is also found that in the ranking for all the potential drivers to credit card ownership as listed above, significant differences are only found between the different rankings for "convenient payment tool" and "easy access to credit" with the monthly credit card bill payment habit. In other words, the credit cardholder's motive of holding credit card is a significant signal on how credit card is used- as a payment tool or a credit instrument.

Conclusion

The purpose of this study is to analyse the determinants that are significant in distinguishing type of credit card user, namely a convenient credit card user or a credit card revolver. The findings can help credit card issuers in the risk assessments of a potential credit card applicant and also risk management of the credit cards business in financial institutions.

The results from the logistic regression model revealed several results that contradict existing findings. Firstly, females are found to be more likely to be a credit card revolver than males. Unlike other forms of debts such as instalment debts, credit card debts are largely unplanned debts. Men are usually the main holders of instalment debts such as housing loans and car loans, which are considered, planned debts. However, for women who are compulsive shoppers, the readily available credit limits in credit card become a curse for women to satisfy their impulsive purchases. As a result, women unintentionally rake up high credit card bills, which they later find it difficult to repay. In some way, the findings here highlight the difference between credit card debts and other forms of debts.

Secondly, it is found that higher income credit cardholders are more likely to fail to pay their monthly credit card bill in full than the lower income credit cardholders. As interest rate charged on late payments is the same across all credit cardholders, higher income credit cardholders may find the interest rate charges and late payment charges relatively more affordable than lower income credit cardholders. As a result, higher income credit cardholders are less prudent in using the credit facilities offered by credit cards. The easy access to credit in credit cards becomes a curse for higher income credit cardholders. As such, in addition to the current tiered interest rate charges based on credit cardholder's monthly credit card bill payment behaviour, the authorities may wish to consider tiered charges according to cardholder's credit limit. After all, credit cardholder's credit limit is dependent on his income level and credit history.

Thirdly, the non-significance of age in distinguishing convenient users of credit card and credit revolvers may indicate the credit card is so widely used that it is no longer perceive as a new payment technology where previously, the older generation are more averse towards credit financed consumption. To an extent, this may signal that across all age groups, consumers are now receptive towards non-cash payments and a "buy today, pay later" lifestyle.

Specific perception on the main role of credit card and the motive of holding a credit card are significant in distinguishing a convenient credit card user with a credit revolver. In other words, the "right" portrayal of the functions of credit card is crucial in shaping the "right" usage of credit cards. Hence, if credit card issuers put more emphasis in promoting the credit facilities in credit cards such as the offer of pre-approved credit cards, the attractive balance transfers rates and the interest free instalment programmes on purchases of durable goods, then it is not surprising that credit cardholders will begin to perceive credit cards as a credit instrument rather than a payment instrument. Thus, besides the implementing of stiffer finance charges on late payors, the monetary authorities may need to look into the way credit issuers compete in the credit card industry.

In general, it is found that while credit cardholders are aware of the existence of some of the terms and conditions of credit card use, they however, do not really know the actual charges involved in using the various facilities provided by credit card. As a result, the impact of knowledge of the pricing structure on the monthly credit card bill payment habit is not significant. Nevertheless, the positive relationship between knowledge of price structure and bill payment habit implies that good knowledge of the finance charges involved in the use of the various credit card facilities, will increase the likelihood of paying the monthly credit card bill in full. In short, promoting the "right" function of credit card and educating credit cardholders on the finance charges involved are essential in nurturing good credit cardholders.

In reality, while the credit revolvers are considered the "bad apples" among credit cardholders, they are a source of profits to credit issuers and it is this group of credit cardholders that make credit card business so attractive and profitable. If all credit cardholders are "good apples", credit issuers are not able to reap much profit. However, good credit cardholders are important in the risk management of the credit card business. Knowing the likelihood that a potential credit cardholder is a "good apple" or a "bad apple", is helpful to credit card issuers in diversifying their risks of offering credit to credit cardholders accordingly.

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