

## **CARDHOLDERS' ATTITUDE AND BANK CREDIT CARD USAGE IN MALAYSIA: AN EXPLORATORY STUDY**

*T. Ramayah*  
*Nasser Noor*  
*Aizzat Mohd. Nasurdin*  
Universiti Sains Malaysia  
Malaysia

*Lim Hee Choo*  
Hong Leong Bank Bhd.  
Malaysia

### **ABSTRACT**

*The study is aimed at validating attributes that influence the differences in attitudes among active and inactive cardholders. By focusing on relevant attributes that have been identified, it is believed that credit card issuing banks can position themselves effectively via their marketing strategies to activate their existing cardholders' usage rate as well as to attract new active cardholders. Thirteen important attributes were used to measure credit cardholders' attitude. These attributes include acceptance level, credit limit, interest-free repayment period, annual fee, application approval period, ancillary functions, handling of cardholders' complaints, issuing bank image, gift/bonus to new applicants, card design, leaflet to describe the card, and advertising by the issuing bank. Acceptance level, credit limit, interest free repayment period, ancillary functions, handling of cardholders' complaints, bank image, and bank advertising were found to be the most important attributes that influenced cardholders' attitudes in distinguishing active from inactive cardholders. Based on the results of the study, several suggestions are forwarded to credit card issuing banks as a step to stimulate credit cardholders' usage level. Among these are to work closer with various retailers to promote the credit card payment mode, to provide adequate credit limit to cardholders, to extend interest free repayment period from 20 days to 30 days, to implement strategic alliances with firms involved in travelling, entertainment, insurance, and telecommunications and, to advertise more so as to create a brand name for the issuing bank.*

### **INTRODUCTION**

At the beginning of the 20<sup>th</sup> century, credit cards were first issued by hotels in the United States. By 1914, departmental stores and gas stations also followed the trend of issuing credit cards. In the 1950's, third party cards appeared, which acted as entertainment and travel cards. Eventually bankcard appeared. In the 1960's the first bankcard was initiated by BankAmericard, which is now known as Visa card. In order to avoid competition, Master Charge systems and Visa established themselves as the bank's credit card industry in the United States (Garcia, 1980).

Since 1960, usage of bank credit cards in the United States had undergone substantial growth. Credit cards had replaced cash and cheque in many kinds of transactions. In the retail industry, the use of "non-store" credit cards, such as Visa, Mastercard and American Express, had also grown rapidly. In 1978, non-store cards were used in almost three per cent of all transactions in departmental stores with over \$1 million in sales. By the end of 1980, non-store cards had increased to eight per cent of the transactions. On the other hand, in specialty stores with over \$1 million sales, credit cards accounted for ten per cent of the dollar sales volume in 1978. In 1980, credit cards sales had increased dramatically to seventeen per cent of the dollar sales volume (Worthington, 1990).

Purchasing habits has changed with the usage of credit cards throughout the world. The credit card was initially used as a common payment mode for luxuries, such as travel, and accommodation. However, it is now increasingly used for purchasing small items of convenience in our daily lives ranging from the esoteric to the mundane (Lee, 2000).

The use of credit card helped consumers to carry forward their payments against their daily expenditures. In the case of bank, travel and entertainment cards, retailers received payment from card issuer such as banks and hotels who acted as third party in billing customer at the end of the month. It had become a common practice for most of the card issuers to provide revolving credit facilities for their cardholders by imposing up to 1.5% of interest charges per month. However cardholders were also allowed to pay their bill before the due date to avoid unnecessary interest charges. The current practice of all financial institutions were to impose twenty days grace period between the statement date and payment due date (Lee and Toh, 1995).

In developed countries such as the United States and Europe, credit cards and plastic money were viewed as an indication of cashless society. Cashless society allows high tech infrastructure to be carried out in developed country through the usage of plastic money (Ingene and Levy, 1982). For instance, it is a common phenomenon to purchase groceries and gasoline from an automated petrol station even though there was no attendant. In developing countries like Malaysia, this facility has also been implemented where cardholders could charge their credit cards for purchase of gasoline without the aid of attendant.

According to a research done by Visa International Ltd, there were about 900,000 Visa cardholders in Malaysia in 1999 (Daljit, 1999). According to the company, Malaysia is an ideal market for credit cards in the region due to its large and growing educated population. The research showed that out of the 7.5 million Malaysian with bank accounts, a million of them were eligible for credit cards. As compared to other Southeast Asian countries, Malaysia still remains an attractive market for Visa International to expand their business.

According to Mastercard, Malaysia recorded the highest index of consumer optimism in the region. It grew from 67.6 to 89.3 from year 1998 to 1999 (Daljit, 1999). The increase of confidence was due to improvement in the nation's economic indicators, political stability and social development. Various credit card issuers had come up with extensive advertising in the local media in order to compete intensively. Banks and credit card companies were not only offering co-branding and affinity cards as benefits, but were also giving out attractive gifts including hand phones, audio equipments, supplementary cards and holiday trips as incentives to retain existing cardholders as well as attracting new cardholders.

Bank Negara Malaysia's (2001) latest statistics showed that credit cards circulation has enjoyed a favourable growth in Malaysia, the average growth rate per year is 12.5% over the past nine years for number of credit cards issued whereas the usage of credit card for purchase has also increased with a growth rate of 23% from year 1992 to 2000 (see Appendix 1 for details). This points to the enormous potential for credit card as a means of purchase in Malaysia.

As part of the new guidelines to stimulate credit growth in late 1998 and to ensure that charges imposed on credit cardholders were reasonable, credit card issuers were not allowed to charge card holders more than 1.5% per month or 18% per annum in finance charges. Moreover the central bank also decided that late payment charges should not be more than 1% of the amount in default and the banking institution would only be allowed to charge a minimum penalty of RM5 (Lee and Toh, 1995).

### **Problem Statement**

While credit cards have been introduced in developed countries decades ago, their introduction in developing countries like Malaysia is relatively recent. In a country where cheque usage is rather limited, plastic cards, particularly credit cards played an important role in carrying out day-to-day transactions.

The credit card business enabled the bank to attract new customers as well as retaining existing customers in order to build a stronger customer base. However, many credit cardholders in Malaysia are non-active cardholders although a significant proportion of them might have more than one bank's credit card. Based on the classification of "light" and "heavy" users for tangible consumer goods (Cook and Mindak, 1984), credit card users can be categorized according to their differences in cardholder usage rates. In another research conducted by Chan (1997), an assistant professor in Hong Kong Polytechnic University, an "active cardholder" in his study refers to those whose card usage rate was at least ten times per month, whereas "inactive cardholder" referred to card usage rate of less than ten times per month. In their recent research (2001), Hamilton and Khan operationalized credit card users into three categories: (i) non-active card holders; (ii) non-interest paying active cardholders; and (iii) interest paying active card holders. A

simple survey on three local financial institutions in Malaysia, namely Malayan Banking, MBF Finance and Hong Leong Bank also revealed that banks do differentiate between active and non-active card users using a usage rate of ten times per month as the cut-off point. In this study, credit card users will be classified according to Chan's (1997) categorization.

Although most banks in Malaysia, such as Citibank, Standard Chartered Bank, Hong Kong Bank and other local financial institution such as Malayan Banking and MBF Finance had significant credit card customer bases, they were competing among themselves to attract active cardholders. However, not many of them managed to identify and differentiate the attitudes between active and non-active cardholders towards the usage of credit card.

### **Objective of the Study**

The purpose of this study is to examine the relationship between credit cardholders' attitudes and their usage level in order to identify criterias that help to distinguish between an active and inactive credit card user. Since most of the issuing banks in Malaysia have attempted to expand their credit card businesses, this study is deemed crucial for the issuing banks since they will be able to adjust their marketing strategies effectively in order to attract more active card users. Additionally, this study also aims to identify the relationship between demographic and individual socioeconomic factors, with credit card usage. The results obtained from the "Survey of Consumer Finances" undertaken by Avery (1986) showed that demographic variables such as income, education, wealth, and age have a positive and significant correlations with credit card usage level. Finally, the third objective of this investigation is to examine whether attitude can be used to discriminate between active and inactive credit card users.

### **LITERATURE REVIEW**

According to Mowen (1987), the word "attitude" comes from the Latin term, *aptus* which means "fitness" or "adaptedness". Consistent with Thurstone's (1931) position, Fishbein and Ajzen (1975) conceptualized attitude as the amount of affect for or against some object. In recent years, the trend is to link attitude to the concept of feelings rather than beliefs. Mowen (1987) in his book entitled *Consumer Behavior*, defined attitudes as consisting of the following:

- Attitudes are likes and dislikes.
- The "major characteristics that distinguish attitude from other concepts are its evaluative or affective nature".
- Attitudes are the core of our likes and dislikes for certain people, groups, situation, object and intangible ideas.

### **Association between Attitudes and Credit Card Usage**

Most of the research on credit cards have centered on user profiles and exploration of economic issues. Economic researchers, for instance, have directed their studies on consumer demand by relying on economic parameters such as finance charge and consumption amount. Some even extended their research into the effects of card usage on money supply, retailing and banking. On the other hand, most of the studies undertaken by behavioral researchers have focused on analyzing credit card possession and usage (Hirschman, 1978).

Yi-Wen Chien and Devaney (2001) found that the higher the specific attitude index, the higher would be the outstanding credit balances, the more favourable one's general attitude towards using credit, and the higher would be the installment debt. Hasba Laila (2001) found that attitude is positively related to credit cards usage among workers in an institution of higher learning in Malaysia.

Kidwell and Turrisi (2000) found that college students had favourable attitudes towards cognitive variables when acquiring credit cards. Hayhoe, Leach, Turner, Bruin and Lawrence (2000) found that affective credit attitude influenced credit card purchasing behaviour among college students.

A study relating to card usage and attitudinal differences was conducted by Chan in 1997. In his study, inactive cardholders were those with a usage rate of less than ten times per month. On the other hand, active cardholders were those with a usage rate of at least ten times per month. Thirteen important attributes were identified after interviewing some of the managers of credit card companies. This included wide acceptance level, high credit limit, ease of bill payment method, long interest free period, low annual fee, short application approval period, effective handling of cardholders complaints, bank image, attractive gift/bonus to cardholders, design of card, well prepared leaflet, bank advertising and ancillary functions of the cards. Multi-attribute attitude model was adopted to measure the attitudes of credit cardholders in the current study.

The findings of Chan (1997)'s study indicated that 56.5% of the sample consisted of inactive cardholders whilst the remaining 43.5% were active cardholders. In terms of relative importance on card attributes, active cardholders rated wide acceptance and detailed leaflet to describe the card as more important whereas inactive cardholders viewed the design of the card as more important. In terms of satisfaction with the card attributes, active cardholders felt significantly more satisfied with wide acceptance, large credit limit, and low annual fee as compared to inactive cardholders. In terms of attitudes, out of these thirteen attributes, wide acceptance and high credit limit were proven to be the most influential variables that contributed to active card usage level. The results obtained also supported the findings made by most of the behavioral studies which discovered a positive correlation between attitude and usage rate (Awh and Waters, 1974).

According to Hamstra (2000) in his study on new credit card applications reward programs became more important among people seeking credit cards online. From the result of the study, 54% of the respondents who sought credit card information online, considered an enticing reward program to be an important feature of a credit card as compared to 30% of the online adult population. According to the study, other features that credit card seekers favoured included low regular interest rates, a trusted brand, quick approval and low amount of required documentation. Although a significant number of credit card seekers looked for the best rates and easily switched to other credit cards company based on the interest charged, the interest rate became relatively less important as compared to the rewards offered by the issuing banks.

Etzel and Jones (1978) also conducted a study on customers' attitudes towards credit and credit card. The respondents were divided into three different groups based on their attitudes namely convenience users, installment users, and inactive users. The focus of the research was on the consumer's attitude differences between convenience, installment and inactive bank credit cardholders. Although these groups of cardholders perceived credit as expensive, their attitudes towards card usage, however, were different.

The first group of cardholders consisted of convenience users who felt that the use of credit cards were more convenient than cash. This group of people was more conservative who avoided interest charges while enjoying the convenience of credit cards. The second group of cardholders consisted of installment users who acted differently from convenience users. For them, credit helped them to buy products that they could not afford to pay for using cash at the moment of purchase. The third group of cardholders was the inactive users who put credit card usage as the last choice and did not perceive credit cards as convenient even when transacting small purchase. They did not perceive the advantage of using a credit card and were more concerned about loss and theft of their cards.

Canner and Cyrnak (1986) used the "Survey of Consumer Finances" data of 1983 to examine bankcard usage pattern. The study showed that the "heavy holders" of the bank account segment were more likely to hold a wider variety of cards and higher income families were more likely to hold credit cards. Nearly half of all cardholders used their cards primarily for "convenience" purposes. Therefore, convenience use was positively related to family income and financial liquidity. Nevertheless, the use of credit cards also caused the family's debt to increase.

Hirschman (1979) investigated the influence of payment system on consumers' purchasing behavior. In-store purchases were analyzed according to type of card used and by mode of payment. The result showed that a person who holds only a bankcard had the same tendency to purchase as a person having a store-issued card. Therefore, consumers seem to be indifferent towards different cards and considered them to have the same functions and benefits. The results obtained by Hirschman (1979) showed that cardholders having both bankcards and in-store cards would be more likely to purchase than those having an in-

store card. Therefore, purchasing tendency would be stimulated for those having multiple cards coupled with a wider acceptance of the card by retailers.

Becker (1965) conducted a study on credit card utilization and perception of time by cardholders. The main purpose of the research was to link the cardholder's behavior to the discounted value of time. The result obtained by Becker (1965) indicated that cardholders placed higher value on immediate purchase rather than future purchase. Bowers and Crosby (1979) also conducted the same study pertaining to time preference. Individuals who preferred redistribution of expenses to meet future income or in other words those who prefer to buy on credit, normally allowed interest charges on credit card use. These two studies (Becker, 1965; Bowers and Crosby, 1979) showed that credit cards were used as a medium of exchange that provided short-term revolving credit in order to purchase goods or services.

Kaynak and Ugur (1984) conducted a cross-cultural study on cardholders' attitudes among Canadians and Americans. In their study, credit card usage behavior between Canadians and Americans was evaluated. Their results showed that both populations of the cardholders perceived credit card as useful because cards were safer than cash, and help them to pay for impulsive purchases. Both the American and Canadian cardholders showed the same pattern regarding attitudes towards ownership of credit cards.

Chebat, Laroche, and Malette (1988) also conducted another cross-cultural study between English-speaking and French-speaking Canadians. In their study, a comparison of attitudes towards credit cards usage was made. Various attitudinal statement on the card usage showed that cardholders developed an attitude of using credit cards only under emergency situations for both groups. The two samples indicated that a user's financial situation and preference toward credit cards were the main concern in card usage. The English-speaking group was more concerned about costs, accuracy, safety, practicality and facilitation, whereas the French-speaking group was more concerned about cost, accuracy, over consuming, and over spending that would indirectly affect their consumption behavior. The study also indicated that income and education were positively related to frequency of credit card usage.

### **Relationship between Demographic Factors and Credit Card Usage**

Syed Sharaf (1998) in his study on credit card usage among consumers in Penang, Malaysia found that there were significant differences in credit card usage according to several demographic variables such as marital status, educational level, sector of employment, and race. Nevertheless no differences were found to exist in credit card usage between males and females.

Munro and Hirt (1998) found that there were significant differences between demographic factors such as race, and academic standing with credit card payment practices. Kaynak,

Kucukemiroglu and Ozmen (1995) studied credit card users in Turkey and found that income and education was positively related to card usage while gender had a negative influence on card usage. Choi and DeVaney (1995) studied households with bank and retail cards in the United States and found that home ownership and education was positively related to card usage, whilst gender was negatively related to card usage. In another research undertaken by Davies and Lea (1995), students with higher income had higher debt arising from usage of credit cards.

Martell and Fitts (1981) tried to distinguish bank credit card users from non-users. Data for their research were obtained from a random sample of American card customers. Apart from income, occupation, and education, their model included socio-economic variables such as the number of banks a household dealt with, the number of basic accounts owned, the kind of basic accounts owned, the length of accounts owned and the length of residence. Attitudinal and demographic variables were found to be important. The study carried out by Martell and Fitts (1981) showed that bank credit cardholders normally had higher income, were better educated, owned multiple bank accounts, and employed a stable pattern of banking. However, age in this instance, did not contribute to the discriminatory function.

Bowers and Crosby (1979) conducted a two-year longitudinal study to assess credit behavior. Their study specifically focused on low-income bank credit card users in order to observe their level of usage. Their research showed that at the beginning of the year, respondents settled the outstanding balance frequently in order to maintain the maximum credit limit. However in the second year, the credit limit granted was almost fully utilized, thus, maintaining a very low available credit balance. Low-income cardholders exhibited impulsive buying behavior and tended to use credit cards for installment purposes. However, since the sample size was small, the findings by Bowers and Crosby (1979) could not be generalized to all low-income cardholders.

## **RESEARCH FRAMEWORK AND METHODOLOGY**

The objective of the present study is to compare attitudes between inactive and active cardholders. In traditional consumer research, cognitive foundation was the most important variable to explain consumer attitude (Wilkie and Pessemier, 1973). Since the multi-attribute attitude (MAA) model enables a researcher to examine the relationship between consumers' product knowledge and consumers' attitudes towards product attributes, this model will be used to assess cardholders' attitudes in the current investigation.

According to Wilkie (1986), a basic MAA model comprised of three important elements:

1. Attribute: MAA model assumed that important characteristics of an attitude toward an object (credit card) could be identified by taking into consideration all attributes (attribute1, attribute2, ... attribute n) when forming their overall attitude toward an object.
2. Belief measure (E<sub>i</sub>): Belief measure refers to the consumer's cognitive evaluation of specific attribute toward an object.
3. Importance weight (W<sub>i</sub>): This refers to the relative importance of an attribute to the consumer.

Therefore, a consumer's overall attitude (A<sub>0</sub>) toward an object can be computed by combining these elements using the following formula:

$$A_0 = \sum W_i E_i$$

MAA helped to overcome the shortcomings of identifying a customer's attitude by simply asking them to express their overall feelings on a certain product. The MAA's approach allowed market researcher to investigate more thoroughly why consumers feel a certain way about a product and how consumers change their feelings about a product (Wilkie, 1986).

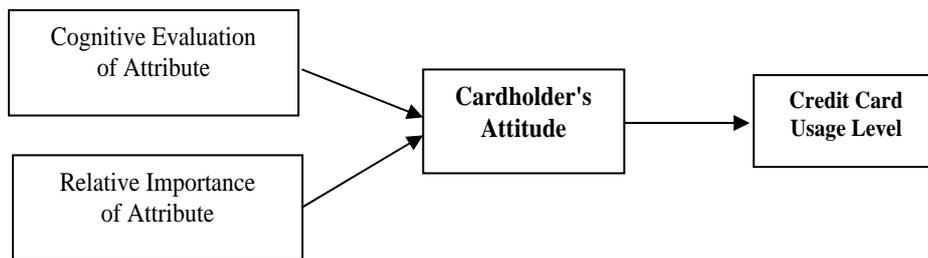


Figure 1. Theoretical framework: A simplified version of multi-attribute Attitude Model

Source: Wilkie, W. L. and Pessemier, E. A. (1973). Issues in marketing's use of multi-attribute models. *Journal of Marketing Research*, November, pp. 428–41.

The MAA model assumed that a credit cardholder's attitude can be obtained by multiplying the cardholder's perceived importance of the attribute and cognitive evaluation of the attribute. Since the cardholder's attitude toward his/her credit card was the most important variable that distinguished one to be either an active or inactive cardholder, credit card usage level can be determined through credit cardholder's attitude (Chan, 1997; Hamstra, 2000; Awh and Waters, 1974). Based on the theoretical framework, cardholders' attitudes will be the independent variable whereas credit card usage level will be the

dependent variable. In short, attitude towards credit card could be computed by the following formula:

$$\text{Attitude} = \text{Cognitive evaluation of attribute} \times \text{Perceived importance of attribute}$$

However, the MAA model had its own shortcomings. The model assumed that it is possible to specify all of the important attributes for analysis. However, there is no guarantee that all of the important attributes can be covered in a real situation. The reliability of this model depends on the amount of care taken in the process of adopting the attributes. The model also assumed that respondents are able to weigh and identify the attributes rationally. However, a rational decision-making process can only happen in a more involved purchasing situation. Thus, the MAA model is suitable particularly for the purpose of studying credit card usage level (Chan, 1997).

### **Attitude and Behavior**

Most of the models on consumer decision processes highlighted the significance of attitudes as intervening variables in predicting behavior (Haward and Sheth, 1969). Expectancy-value models developed by Rosenberg (1956) and Fishbein (1963) have also received much attention by behavioral researchers. In the past, several researchers have conducted behavioral studies on credit card usage. For instance, Chan's research in 1997 proved that positive attitude cardholders resulted in higher usage level. Awh and Waters (1974) have also carried out a survey on attitudes and credit card usage level. Findings by Awh and Waters (1974) showed the existence of a positive relationship between attitude and usage level.

### **Hypotheses**

The following hypotheses have been proposed for this research:

- H1: Wide acceptance, high credit limit, long interest free period, bank image, ancillary functions, effective handling of complaints, heavy advertising, ease of bill payment, card design, attractive gift/bonus, low annual fee, well prepared leaflet and short approval period will have a positive influence on credit card usage.
- H2: There are significant differences in perceived importance ( $W_i$ ) between active and inactive cardholders in terms of wide acceptance, high credit limit, long interest free period, ancillary function, effective handling of complaints, bank image, bank advertising, ease of bill payment, card design, attractive gift/bonus, low annual fee, well prepared leaflet, or short approval period.

- H3: There are significant differences in cognitive evaluation ( $E_i$ ) between active and inactive cardholders in terms of wide acceptance, high credit limit, long interest free period, ancillary function, effective handling of complaints, bank image, bank advertising, ease of bill payment, card design, attractive gift/bonus, low annual fee, well prepared leaflet, or short approval period.
- H4: There will be significant differences between demographic variables and credit card usage level.

### **Data Collection Method**

Since it is against the Banking And Financial Institution Act (BAFIA) to obtain a list of cardholders' contact numbers and addresses from financial institutions, telephone interviews cannot be implemented. In order to ensure a better response rate and cooperation from potential respondents, mail survey was avoided.

Due to the above constraint, probability sampling was ruled out. The non-probability sampling method of purposive sampling was used. The two conditions employed in selection was: (i) the respondent must be a credit card holder; (ii) the respondent must be the principal card holder (supplementary card holders were omitted); and (iii) the respondent would only use one card for most of his/her purchases (80%) if they had multiple cards. Data for this study was gathered using questionnaires. The questionnaires were distributed and collected with the voluntary assistance provided by different bank credit card sales officers who were able to liaise and interact with their credit card holders of different income groups, occupations, and age categories on a daily basis. Most of the questionnaires were distributed and collected in the banking hall within the cardholder's company.

The content of the questionnaires consisted of all the important attributes that measure the cardholder's attitude. The questionnaires were adopted from similar studies conducted by Duffy (1990), Meidan (1996), and Chan (1997). The questionnaires consisted of 13 important attributes relating to bank credit cards. The 13 salient attributes were: wide acceptance, large credit limit, ease of bill payment, long interest-free repayment period, low annual fee, short application approval period, ancillary functions, effective handling of cardholders' complaints, image of the issuing bank, gifts/bonus to cardholders, design of the card, detailed leaflet to describe the card, and heavy advertising by the issuing bank.

Perceived importance of each attribute ( $W_i$ ) was measured using a 7-point Likert scale ranging from 1 = very unimportant to 7 = very important. Similarly, cognitive evaluation of each attribute ( $E_i$ ) by respondents was measured by using a 7-point Likert scale ranging from 1 = strongly dissatisfied to 7 = strongly satisfied.

## RESEARCH FINDINGS

A total of 300 questionnaires were distributed to the public. Only 202 questionnaires were returned. Out of the 202 returned, only 150 were found to be usable representing a response rate of only 50%.

### Sample Characteristics

There were equal number of males and females with about 75.3% of them being Chinese. A majority of the respondents were above 30 years old. Additionally a majority of them were married whilst 51.3% of them were degree holders (refer to Table 1 for sample profile).

TABLE 1  
SAMPLE CHARACTERISTICS

Demographic	Categories	Frequency	Percentage
Gender	Male	78	52.0
	Female	72	48.0
Ethnic	Malay	20	13.3
	Chinese	113	75.3
	Indian	16	10.7
	Others	1	0.7
Age	30 years old or below	51	34.0
	More than 30 years old	99	66.0
Marital Status	Single	57	38.0
	Married	93	62.0
	Others	0	0.0
Education Level	Diploma & below	65	43.3
	Degree	77	51.3
	Master	8	5.3
Occupation	White Collar Worker	38	25.3
	Businessman	45	30.0
	Professional	36	24.0
	Blue-Collar Worker	31	20.7
Gross Monthly Income	RM4000 or below	88	58.7
	More than RM4000	62	41.3

Category of Credit Card Owned	Platinum	11	7.3
	Gold	59	39.3

TABLE 1. (Continued)

Demographic	Categories	Frequency	Percentage
Type of Credit Card Used	Classic	80	53.3
	American Express	7	4.7
	Master Card	94	62.7
	Visa	49	32.7
	Diners Club	0	0
Number of Credit Card Used	Others	0	0
	3 or below	123	82.0
Monthly credit card Usage	More than 3	27	18.0
	< 10 times	76	50.7
	10 times or above	74	49.3

**Determining Credit Cardholders' Attitudes that Discriminate between Active and Inactive Card Users**

Discriminant analysis was conducted to test the relationship between credit cardholders' attitudes with their usage level. The usage level was categorized into active cardholder and inactive cardholder. The sample was divided randomly into two groups based on a 65–35 ratio with the first group as the analysis sample and the second group as the holdout sample. The analysis sample was used for estimation whereas the holdout sample was used for validation.

As shown in Tables 2, 3 and 4, the predictive accuracy of the model for the analysis sample and holdout sample of each attitude was 100% and 88.5% respectively. From the results, it can be concluded that by using the model of cardholders' attitudes, one could classify the respondents according to their usage level, i.e. active cardholder or inactive cardholder.

TABLE 2  
HIT RATIO FOR CASES SELECTED IN THE ANALYSIS

Actual Group	Category	No. of Cases	Predictive Group	Membership
Inactive cardholder	1	55	55	0
			100.00	0.00
Active cardholder	2	43	0	43
			0.00	100.00

Percentage of "grouped" cases correctly classified: 100%

TABLE 3  
HIT RATIO FOR CROSS VALIDATION\* (LEAVE ONE OUT CLASSIFICATION)

Actual Group	Category	No. of Cases	Predictive Group	Membership
Inactive cardholder	1	55	55 100.00	0 0.00
Active cardholder	2	43	3 0.00	40 100.00

Percentage of "grouped" cases correctly classified: 96.9%

\* In cross validation, each case is classified by the functions derived from all cases other than that case.

TABLE 4  
HIT RATIO FOR CASES IN THE HOLDOUT SAMPLE

Actual Group	Category	No. of Cases	Predictive Group	Membership
Inactive cardholder	1	21	18 85.7	3 14.3
Active cardholder	2	31	3 9.7	28 90.3

Percentage of "grouped" cases correctly classified: 88.5%

To examine whether the model was good and accurate, three tests were conducted as shown in Table 5 where the hit ratio exceeded both the maximum likelihood and proportional chance value. The Press's Q statistic was significant at 0.01. Therefore it can be concluded that the model investigated was good and accurate. With a canonical correlation of 0.92, and by squaring this value, it can be concluded that 85% of the variance in the dependent variable can be accounted for by this model. The overall hit ratio also exceeded the proportional chance criterion (51.85%) by the requisite 25% cutoff (exceeded 64.81%), giving support to the confidence in the predictive validity of the discriminant function and confirming the inferences made based on the univariate results. (Hair et al., 1979). Another additional test is the cross validation test (leave one out classification) which is presented in Table 4 where the hit ratio was 96.9%. This result further confirmed that the discriminant model is a good and valid model.

Table 6 presents the summary of interpretive measures for the discriminant analysis. From the discriminant function loading, it can be concluded that long interest free period, high credit limit, wide acceptance, ancillary functions, bank image, effective handling of complaints, and bank advertising were ranked as relatively important in determining credit card usage level. Therefore, H1 is substantiated.

TABLE 5  
COMPARISON OF GOODNESS OF MEASURE

Measure	Value	Hit Ratio for Holdout Sample
Maximum Chance	59.62 %	88.5 %
Proportional Chance	51.85 %	88.5 %
Comparison with Hair et al. (1998). 25% higher than proportional chance	64.81%	88.5 %
Press Q Table Value Calculated Value		6.635 30.77**

\*\* significant at  $p = 0.01$

TABLE 6  
SUMMARY OF INTERPRETIVE MEASURES FOR DISCRIMINANT ANALYSIS

Independent Variable	Discriminant Loading Function 1 (rank)	Univariate F Ratio	Significant
<i>Long interest free period</i>	0.473	136.257	0.000**
<i>High Credit Limit</i>	0.430	112.652	0.000**
<i>Wide Acceptance</i>	0.417	105.829	0.000**
<i>Ancillary Function</i>	0.311	58.813	0.000**
<i>Bank image</i>	0.303	55.952	0.000**
<i>Effective Handling of Complaints</i>	0.231	32.455	0.000**
<i>Bank Advertising</i>	0.172	17.910	0.000**
Attractive Gift/ Bonus	-0.033	0.646	0.423
Short Approval Period	-0.025	0.382	0.538
Card Design	-0.023	0.330	0.567
Well Prepared Leaflet	-0.019	0.220	0.640
Low Annual Fee	-0.009	0.055	0.816
Ease of Bill Payment	0.005	0.018	0.894

Note: \*\* Significant at  $p = 0.01$

### Differences in Perceived Importance of Attributes between Active and Inactive Credit Cardholders

Except for ancillary functions, both the active and inactive cardholders viewed all the attributes as important variables of their credit cards. As indicated in Table 7, both active and inactive cardholders had mean values ( $W_i$ ) higher than 4 (which was the middle point), for all attributes except for ancillary function scored by inactive cardholders.

The active cardholders rated effective handling of cardholder's complaint, bank image, low annual fee, large credit limit, wide acceptance, and long interest free repayment period as highly important with mean values ( $W_i$ ) higher than 6.

In order to identify the significant differences in perceived importance ( $W_i$ ) of attributes between the two groups, T-test was conducted with the significant findings indicated in italics in Table 7. Active cardholders placed significantly higher weightage on wide acceptance, large credit limit, long interest fee repayment period, ancillary functions, bank image, and heavy advertising.

TABLE 7  
CREDIT CARDHOLDERS' ATTITUDES: MULTI-ATTRIBUTE APPROACH

	Relative	$W_i$ Importance	Evaluation of	$E_i$ Attribute	$W_i \times$ Attitude of	$E_i$ Cardholder
Major attribute	Inactive	Active	Inactive	Active	Inactive	Active
Wide acceptance	<b>4.9342</b>	<b>6.1081</b>	<b>4.4342</b>	<b>6.0405</b>	<b>22.0526</b>	<b>37.0000</b>
Large credit limit	<b>4.7368</b>	<b>6.1216</b>	<b>4.1184</b>	<b>5.7568</b>	<b>19.7500</b>	<b>35.1081</b>
Ease of bill payment	5.5395	5.6351	5.1842	5.3649	29.2763	30.7568
Long interest free Repayment period	<b>5.6316</b>	<b>6.0811</b>	<b>3.0526</b>	<b>5.5135</b>	<b>17.1842</b>	<b>33.5541</b>
Low annual fee	6.2237	6.1351	3.3947	3.4054	21.0395	20.6622
Short application Approval period	5.5526	5.4189	4.4737	4.5541	25.0658	24.9595
Ancillary functions	<b>3.8421</b>	<b>5.2973</b>	<b>4.0395</b>	<b>5.2297</b>	<b>15.3947</b>	<b>27.7703</b>
Effective handling of complaint	6.2105	6.3378	<b>3.7105</b>	<b>5.0405</b>	<b>22.9474</b>	<b>32.1216</b>
Image of issuing bank	<b>5.7105</b>	<b>6.2027</b>	<b>4.2632</b>	<b>5.7297</b>	<b>24.3421</b>	<b>35.5676</b>
Gift/bonus to Cardholder	5.5921	5.6892	5.0132	4.8108	28.2895	27.5270
Design of the card	5.1053	5.2297	4.5921	4.7568	23.9079	25.8378
Detailed leaflet	5.2368	5.5135	4.7632	4.6622	25.6447	25.9189
Heavy advertising	<b>5.1184</b>	<b>5.9189</b>	<b>4.7368</b>	<b>5.3378</b>	<b>24.9474</b>	<b>31.6216</b>
Overall Attitude ( $A_0$ )					<b>299.84</b>	<b>328.65</b>

**Bold** denote a significant difference between inactive and active cardholders detected by the t-test at  $p = 0.01$ . Therefore, H2 can only be partially accepted which implied that there are significant differences in perceived importance in terms of wide acceptance, large credit limit, long interest free repayment period, ancillary functions, bank image, and heavy advertising. Undoubtedly, credit card issuers could not afford to ignore these attributes if they wish to expand their card businesses.

### **Differences in Cognitive Evaluation of Attributes between Active and Inactive Cardholders**

The active cardholders, in general were satisfied with all the attributes except for annual fee. On the other hand, inactive cardholders were dissatisfied with three attributes, namely, interest free period, annual fee, and effective handling of complaints with mean values ( $E_i$ ) lesser than 4 (which was the middle point).

To detect the significant difference in cognitive evaluation ( $E_i$ ) between the two groups, T-test was conducted. As marked in bold in Table 7, active cardholders rated relatively higher satisfaction on wide acceptance, large credit limit, long interest free repayment period, effective handling of cardholder's complaint, bank image, and heavy advertising as compared to inactive cardholders.

As a result, H3 can only be partially accepted which implied that there are significant differences in cognitive evaluation ( $E_i$ ) between active and inactive cardholders in terms of wide acceptance, high credit limit, long interest free period, ancillary function, effective handling of complaints, bank image, and bank advertising. In the case of other attributes, there was no significant difference.

### **The Relationship between Demographic Variables and Credit Card Usage Level**

To test the relationship between demographic variables and credit card usage level, the chi-square analysis was used.

The p-value of the test showed 0.005, which means there is a significant relationship between age and credit card usage level. Of the 74 active cardholders, 77.0% of them were at least more than 30 years old. Of the 76 inactive cardholders, only 44.7% of them were 30 years old and below. Thus, this indicates that the credit card usage level is active for cardholders who are 30 years old and above. In other words, credit card usage level was found to be dependent on age.

The chi-square result showed that the p-value equaled to 0.000, implying that there is a significant relationship between occupation and credit card usage level. Table 8 revealed that 39.5% of the inactive cardholders were employed as blue-collar workers, 30.2% worked as businessmen, 30.2% served as professionals, with the remaining 15.8%

employed as white-collar workers. Of the 74 active cardholders, 35.1% of the active holders were white-collar workers, 33.8% served as professionals, 29.7% worked as businessmen, with the remaining 1.4% employed as blue-collar workers. Obviously, such findings indicate that credit card usage is less active for blue-collar employees than for white-collar employees. Thus, credit card usage level was found to be dependent on occupation.

Result of p-value equaled to 0.000, which implied that the relationship between income and credit card usage level was very significant. The cross-tabulation result in Table 8 provided further support for the above-mentioned relationship where 98.7% of credit cardholders were inactive credit card users who earned a monthly income of not more than RM4000. On the other hand, 82.4% of the active cardholders earned a monthly income of more than RM4000. In general, credit card usage level was inactive for cardholder with income of not more than RM4000. Hence, credit card usage level was found to be dependent on income level.

TABLE 8  
THE RELATIONSHIP BETWEEN DEMOGRAPHIC VARIABLES AND CREDIT CARD USAGE

VARIABLE	USAGE LEVEL (Percentage)			
	Significance-P	Category	In-active	Active
Age	0.005	Age 30 or below	44.7	23.0
		More than 30	55.3	77.0
Occupation	0.000	White collar	15.8	35.1
		Businessman	30.2	29.7
		Professional	14.5	33.8
		Blue Collar	39.5	1.4
Income	0.000	Below RM4000	98.7	17.5
		Above RM4000	1.3	82.5
Number of Credit card	0.000	3 Cards or Below	86.5	43.2
		Above 3 cards	13.5	56.8
Category of credit card	0.000	Platinum	3.9	10.8
		Gold	15.8	63.5
		Classic	80.3	25.7

The output derived from the Chi-square test showed a p-value of 0.000 which indicates that there is a significant relationship between category of credit card used and the level of credit card usage. From Table 8, it can be seen that among the active cardholders, 63.5%

were gold cardholders, 25.7% were classic cardholders and, 10.8% were platinum cardholders. On the other hand, among the inactive cardholders, 80.3% were classic cardholders, 15.8% were gold cardholders, and only 3.9% were platinum cardholders. As a result, 80.3% of the inactive cardholders were classic holders as compared to 63.5% of active cardholders were gold cardholders. Therefore, this implies that credit card usage level is less active for classic than for platinum or gold cardholder. Credit card usage level is found to be dependent on category of credit card held.

The result from the Chi-square analysis showed a p-value equaled 0.000. In other words, there is a significant relationship between the number of credit card owned and credit card usage level. From Table 8, it can be seen that 86.5% of the inactive cardholders held 3 cards or fewer, whereas only 13.5% of inactive cardholders held more than 3 cards. On the other hand, 56.8% of active cardholders held more than 3 cards, whereas 43.2% of active cardholders had 3 cards or fewer. Generally speaking, credit card usage level was lower for cardholders who owned 3 cards or fewer compared to those who owned more than 3 cards. People tend to be active cardholders when they owned more cards. This may probably be due to a variety of ancillary functions offered and, a higher aggregate credit limit granted. Thus, credit card usage level was found to be dependent on the number of credit cards held. Thus, H4 is supported.

## **DISCUSSION AND CONCLUSION**

The current study hopes to validate the major factors driving active credit card usage. In addition, this research aims to identify the relationship between demographic variables and credit card usage level.

### **Influence of Credit Cardholders' Attitudes on Credit Card Usage Level**

The major variables that contributed to the credit card usage level consisted of long interest free period, high credit limit, wide acceptance, ancillary functions, bank image, effective handling of complaints, and heavy advertising of the card. The active cardholder emphasized more on the long interest free period as compared to the inactive cardholder. This implies that monetary inducement played an active role in distinguishing active and inactive cardholder. On the other hand, wide acceptance, high credit limit, and ancillary functions were other criterias that determined usage level. "Transaction convenience" due to wide acceptance and "financial convenience" due to high credit limit and ancillary functions were other important factors that help determine whether a person is an active or inactive credit card user.

This finding parallels that of Chan's (1997) where the active cardholder showed significantly higher scores in attitude towards "wide acceptance" and "large credit limit". Transaction convenience allows cardholders to utilize the functions of credit card by

replacing cash and carry forward their expenditure. Cardholders might feel safer and enjoy more convenience than with other types of payment mode. On the other hand, financial convenience allows cardholders to enjoy discounts on certain promotional item tied up with the various retailers. This indirectly reflected in more value for money as compared to cash transaction. Moreover, it also allows cardholders to enjoy the short-term revolving credit by delaying payment of expenses.

The study also indicates that bank image, effective handling of cardholder's complaints, and heavy advertising are some of the important variables that affect cardholder's usage level. This shows that apart from heavy emphasis on monetary inducement (long interest free period and discount from ancillary function), cardholders are also concerned about the image of the bank and the effectiveness of the issuing bank in handling their complaints. Holding a credit card issued by a bank that enjoys a good image might be seen as a symbol of higher social class and financial soundness as compared to holding one that is issued by a bank with poor image. The customer always believes that good image bank would only offer their credit cards to financially-sound customers, therefore, it might not be possible for a financially-difficult customer to hold the particular card.

Cardholders are more likely to use a bank's credit card provided that the bank is effective in handling their complaints. The main reason contributing to this issue might be because of the increase in the number of credit card fraud cases in Malaysia. According to the National Criminal Intelligence Service (NCIS), Malaysia was used as a credit card forgery base for worldwide credit card frauds (*The Star*, 1999). Therefore, rational credit cardholders would only be active users if they were confident with the card issuing banks, and the service received when fraudulent cases arise.

To further impress the cardholder on issuing bank image, heavy advertisement becomes an important factor to increase credit cardholder's confidence to be an active user. This contradicts with the findings by Chan (1997) where active cardholders in Hong Kong did not view advertisements, the bank image and effective handling of complaint as important factors in determining card usage level. Malaysian credit cardholders who are active users, in general, were very much impressed by the heavy advertising, image of the bank and the service provided by the issuing bank.

### **Managerial Implications**

Credit card issuing banks should strategize to work closer with various retailers in merchandising the credit card payment machine. This will help to induce more inactive cardholders to increase their usage rate since wide acceptance is viewed as relatively important by the active cardholder. To promote credit card merchandising by retailers, the issuing bank may need to reduce the interest charged on the retailer as a step to encourage them to popularize the credit card payment mode.

Issuing banks should be able to provide adequate credit limit to cardholders as a way to activate their usage rate. Since the issuing bank faces dilemma in providing high credit limit to cardholder due to the increase of delinquency cases among credit cardholders in Malaysia, a more sophisticated computer software is required to track cardholders' payment characteristics and their financial capability. Co-operation among the issuing banks is very critical in sharing useful information on cardholders as a guideline to determine credit limit offered. For instance, information on cardholder's payment record is very important in determining the credit limit offered. Therefore, the Central Bank may need to look into possibilities of amending the BAFIA Act in order to allow sharing of useful information among credit card issuing companies.

The current practice of interest free repayment period for most of the credit card issuing banks in Malaysia is about 20 days from the statement date. Credit cardholders will be charged a monthly interest of 1.5% for outstanding balance after the due date. In view of the relative sensitivity of credit cardholder to interest charged, the issuing bank may consider to extend the interest free period to 30 days. Moreover the interest incurred is relatively high for credit card as compared to other credit facilities. Currently, although the Central Bank is implementing a low interest policy, credit cardholder may still avoid interest charged by reducing credit card usage.

Ancillary function or co-branding is viewed as another important criterion to use credit card actively. Therefore, more creative strategic alliances with entertainment, traveling, insurance and leisure retailers should be adopted to attract more active cardholders. For instance, Standard Chartered Bank (M) Bhd. is one of the many banks that believe in the concept of co-branding in order to expand their credit card business in Malaysia. In early 1999, Standard Chartered launched TM Visa card with Visa International and Telekom Malaysia. The TM Visa allows cardholder to enjoy 3% cash rebate on local telephone bills and discount up to 23% on Telekom's products. It aims to target "white-collar worker" who are constantly on the move and helps to induce cardholders to use Standard Chartered Bank's credit card actively. Besides, 'touch 'n' go' credit card issued by Hong Leong Bank has surged its credit card sales due to its convenience, after the co-branding with Rangkaian Segar Bhd.

According to Daljit (1999), financial institutions have forged strategic alliances with other retailers that deal in products and services other than the one offered by credit card issuers. It is estimated that there are some 60 co-brand card programmes in the market and the demand is expected to rise further. Co-branding has proven to be very successful overseas whereby more than 70% of credit cards in mature markets are co-branded. In Malaysia, there still is room for improvement where only 25% of the market is co-branded.

To handle complaints made by cardholders effectively, the card-issuing bank should have a special center to attend to the credit cardholder's complaints. Deadlines should be allocated in solving each of the complaints in order to ensure effectiveness of the bank. A

team of well-trained staffs to handle cardholders' complaints is needed to project a professional image to cardholders. Emphasis on effectiveness in solving cardholder's complaints cannot be ignored in view of its importance in retaining existing cardholders as well as building up confidence of potential cardholders.

To further enhance the bank's image, heavy advertisement is another effective way. Therefore, investment in advertising should be emphasized in order to create a brand name for the issuing bank. Advertisement through a variety of mass media such as television, radio, magazines and newspapers will definitely help to target high income professional and white collar worker as a way to induce them to be an active card holder. For instance, many of the card issuing banks such as Citibank, Hong Kong Bank and Hong Leong Bank choose to advertise in television after the business news program in order to impress the target market of white-collar worker and professional. However, the balance between the costs and the effectiveness of advertisement must always be taken into consideration. Card issuers should target white-collar worker, aged above 30 years old, with monthly income of at least RM4000. Strategies to penetrate this market segment must be adopted and implemented in order to achieve impressive result. A dedicated unit to identify the needs of this niche market is very crucial when positioning the marketing mix.

Credit card issuers should continue to promote the advantages of using credit card through campaign, advertisement, seminar and publications to non-active users. Awareness on wide acceptance, interest free period, convenience and credit facility provided by credit card are very crucial to encourage those non-active users to be active credit card users. A sales force team and marketing unit must be set up in order to be aggressive in penetrating the relevant target markets. In view of the increasing number of fraudulent cases faced by card issuing banks, it is very important to have a sales force team that will be able to identify, attract, and retain only genuine and active cardholders. The Government should provide some tax relief for retailers who accept payment via credit cards. By imposing tax relief policy to the retailers, acceptance on credit card payment will definitely become popular among the retailers. This will indirectly help to activate the usage rate of credit cards. In sum, this increase in credit card usage will enhance the profit made by the credit card issuing banks, which ultimately benefit the government through corporate taxation.

The few limitations of this study are stated below:

- Some of the cardholders may have more than one credit card with equal usage rate of less than 10 times per card per month. Thus, by imposing the condition of focusing only on the most active card to answer the questions, it may cause bias to inactive cardholders.
- To set 10 times usage rate on credit card per month as an active cardholder may not be accurate since some of the card issuing banks may perceive more usage rate to qualify for active cardholder and some banks may perceive less. Thus, Chan's (1997) standard

of categorizing active cardholder as those with 10 times usage rate may be considered very subjective.

- Although care has been taken in sample selection, the respondents in the present study may not be representative of the actual population.

## **REFERENCES**

- Avery, R. B. et al. (1986). The Use of Cash and Transaction Accounts by American Families. *Journal of Retail Banking*, 7(3): 63–74.
- Awh, R. Y. and Waters, D. (1974). A Discriminant Analysis of Economic, Demographic and Attitudinal Characteristics of Bank Charge-Card Holders: A Case Study. *Journal of Finance*, 19: 973–89.
- Bank Negara Malaysia (2001). Credit Card Operation in Malaysia, [online]. Available at: <http://www.aspire.com.my/creditcard/facts.htm>
- Becker, G. S. (1965). A Theory of the Allocation of Time. *The Economic Journal*, 75: 493–517.
- Bowers, J. S. and Crosby, K. R. (1979). Credit Card Use by Low-Income Consumers. *The Journal of Consumer Credit*, 10: 80–87.
- Canner, G. B. and Cynrak, A. W. (1986). Determinants of Consumer Credit Card Usage Patterns. *Journal of Retail Banking*, 8 (1 & 2): 9–18.
- Chan, Y. K. (1997). Demographic and Attitudinal Differences Between Active and Inactive Credit Cardholders—The Case of Hong Kong. *International Journal of Bank Marketing*, 15 (4): 117–125.
- Chebat, J. C., Laroche, M. and Malette, H. (1988). A Cross-Cultural Comparison of Attitudes Towards and Usage of Credit Cards. *International Journal of Bank Marketing*, 6 (4): 42–54.
- Choi, H. N. and DeVaney, S. (1995). Factors Associated with the Use of Bank and Retail Credit Cards. In: S. B. Mackenzie and D. M. Stayman (Eds.). *Proceedings of the Society for Consumer Psychology* (pp. 152–159). LaJolla, CA: American Psychological Association.
- Cook, J. and Mindak, A. (1984). A Search for Constants: The Heavy User Revisited. *Journal of Consumer Marketing*, 1 (4): 79–81.

- Daljit, D. (1999, October 4). VISA Expects Overall Growth of between 5% and 10%. *The Star*.
- Duffy, H. (April 1990). Marketing for Survival: Credit Card Strategies for the '90s. *Bank Management*, pp. 44–47.
- Davies, E. and Lea, S. E. G. (1995). Student Attitudes to Student Debt. *Journal of Economic Psychology*, 16: 663–679.
- Engel, J. F., Blackwell, R. D. and Miniard, P. W. (1995). *Consumer Behavior*. New York: The Dryden Press.
- Etzel, M. J. and Jones, W. H. (1978). A Method for Developing Promotional Themes Based on Attitudes and Usage Patterns of Bank Credit Card Holders. *Journal of Bank Research*, pp. 224–32.
- Fishbein, M. (1963). An Investigation of the Relationship between Beliefs about an Object and the Attitude Toward that Object. *Human Relations*, 16: 233–240.
- Fishbein, M. and Ajzen, I. (1975). *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. U.S.A.: Addison-Wesley Publishing Company.
- Garcia, G. (1980). Credit Cards: An Interdisciplinary Survey. *Journal of Consumer Research*, 6: 327–337.
- Hair, J. F. Jr., Anderson, R. E., Tatham, R. L. and Black, W. C. (1998). *Multivariate Data Analysis*. U.S.A.: Prentice Hall.
- Hair, J. F. Jr., Anderson, R. E., Tatham, R. L. and Grablovsky, B. J. (1979). *Multivariate Data Analysis*. Tulsa, Oklahoma: Petroleum Publishing Company.
- Hamilton, R. and Mosahid Khan. (2001). Revolving Credit Card Holders: Who are They and How Can They Be Identified?. *The Services Industries Journal*, 21 (3): 37–48.
- Hamstra, M. (2000). Credit Card Seekers Want Rewards. *Business Editors*, 2: 6.
- Hasbalaila Alias (2001). *Consumption Behaviour: A Study on Consumer's Attitude on Spending Using Credit Card and Its Affect on Credit Card Debt*. Unpublished MBA Dissertation, Universiti Sains Malaysia, Penang.
- Haward, J. A. and Sheth, J. N. (1969). *The Theory of Buyer Behavior*. New York: John Wiley & Sons.

- Hawes, D. K. (1988). Bankcard-Holder Profiles: Changes Over an Eleven-Year Period. *Akron Business and Economic Review*, 19 (2): 106–24.
- Hayhoe, C. R., Leach, L. J., Turner, P. R., Bruin, M. J., and Lawrence, F. C. (2000). Differences in Spending Habits and Credit Use of College Students. *The Journal of Consumer Affairs*, 34 (1): 113–133.
- Hirschman, E. C. (1978). Bank Credit Card Usage in Department Stores. *Journal of Retailing*, 54: 12–13.
- \_\_\_\_\_. (1979). Differences in Consumer Purchase Behavior by Credit Card Payment System. *Journal of Consumer Research*, June: 58–66.
- Ingene, C. and Levy, M. (1982). Cash Discounts to Retail Consumers: An Alternative to Credit Card Sales. *Journal of Marketing*, 46 (2): 92–103.
- Jinkook Lee and Hogarth, J. M. (2000). Relationship among Information Search Activities when Shopping for a Credit Card. *The Journal of Consumer Affairs*, 34 (2): 330–360.
- Kaynak, E., Kucukemiroglu, O. and Ozmen, A. (1995). Correlates of Credit Card Acceptance and Usage in an Advanced Developing Middle Eastern Country. *Journal of Services Marketing*, 9(4): 54–63.
- Kaynak, E. and Ugur, K. (1984). A Cross-Cultural Study of Credit Card Usage Behaviors: Canadian and American Credit Card Users Contrasted, *International Journal of Bank Marketing*, 2 (2): 45–57.
- Kidwell, B. and Turrisi, R. (2000). A Cognitive Analysis of Credit Card Acquisition and College Student Financial Development. *Journal of College Student Development*, 41 (6): 589–598.
- Kinsey, J. (1981). Determinants of Credit Card Account: An Application of Tobit Analysis. *Journal of Consumer Research*, September: 172–182.
- Lee, K. Y. and Toh, J. (1995, November 11). 20-Day Grace. *The Star*.
- Lee, S. P. (2000, August 26). Credit Card Considerations. *The Star*.
- Mandell, L. (1971). Consumer Perception of Incurred Interest Rate: An Empirical Test of the Efficacy of the Truth in Lending Law. *Journal of Finance*, 26: 1143–1153.
- Martell, T. F. and Fitts, R. L. (1981). A Quadratic Discriminant Analysis of Bank Credit Card User Characteristics. *Journal of Economics and Business*, 33 (2): 153–159.

- Medina, J. F. and Chak-Tong Chau (1998). Credit Card Usage Behavior between Anglos and Hispanics. *Hispanic Journal of Behavioral Sciences*, 20(4): 429–447.
- Meidan, A. (1996). *Marketing Financial Services*. London: Macmillan.
- Meidan, A. and Davos, D. (1994). Credit and Charge Cards Selection Criteria in Greece. *International Journal of Bank Marketing*, 12 (2): 36–44.
- Mowen J. C. (1987). *Consumer Behavior*. London: Collier MacMillan Publishers.
- Munro, J. and Hirt, J. B. (1998). Credit Cards and College Students: Who Pays, Who Benefits?. *Journal of College Student Development*, 39 (1): 51–57.
- Nunnally, J. C. (1967). *Psychometric Theory*. New York: McGraw-Hill.
- Pinto, M. B., Parente, D. H. and Palmer, T. S. (2001). College Student Performance and Credit Card Usage. *Journal of College Student Development*, 42(1): 49–58.
- Rosenberg, M. J. (1956). Cognitive Structure & Attitudinal Effect. *Journal of Abnormal and Social Psychology*, 53: 367–372.
- Sheth, J. N., Newman, B. J. and Gross, B. L. (1991). Why We Buy What We Buy: A Theory of Consumption Values. *Journal of Business Research*, 22: 159–170.
- Sekaran, U. (2000). *Research Methods For Business*. New York: John Wiley & Sons.
- Solomon, M. R. (1999). *Consumer Behavior: Buying, Having, and Being America*. U.S.A.: Prentice Hall.
- Syed Sharaf (1998). *Factors Influencing the Level of Credit Card Usage*. Unpublished MBA thesis, Universiti Sains Malaysia, Penang.
- The Star* (1999, October 4). Consumer Optimism has Surged Significantly.
- Thurstone, L. L. (1931). The Measurement of Attitudes. *Journal of Abnormal and Social Psychology*, 26: 249–269.
- Wilkie, W. L. (1986). *Consumer Behavior*. New York: Wiley.
- Wilkie, W. L. and Pessemier, E. A. (1973). Issues in Marketing's Use of Multi-Attribute Models. *Journal of Marketing Research*, November: 428–41.

- Worthington, S. (1990). Retailer Credit Cards: A Competitive Threat. *International Journal of Bank Marketing*, 8 (4).
- Xiao, J. J., Franziska, E. and Anderson, J. G. (1995). College Students' Attitude towards Credit Cards. *Journal of Consumer Studies and Home Economics*, 19: 155–174.
- Yi-Wen Chien and Devaney, S. A. (2001). The Effects of Credit Attitude and Socioeconomic Factors on Credit Card and Installment Debt. *The Journal of Consumer Affairs*, 35 (1): 162–179.

**Appendix 1: Credit Card Operation in Malaysia**

Year	In Circulation ('000)	Purchases (RM 'million)
1992	821.2	2033
1993	1008	2260
1994	1254	2847
1995	1408	3512.5
1996	1638.8	5142.7
1997	1698.3	6735
1998	1617.9	6807
1999	1861.7	8803.4
2000	2298.8	12593.3

Source: Bank Negara Malaysia (2001)