AN ABSTRACT OF THE THESIS OF

<u>Tapin Punjavat</u> for the degree of <u>Doctor of Philosophy in</u>
<u>Family Resource Management</u> presented on <u>December 8, 1992</u>.
Title: <u>Credit Cards: Understanding International Graduate</u>
<u>Student Consumers</u>

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This study examined graduate international students'
knowledge, attitudes, experiences, practices, and
satisfaction relating to credit cards. Based on the
literature, international students attending U.S. colleges
and universities were considered an important population to
study because of: (1) internationalization of credit cards
and (2) the lack of credit card research on this group.

The sample was selected from graduate international
students attending Colorado State University. A
questionnaire was mailed to 623 students during Summer,
1992. Completed questionnaires were returned by 261
students (46.2 percent response rate). Data were analyzed
using descriptive statistics, cross-tabulations, correlation
analyses, and canonical correlation analyses.

Findings showed that respondents' credit card knowledge
was low, attitudes were favorable, and pre-U.S. experiences

limited. Since living in the U.S., respondents had become regular users with a mean of 3.3 cards and a majority charging more than $200 per month. They followed commonly recommended practices, and eight of ten were satisfied with their credit card use. Several statistically significant relationships were found among the credit card variables, and between these variables and socio-demographic characteristics such as country of origin and length of U.S. residency. A conceptual model was also tested, showing that experiences influenced practices, which in turn influenced satisfaction.

Implications and research recommendations were developed for international students, credit card issuers, providers of credit card education, and researchers. Based on credit card needs of international students, card qualifications and education programs should be developed and evaluated.

Credit Cards: Understanding International
Graduate Student Consumers

by

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DEDICATION

I dedicate my dissertation work to my parents and my brother. For my only brother Tew Punjavat, his sacrifices in taking my workload at home made my stay in the U.S. possible. My deepest appreciation is bestowed on my parents, to whom I dedicate all honors and privileges that this degree provides. From them I have always received and to them this is given. My parents' strong will, encouragement, determination, positive mental attitudes, and love have given me the foundation to succeed in life.

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CHAPTER 1

INTRODUCTION

Credit cards have been popular with consumers for many years, supporting the idea of "buy now and pay later." In the United States alone, approximately one billion credit cards are currently in circulation, with the average cardholder having 9.1 cards (Coloradoan, 1992; Statistical Abstract of the United States, 1991, 1991). Throughout the world, credit cards are used in transactions among consumers, retailers, and financial institutions.

The growth of credit card use during the past decade has been phenomenal, as evidenced by an increase in U.S. credit card debt from $85 billion in 1980 to $225 billion in 1991 (Becker, 1987; Coloradoan, 1992). This growth reflects consumers' attraction to perceived advantages of using credit cards. Major advantages of credit card use are eliminating security problems inherent in carrying cash, convenience of using a credit card as opposed to a personal check, ease of borrowing money, serving as a record of purchases, and meeting emergency needs (Hall and Wheat, 1992). According to Magrabi et al. (1991), credit cards may also be used to enhance current consumption by making goods

and services available now rather than later (when adequate funds are saved).

Credit cards may be classified into four categories depending upon the issuer's purpose (Mandell, 1972; McKenna, 1981; <u>Statistical Abstract of the United States, 1991</u>, 1991).

√ (1) Bank cards--issued by a bank under the name of the financial institution with a defined limit on a line of credit. In 1990, there were 6,000 lending institutions which issued bank credit cards (such as VISA and Mastercard). These cards accounted for 50.6 percent of credit card spending in 1989.

√ (2) Travel and entertainment cards--typically used for travel and leisure expenses with no preset limit on the line of credit (such as American Express and Diner's Club). These cards accounted for 19.4 percent of credit card spending in 1989.

√ (3) Telephone cards--issued for the purpose of charging long-distance telephone calls (such as AT&T and U.S. Sprint). These cards accounted for two percent of credit card spending in 1989.

√ (4) Gasoline and department store credit cards--offer a relatively low line of credit for the purchase of gas station products and store merchandise. These credit cards (such as Amoco Oil Company and J.C. Penney) are primarily designed as marketing tools to increase sales.

These cards accounted for 22.6 percent of credit card
spending in 1989.

√ A variety of other credit cards (such as airline and
car rental) accounted for the remaining 5.4 percent of
credit card spending in 1989.

√ Issuers of credit cards actively compete both within
and among these categories of credit cards. As competition
has increased, credit card companies now commonly offer a
variety of services (e.g., price protection plans that allow
card users to delete an expenditure from their bill if the
merchandise charged breaks or is stolen) to their customers
(Buckstein, 1991a). Many credit cards are currently
marketed internationally as a means to increase numbers of
cardholders (Mandell, 1990).

√ In recent years, college students have been viewed as
an attractive market. College students have become a target
market for credit card issuers for two reasons: (1) their
future income potential and (2) their estimated $1.3 billion
of discretionary income (Ellis, 1991). Additionally,
college students appear to handle credit cards well and
often have some background in money management (Ellis,
1991). Lieblich (1989) refers to the growing competition
for college students as "credit wars on campus."

In 1989, there were over 13.4 million students
attending U.S. colleges and universities (Digest of
Education Statistics, 1991). In 1990, approximately 3.9

million college students (29 percent of students enrolled) had at least one credit card (Ellis, 1991). For college students, credit cards may be used for purposes of convenience and establishing credit histories (Consumers' Research, 1980). Although general information regarding credit card use by college students exists, little is known about international students and credit cards.

Problem Statement

In 1990-91, there were 407,500 international students attending U.S. colleges and universities (Dodge, 1991), with the number of international students showing an increase every year since 1980 (Digest of Education Statistics, 1991). International students attending U.S. colleges and universities come from all regions of the world: South and East Asia--53.8 percent, Latin America--12.4 percent, Europe--11.0 percent, Africa--6.4 percent, and all other countries--16.4 percent (Dodge, 1991).

The majority of international students attending U.S. colleges and universities have secured sources of income (e.g., scholarships, assistantships, exchange programs, and family support). Proof of financial support is usually required by a college or university before a student is accepted for enrollment. As currently enrolled students, international students are often assumed to be similar to

American students. Thus, international students should qualify for U.S. credit cards provided they are legally in the United States and maintain residency for a considerable length of time. √It is also assumed that many international students from both developing and developed nations possess at least one credit card. Unfortunately, little is actually known about the use of credit cards by international students. Given the potential buying power and influence of international students after they graduate and return to their home countries, these students may greatly influence the internationalization of U.S. based credit cards. Consequently, it is important to understand the use of credit cards by international students in the United States.

At Colorado State University, there were 939 international students enrolled during Spring Semester, 1992. √As shown in Figure 1, the estimated expenses of each international student (graduate and undergraduate) at Colorado State University was approximately $17,600 for the 1991-92 academic year (Colorado State University, 1992). Currently, there does not exist an estimate of expenses for international students attending all U.S. colleges and universities. If one made the assumption that the expenses of an international student attending Colorado State University approximated a national average for international students, then international students contribute approximately $7.2 billion annually to the U.S. economy.

Figure 1.   Estimated Expenses for Undergraduate and Graduate
            International Students at Colorado State
            University, 1991-1992 Academic Year.

Required University Costs for One Full Year

	Undergraduate	Graduate
Non-Resident Tuition * (Fall and Spring) (Full-time graduate tuition, per semester:$3,420) (Full-time undergraduate tuition, per semester: $3,279)	$6,558.00	$6,840.00
Required Student Fees (Fall and Spring) (Per semester: $254.00)	508.00	508.00
Health/Accident Insurance Coverage	582.00	582.00
Books and Supplies (Per semester: $400)	800.00	800.00
Housing, Food, Misc. Personal (12 months at $700/month)	8,400.00	8,400.00
Initial Expenses on Arrival	700.00	700.00
Total Required University Fees	$17,548.00	$17,830.00

Other Necessary Expenses

	Undergraduate	Graduate
Non-Resident Summer Tuition *	$ 3,279.00	$ 3,420.00
Summer Fees	254.00	254.00
Summer Books	200.00	200.00
Winter Clothing	300.00	300.00
Thesis/Dissertation Typing ($500-1000)	NA	_____
Research Costs for Graduate Study (Please consult your department; may cost up to $10,000)	NA	_____
Intensive English for Conditional Admits based on low TOEFL (Varies by need: $390-2,720 per semester)	_____	_____
Field Trips/Study Travel ($0 to $1,500 estimated)	_____	_____
Departmental Technology Fees (Please consult your department for specific information)	_____	_____
Grand Total: (Add Required and Necessary expenses)	$_____	$_____

Required Expenses for Family Members

	Undergraduate	Graduate
Extra Expense for Spouse	3,000.00	3,000.00
Spouse's Medical Insurance	1,833.00	1,833.00
Subtotal for Spouse:	$ 4,833.00	$-4,833.00
Extra Expense for Each Child	2,400.00	2,400.00
Insurance for First Child	802.00	802.00
Insurance for Each Additional Child, add:	89.00	89.00
Subtotal for children:	$_____	$_____

Source: Colorado State University (1992).

Along with other colleges and universities, Colorado State
University accepts major credit cards (i.e., VISA and
Mastercard) as a convenient way of paying tuition and fees.

Purpose

The purpose of this study is to examine international
students' knowledge, attitudes, experiences, practices, and
satisfaction relating to credit cards. International
students enrolled at Colorado State University during Summer
Semester, 1992, were the sample. Each was mailed a six page
questionnaire addressing credit cards. Relationships among
knowledge, attitudes, experiences, practices, and
satisfaction relating to credit cards are examined. Socio-
demographic characteristics that may be associated with
these five variables are also investigated.

The results of this study may be useful to credit card
researchers, credit card issuers, providers of credit card
information, and international students in the United
States. Because little is currently known about
international students' use of credit cards, the results of
this study will contribute to the body of knowledge about
credit cards. Additionally, the relationships among the
variables investigated in this study may be used by credit
card researchers to improve models of credit card use and
satisfaction.

Issuers of credit cards should be interested in this study, especially credit card companies with an international focus. The results of this study might assist credit card companies in determining the market potential of international students and the services needed by these students. According to Knapp (1992), credit card companies can utilize research on market segments, such as international students, to better provide services to satisfy cardholders, create realistic expectations among cardholders regarding available services, and increase credit card usage. Additionally, the study's results may assist credit card issuers to develop strategies to encourage international students to maintain their cardholder status when they graduate and return to their home countries.

Providers of credit card information such as consumer educators may be able to use this study as a basis to develop consumer education programs focusing on the use of credit cards targeted to international students. According to Bannister and Monsma (1982:5):

> Consumer education is the process of gaining the knowledge and skills needed in managing consumer resources and taking actions to influence the factors which affect consumer decisions.

The Consumer Credit Counseling Service (1992) suggests that many individuals require assistance in setting goals,

tracking expenses, and managing debt regarding credit cards. This may be especially true for international students. The development of a credit card education program for them could be aided by the results of this study involving current credit card use by international students. Such a credit card education program could potentially be coordinated through a university's international student office, which typically serves international students in a variety of academic, social, and economic endeavors.

Finally, individual international students in the United States might benefit from the results of this study. Programs developed by credit card issuers and consumer educators should enable international students to use credit cards effectively. Knapp (1991; 1992) suggests that consumer education can lead to greater self-confidence, critical thinking, knowledge, life skills, and satisfaction among individuals operating in the marketplace. Not only can credit card programs positively affect individual international students attending U.S. colleges and universities, but these students might share their credit card knowledge with others before and upon return to their home countries.

Objectives

The objectives of this study are:

(1) To determine international students ʌnowledge, attitudes, experiences, practices, and satisfaction with credit cards;

(2) To examine the relationships among international students' knowledge, attitudes, experiences, practices, and satisfaction relating to credit cards;

(3) To examine the relationships between the socio-demographic characteristics of international students and knowledge, attitudes, experiences, practices, and satisfaction relating to credit cards; and

(4) To test a conceptual model that uses socio-demographic characteristics, along with credit card knowledge, attitudes, experiences, and practices to explain satisfaction with credit cards.

The literature relevant to each of the variables included in the objectives and the conceptual model proposed to explain credit card satisfaction are discussed in Chapter 2. Measurement of variables is explained in Chapter 3.

Limitations

There are two limitations to this study.

(1) The sample selected is limited to international graduate students at one land-grant university, Colorado State University. Colorado State University's graduate international students may not be

representative of all international students attending
U.S. colleges and universities.

(2) The study is limited to one point in time, Summer,
1992. It is possible that some international students
who were sent questionnaires were not on campus due to
vacation and travel opportunities, and that this
negatively influenced the study's response rate.

Assumptions

Two assumptions are made for this study.

(1) International students provided honest and accurate
responses when completing the questionnaire.

(2) International students who completed and returned the
questionnaire were not significantly different from
those international students who did not complete
and return the questionnaire.

Definitions

The major terms used in this study are defined as
follows.

Credit Cards: Any cards that are issued by U.S. or other
national financial institutions or businesses which
allow individuals to charge a purchase. Credit cards

include bank, telephone, travel and entertainment, and
gasoline and department store cards.

Credit Card Attitudes: The beliefs, feelings, and action
tendencies of individuals toward the use of credit
cards.

Credit Card Experiences: The background obtained by
individuals from using credit cards.

Credit Card Knowledge: Individuals' level of understanding
of credit cards and their use.

Credit Card Practices: The use of credit cards by
individuals to charge purchases and repay debt.

Credit Card Satisfaction: The overall level of approval
expressed by individuals with their use of credit
cards.

International Students: Individuals born outside the U.S.
who have not obtained U.S. residency or citizenship,
and who are currently enrolled as students in U.S.
colleges or universities.

CHAPTER 2

LITERATURE REVIEW AND CONCEPTUAL MODEL

This chapter reviews the literature relating to credit cards and the variables of interest to this research. The chapter begins with a history of credit cards and the identification of four trends in the credit card industry. Next, the literature on consumers' credit card knowledge, attitudes, experiences, practices, and satisfaction is summarized. Finally, a conceptual model based on the systems approach proposed by Deacon and Firebaugh (1988) is discussed as the theoretical basis for this study.

History of Credit Cards

The concept of credit has been a component of economics for thousands of years. From its beginning, credit has been used to develop customer loyalty and to allow people to acquire more goods than they could currently afford. The basic theory of credit is explained by Consumer Reports (1975:171) as follows: "Lenders rent money to those who need it. Money is thus a commodity, and someone who borrows, or rents, money pays for the privilege." The United States, with a large land area, geographically dispersed population

and a strong belief in capitalism, has always readily accepted the concept of credit.

✓Credit cards have a more recent history, first being issued by U.S. hotels in the early 1900s. By 1914, large department stores began to issue credit cards. In the early 1920s, oil companies issued "courtesy" cards with which travelers could charge purchases to their accounts at any of the oil company's affiliates. In 1936, the airline industry formed its own credit system called the Universal Air Travel Plan. These early credit card systems had four major purposes: (1) to identify customers with charge accounts, (2) to provide merchants with a mechanism for recording customer purchases, (3) to bind customers to the merchant, and (4) to generate sales (Mandell, 1972). A history of the early use of consumer credit, including credit cards, is provided by Nugent (1939).

Third-Party Universal Cards

In 1949, the formation of Diner's Club by Frank MacNamara created the first modern, third-party universal card (Shepherdson, 1991). ∨This card allowed customers an opportunity to purchase goods and services at a variety of establishments across the U.S.) The third-party's interest was entirely financial, conceiving credit as a product to be sold (Mandell, 1990). In 1958, American Express and Carte Blanche entered the universal credit card field.

The early universal credit cards experienced limited success, as a lack of a national network restricted their growth. In 1966, Bank of America attempted to develop a national network by licensing its Bank Americard across the U.S. At approximately the same time, several other large banks joined forces to form a second national credit card system--the Interbank Card Association. Intensive marketing efforts targeted at both merchants and consumers followed, leading to tremendous growth in the credit card industry. As reported by Mandell (1990), more than 11,000 banks had joined one or both of these networks by 1978. Annual sales reached $44 billion and 52 million Americans had at least two bank credit cards in 1978.

Growing use of credit cards caught the attention of the federal government as well as national consumer organizations. As a result, several bills to regulate the credit card industry were passed during the 1970s (Hull, 1978). Among these bills were the 1972 Fair Credit Billing Act, the 1973 Federal Privacy Act, and the 1977 Equal Credit Opportunity Act.

By the late 1970s and early 1980s, there was pressure towards consolidation of the universal credit cards. The two major winners of consolidation were VISA (a more universal name given to Bank Americard) and MasterCard (the eventual name agreed upon by the Interbank Card Association). The introduction of duality allowed many

consumers the option of acquiring both cards through the same bank (Garcia, 1980). There was also consolidation in travel and entertainment credit cards, with American Express the clear winner.

Large retail stores were still operating their own credit card plans during much of the latter half of the 20th century. In fact, large retail stores continue to operate successful credit card plans today, and have more cardholders than all the universal credit cards combined (Mandell, 1990). The retail credit cards remain popular because there is no fee for obtaining them, as the purposes of the retail credit cards are simply to facilitate store sales, foster customer loyalty, and provide a means of collecting marketing data (Raphel, 1991).

Continued growth for the universal credit cards occurred as small retailers, without their own credit card systems, began to accept the universal cards. Then in 1979, J.C. Penney decided to accept VISA along with its own card. Now many major retailers accept the universal cards as well as their own credit cards in order to increase business (Raphel, 1991).

Credit Cards in the 1980s

The decade of the 1980s saw the adding of an annual fee by the universal credit cards, setting of high credit card interest rates, introduction of a new third-party card

(Discover), and formation of telephone credit card systems (such as the AT&T Universal Card). Telephone credit cards have experienced surprising success. For example, AT&T's Universal Card posted a profit two years before expected (Pae, 1992). MCI and U.S. Sprint offer telephone credit cards that provide a way to pay for a wide variety of services such as voice messaging, conference calling and access to news, sports, weather, and financial information (Fitzgerald, 1992). Affinity card programs were also initiated in the mid-1980s, offering product benefit cards, lifestyle cards, and personality cards (Mandell, 1990).

Credit cards are now an essential element of daily life and have revolutionized the marketplace. By 1989, consumers spent nearly $430 billion using their credit cards (Statistical Abstract of the United States, 1991, 1991). Approximately 80 percent of U.S. households have credit cards (Shepherdson, 1991). The average American family spends 19.7 percent of what it earns to pay off consumer debt, not counting mortgages (Hedberg, 1987). A review of changes in credit card possession and use is provided by Lindley et al. (1989).

The increasing use of credit cards is a result of many consumers viewing credit cards as a convenient payment alternative to cash or checks and the holding of positive attitudes toward credit cards. According to McKenna (1981)

and Luckett and August (1985), advantages of credit cards
are:

   √ (1)   Permit users to carry less cash and economize on
          checking account balances;

     (2)   Serve as a record of purchases and as a leverage
          in disputes over purchases;

     (3)   Provide free credit for short-term purchases;

     (4)   Allow for financial coverage in emergencies;

     (5)   Permit short-term overspending for users to
          indulge in a variety of consumption items;

     (6)   Eliminate security problems inherent in carrying
          cash;

     (7)   Help to coordinate receipts for tax purposes; and

     (8)   Provide a source of purchasing power when a user
          cannot obtain other forms of consumer credit or
          when a retailer does not accept personal checks.

Current Trends in the Credit Card Industry

Competition is the key word that describes the credit
card industry in the early 1990s. Consumers have recently
demonstrated a reluctance to acquire additional debt as well
as credit cards. In fact, many Americans have attempted to
reduce their credit card debts which could create a credit
card downturn in the future (Spurlock, 1989). Excessive
interest rates and changes in the U.S. Tax Code have

hampered growth. Credit card issuers have begun to respond to this downturn by reducing interest rates, but interest rates still average 18.5 percent in the United States (Heady, 1992). Retailers charge an average of 21 percent for the use of their credit cards, due to the operating costs of the retail credit cards. The National Retail Council is currently sponsoring a public relations campaign to help consumers understand interest rates and finance charges, which are different. According to Walker (1992: 46), "Interest is the cost of money. But a finance charge is the cost of money plus all the other expenses associated with providing the service convenience and accessibility to credit that a retail charge card provides." In 1991, there was no growth in the overall number of cardholders at the ten leading credit card issuers (Banking Scorecard, 1992).

√ Four major trends in the credit card industry have implications for this research project: (1) expansion of services, (2) internationalization of credit cards, (3) targeting of college students, and (4) the market potential of international students.

Expansion of Services

As competition escalates in the credit card industry, many credit cards have offered additional services to cardholders (Graham, 1991). Buckstein (1991a) reports that these services include purchase protection plans, extended-

warranty programs, price protection plans, and emergency
services.

Another service is the production and distribution of
credit card information. This is not a new service, as some
issuers of credit cards have provided information to their
cardholders for many years. For example, Sears, Roebuck and
Co. (1972) distributed a before you buy booklet entitled
"Using Retail Credit" on using its charge card in the early
1970s. Cole (1988) reported that several credit card
companies were offering information to their cardholders on
techniques to manage consumer debt. Information on the
rights of consumers regarding credit cards have also become
widely distributed by issuers of credit cards. For example,
American Express (1985) produced a "Consumercard" explaining
women's credit rights. As a means of demonstrating concern
for cardholders (in the hope of increasing business),
services provided by credit card companies will most likely
increase throughout the 1990s.

Internationalization

Both VISA and MasterCard have aggressively marketed
their cards in Europe and Asia, as have the major travel and
entertainment credit card companies. As growth in the U.S.
credit card market slows, the international market looks
very appealing. Worldwide, the top four major credit cards

are VISA, MasterCard, American Express, and JCB, in order
(Mandell, 1990).

Although Americans have traditionally incurred more
debt, other industrial countries are narrowing the gap
(Christelow, 1988). Greater acceptance of debt and the
increased use of credit cards internationally can be
illustrated by considering increases in sales volume
experienced by MasterCard in 1989. Although sales volume
increased by 12 percent in the U.S., MasterCard sales volume
increased by 24 percent in Europe and 71 percent in Asia
(Kantrow, 1990a). In 1995, it is estimated that 61 percent
of credit charge volume will be generated overseas (Kantrow,
1990a).

European acceptance of credit cards varies widely by
country. While there are 62 bank credit cards for every 100
adults in the United Kingdom, there are only two cards per
100 in Germany (Mitchell, 1989). Major U.S. based credit
card companies have set their marketing sights on Europe's
small business market (Memmelaar, 1990); however, this will
not be an easy market to dominate. There already exists
European credit cards such as EuroCard and Access (Evans,
1989). Additionally, European credit card issuers have
experienced problems in achieving profitability. Even with
interest rates approaching 30 percent in the United Kingdom,
only large issuers are profitable (Evans, 1991). The
planned financial unification of the European Community in

1993 may provide marketing opportunities for U.S. based credit card issuers.

Handley (1992) reported that there has been rapid growth of credit cards in Asia. In 1991, VISA had 45 million cardholders in Asia. In Thailand, there was an estimated 500,000 credit cards in use. An example of a Thailand credit card application is shown in Appendix A.

Despite 27 percent interest rates on Japanese credit cards, consumer credit card debt is soaring (Holden, 1992). Of utmost concern to U.S. credit card companies is the growth of Japan's JCB Corporate Card. This card is held by 15 million Japanese and accounts for 39 percent of Japanese card purchases (Kantrow, 1990b). JCB has aggressively marketed its credit card and is now the most widely accepted card in Asia (Buckstein, 1991b). In 1990, there were 150,000 merchants in the U.S. that accepted the JCB card (Kantrow, 1990b). Given the potential of worldwide credit card systems, U.S. based credit card companies must compete in the international market, with the JCB shaping up to be a formidable contender in Asia. In addition, prepaid payment cards such as the Nippon Telegraph and Telephone card are popular in Japan (Mitchell, 1989).

Latin America may also hold potential for the expansion of U.S. credit cards. VISA recently opened a sales office in Mexico City to better serve its five million Mexican cardholders (Kantrow, 1992). Given the economic growth of

Latin American nations such as Mexico and Brazil, U.S. credit card issuers may increasingly market their cards to this segment of the world.

Targeting of College Students

Churaman (1988) suggested that credit card companies increasingly view college students as fresh potential customers. As a large population, college students are an attractive market. It is estimated that college students have a yearly discretionary income of $13 billion. Additionally, research shows that college students are more likely to have stable incomes and to be prime consumers in the future (Ellis, 1991).

Credit cards can be used by college students to develop a credit history, be available for emergencies, purchase school-related items, and cover travel expenses and long-distance telephone calls (Buttenheim, 1990). In a study conducted at Purdue University, it was found that 99 percent of undergraduates wanted a credit card (Fanning, 1982). A finding from the same study was that college students would spend an average of 22 percent more for a variety of products if they had use of credit cards.

Credit card promotional tools on college campuses have consisted of brochures, direct mailings, "take one" posters, applications placed in items purchased from campus bookstores, and booths set up at student centers (Ellis,

1991). According to the <u>Chronicle of Higher Education</u> (1991:A37): "Credit-card companies are blanketing colleges and universities with promotional material, hoping to tap into a potentially lucrative market of future customers." Examples of credit card applications available to college students are in Appendix B. Credit card companies often ensure that credit is easy to obtain and offer a variety of incentives to college students, such as reduced airfares and gifts. Citicorp offers the Student Citi Package tailored to student needs (Schram, 1991). Chase Manhattan has a $10 million campaign to promote MasterCard and VISA cards to college students. Citibank is the biggest card issuer on college campus, with more than 1.6 million Mastercard and VISA cardholders. Discover and American Express are the other major issuers to college students.

In order to obtain a credit card, college students must be at least 18 years old and show proof that they are attending college. Most credit card issuers do not require parent co-signers on the application. Low credit limits ($500-$2,000) are usually placed on cards issued (<u>Chronicle of Higher Education</u>, 1991). If students pay their minimum bills, their credit lines may increase to $5,000 within a year.

As reported by Ellis (1991), the result of such marketing efforts has been successful. The number of undergraduate students in four-year colleges and

universities who had at least one universal credit card increased 37 percent from 2.86 million (1988) to 3.9 million (1990). In 1990, 42 percent of college students had department store credit cards and 23 percent had oil company cards. Their delinquency rate was slightly lower than the five percent rate among the credit card holding population as a whole (Ellis, 1991).

Potential of International Students

In reviewing the credit card literature, there is no documentation of a credit card marketing program directed at international students. With enrollment increases to the present 407,500 international students at U.S. colleges and universities (Dodge, 1991), and their estimated annual spending of $7.2 billion in the United States, international students are an attractive potential market for credit card companies.

Descriptions of international students attending U.S. colleges and universities by field of study and country of origin are shown in Tables 1 and 2. Over one-third of international students major in business or engineering, and three Asian countries account for 27 percent of the students. International students are somewhat older and are more likely to be married than American students (Hull, W., 1978). The majority of international students utilize their own or their family's financial resources (National

Table 1. International Students in U.S. Colleges and Universities by Field of Study.

Field of Study	1989-90		1990-91	
	Number of Foreign Students	Proportion of Foreign Students	Number of Foreign Students	Proportion of Foreign Students
Agriculture	8,310	2.1%	8,080	2.0%
Allied health	3,860	1.0	3,500	0.9
Architecture & environmental design	5,670	1.5	5,600	1.4
Area & ethnic studies	1,520	0.4	1,350	0.3
Business & management	75,570	19.5	79,670	19.5
Communications	6,040	1.6	670	1.6
Communications technologies	570	0.1	410	0.1
Computer & information sciences	27,660	7.2	27,900	6.8
Education	11,210	2.9	12,280	3.0
Engineering	73,420	19.0	73,620	18.0
English language	19,120	5.0	19,300	4.7
Foreign languages	4,080	1.0	4,030	1.0
Health sciences	11,490	3.0	13,060	3.2
Home economics	1,980	0.5	1,980	0.5
Industrial arts	590	0.1	1,190	0.3
Law	2,200	0.6	2,630	0.7
Letters	6,270	1.6	6,300	1.5
Liberal & general studies	15,240	3.9	16,570	4.1
Library & archival sciences	850	0.2	750	0.2
Life sciences	12,610	3.2	14,160	3.5
Mathematics	8,550	2.2	8,940	2.2
Military sciences	140	--	150	--
Military technologies	70	--	0	--
Multi/interdisciplinary studies	1,970	0.5	2,900	0.7
Parks & recreation	230	0.1	260	0.1
Personal & social development	2,540	0.7	2,550	0.6
Philosophy & religion	1,930	0.5	2,040	0.5
Physical sciences	18,850	4.9	19,820	4.9
Protective services	550	0.1	580	0.1
Psychology	3,900	1.0	4,380	1.1
Public affairs	3,260	0.8	2,690	0.7
Science technologies	1,450	0.4	1,300	0.3
Social sciences	19,120	5.0	21,550	5.3
Theology	2,950	0.8	3,470	0.9
Visual & performing arts	11,190	2.9	12,250	2.0
Vocational home economics	280	0.1	320	0.1
Undeclared	21,610	5.6	25,280	6.2
Total	386,850	100.0%	407,530	100.0%

Source: S. Dodge (1991, p. A41).

√ Table 2. International Students in U.S. Colleges and Universities by Country of Origin.

Rank Country or Territory	Students	Rank Country or Territory	Students
1. China	39,600	35. Norway	2,350
2. Japan	36,610	36. Sri Lanka	2,320
3. Taiwan	33,530	37. Nicaragua	2,290
4. India	28,860	38. Trinidad & Tobago	2,240
5. Republic of Korea	23,360	39. South Africa	2,170
6. Canada	18,350	40. Netherlands	2,030
7. Malaysia	13,610	41. Sweden	2,030
8. Hong Kong	12,630	42. Panama	2,010
9. Indonesia	9,520	43. Ethiopia	2,000
10. Pakistan	7,730	44. Argentina	1,910
11. United Kingdom	7,300	45. Australia	1,910
12. Thailand	7,090	46. Bahamas	1,850
13. Germany	7,000	47. Egypt	1,780
14. Mexico	6,740	48. Cyprus	1,710
15. Iran	6,260	49. Kuwait	1,620
16. France	5,630	50. Haiti	1,450
17. Singapore	4,500	51. Vietnam	1,400
18. Greece	4,360	52. United Arab Emirates	1,350
19. Jordan	4,320	53. Switzerland	1,340
20. Spain	4,300	54. Honduras	1,310
21. Philippines	4,270	55. Syria	1,280
22. Turkey	4,080	56. Ireland	1,240
23. Brazil	3,900	57. Poland	1,240
24. Lebanon	3,900	58. El Salvador	1,210
25. Nigeria	3,710	59. U.S.S.R.	1,210
26. Saudi Arabia	3,590	60. Yugoslavia	1,200
27. Colombia	3,180	61. Ecuador	1,130
28. Israel	2,980	62. Chile	1,100
29. Venezuela	2,890	63. Costa Rica	1,100
30. Peru	2,800	64. Ghana	1,100
31. Bangladesh	2,530	65. Cuba	1,080
32. Jamaica	2,450	66. Morocco	1,070
33. Italy	2,390	67. Cameroon	1,020
34. Kenya	2,360		

Note: Includes only countries with over 1,000 students in U.S. institutions.
Source: S. Dodge (1991, p. A41).

Liaison Committee on Foreign Student Admissions, 1975).

This suggests that substantial numbers of international

students come from well-to-do and educated families. In

fact, the National Liaison Committee on Foreign Student

Admissions (1975) suggested that U.S. colleges are educating

large proportions of the internationally elite.

A growing number of U.S. colleges and universities have

established international student offices to meet the needs

of international students. These offices often provide

academic and social support services, such as an orientation

and a central point for student concerns to be resolved. As

reported by Dodge (1990), culture shock and alienation are

problems for many international students. Unfortunately,

Dodge (1990) also suggested that many international students

do not always access programs designed to help them.

It has been suggested that information dissemination,

internationalization, and a focus on college students are

growing trends for the credit card industry. All three

trends can come into play with targeting international

students. First, international students may want credit

card information specifically written with their needs in

mind. Second, international students are a growing

population and projections suggest that such growth will

continue (Deutch, 1991; Nadler, 1989). Most likely they

have many of the same concerns toward credit cards and their

usage that American students have. Third, the experiences

of international students with U.S. based credit cards may help the industry to internationalize. Many international students will return to their home countries after graduation with the finances and influence to promote their preferred credit cards by word-of-mouth.

Research on Credit Cards

There has been considerable interest in credit cards by the public, consumer advocates, government, and researchers. As an indication of this interest, a review of the "Index to Journal Articles in General Interest and Business," Infotrace, was conducted. This review revealed 1,922 articles dealing with credit cards during 1989-1991.

A majority of research efforts devoted to credit cards have focused on identifying the socio-demographic characteristics of credit card users. Credit card knowledge, attitudes, and practices have also been studied to a considerable degree. Experiences and satisfaction with credit cards have not been extensively researched; thus, there currently exists a lack of information regarding these two variables. Although there have been attempts to develop models to explain credit card use, no study has used credit card satisfaction as its dependent variable. Further, no study was found that utilized international students in the United States as its sample.

This study investigates five variables comprising credit card use: knowledge, attitudes, experiences, practices, and satisfaction. Unlike previous modeling efforts, credit card satisfaction is used in this study as the dependent variable in a model of credit card use. Another unique aspect of this study consists of surveying international students. Additionally, the socio-demographic variables included in this study go beyond what have been researched in the past (i.e., no previous study reported all the socio-demographic characteristics included in this research effort).

Credit Card Knowledge

A lack of knowledge relating to financial issues such as credit cards is responsible for consumers encountering a myriad of financial problems (Godwin and Carroll, 1986). Shay (1989) and Sullivan and Worden (1991) blamed inadequate knowledge of credit cards as contributing to the poor usage of credit cards and the rise in personal bankruptcies. Currently, 40 million Americans either have credit problems or no credit at all (Brunette, 1990).

Attempts to increase the knowledge base of Americans regarding credit cards have dominated the popular press coverage of credit cards (Schurenberg, 1987). For example, these suggestions were offered by Castrone (1991) and Eskey (1992):

(1) Select credit cards that carry less than a 15
     percent interest rate;

(2) Select credit cards that offer a full grace
     period;

(3) Select credit cards that have no annual fee;

(4) Avoid cash advances;

(5) Avoid being charged late fees;

(6) Make more than the required minimum payment;

(7) Read credit card agreements carefully; and

(8) Consider enhancements based on potential usage.

Research reveals that a large percentage of consumers
do not appear to have an adequate understanding of credit
cards. This is shown most clearly in the percentages of
respondents in studies who do not understand annual
percentage rates (cost of money) and finance charges (cost
of money plus service expenses) of credit cards. Brandt, et
al. (1975) found that consumers with lower incomes and less
education were less likely to know the finance charges and
interest rates of credit cards as compared to those with
higher income and education levels. The general tendency
revealed in the study was for respondents to underestimate
interest rates and to overestimate finance charges. Durkin
(1975) found that only 2.5 percent of Americans were aware
of annual percentage rates. Higher income respondents were
more likely to know about annual percentage rates but less
likely to be aware of finance charges.

In a survey reported in the ABA Banking Journal (1987), 25 percent of all Americans carrying bank credit cards did not know the rate of interest that they paid for using these cards. Most unaware were the elderly and those with low incomes. In a similar study conducted in Great Britain, over one-half of respondents who used credit cards did not know what the annual percentage rate meant (Mitchell, 1989).

Knowledge of credit regulations also appears to be inadequate. Parker and Shay (1974) found that awareness of government regulations was a key determinant of knowledge and understanding of credit cards. Hull (1978) discovered an overall low level of knowledge about credit regulations in her study, with previous credit experiences and higher income levels being positively related to greater knowledge.

Samuels (1976) found that a sample of women had adequate knowledge of sources of credit, interest rates, and the terms of a contract. This study revealed that knowledge was a by-product of the need for credit rather than being actively sought prior to the need. Crawl (1981) reported that knowledge about sources of credit was helpful to respondents' level of living, and that a majority of respondents were knowledgeable about interest rates and contract terms. Mandell (1973) suggested that knowledge is related to income and education, while Churaman (1988) suggested that males show higher confidence in their knowledge of credit cards.

Danes and Hira (1990) found a negative relationship between age and knowledge of credit cards, with younger consumers having greater knowledge. Persons with higher income levels had increased knowledge of credit cards as well. A positive relationship existed between higher knowledge and a greater use of credit cards and the accumulation of finance charges. Respondents with little knowledge believed that credit cards should be used primarily for convenience reasons.

Previous research indicates that there is a need for information on credit cards among consumers. American Express (1990), the American Bar Association (1988), Consumers' Research (1980; 1983), and Consumer Reports (1987) have responded to that need by producing information on how to establish credit, use credit laws, obtain a credit report, and calculate the costs of using credit cards.

As stated by Danes and Hira (1990:223): "One of the reasons for the misuse of credit cards is that consumers do not seem to have complete and accurate knowledge regarding credit cards." As suggested by Knapp (1991), consumer education is crucial to increase credit card knowledge of consumers. However, it appears that high knowledge levels are not sufficient to alter the poor use of credit cards. Castrone (1991) reports that many Americans know that they should reduce their use of credit cards, but keep using those cards anyway. Thus, consumer education to increase

credit card knowledge needs to be supplemented by other programs to influence credit card use.

Credit Card Attitudes

Using the attitude concept as defined by Brandt and Olson (1986), attitudes toward credit cards can be considered as positive or negative feelings that people have toward the several dimensions of credit card use. In the most extensive national study of credit card attitudes, Mandell (1972) found that 35 percent of his respondents felt that the use of credit cards was good, compared to 29 percent who felt that the use of credit cards was bad. Consumers who used travel and entertainment cards were more likely to approve of credit use (48 percent) than those who utilized other types of credit cards.

Research conducted since that time indicates that Americans generally have positive attitudes toward credit cards. Crawl (1981) found that most credit cardholders indicated that credit had a positive effect on the attainment of level of living that they desired. In studies by Durkin (1975) and Heck (1982), credit card buying was related to positive attitudes toward buying now and paying later. In a study of Korean households, Kim (1989) found that consumers tended to have favorable attitudes toward credit cards.

Negative attitudes toward credit cards have also been reported in the literature. Awh and Waters (1974) found two unfavorable attitudes about bank credit cards: (1) cards may induce people to excessively rely on credit, and (2) cards should be confined to paying for emergency expenses. These negative attitudes were also found by Mandell (1973), who found that Americans were far more likely to use credit cards than to approve of their use.

A major consideration in research conducted on credit card attitudes has been dividing credit card users into two groups: those who view credit cards as a convenience (pay the balance within the billing cycle) or as an installment payment option (pay interest charges on the unpaid balance). Slocum and Mathews (1970) found that upper income consumers were more apt to view credit cards as a convenience and were more favorable to using credit cards for the purchase of luxury goods. Lower income consumers were more likely to be installment users, and to approve of the use of credit cards for the purchase of durable and necessity products. The American Bar Association (1988) reported that 78 percent of Americans viewed credit cards as a convenience. Danes and Hira (1990) found that respondents with higher incomes and educational levels, and younger ages, were more likely to believe that credit cards should be used for installment purposes.

Research also reveals that consumers with more
favorable attitudes toward credit cards use them more (Awh
and Waters, 1974; Crawl, 1981; Durkin, 1975; Hoerman, 1977;
Slocum and Mathews, 1970). Those with more favorable
attitudes toward credit cards are more likely to be college
students (Sholten, 1981), have higher incomes (Mandell,
1972; Slocum and Mathews, 1970), be younger (Awh and Waters,
1974; Mandell, 1973), and be better educated (Danes and
Hira, 1990).

Credit Card Experiences

There are several ways to measure credit card
experiences. One measurement has been to identify the
sources of information used by consumers to learn about
credit cards. Samuels (1976) found that a sample of urban
wives accessed a variety of information sources: classes in
school (36 percent), mass media (34 percent), family (28
percent), job (22 percent), friends (12 percent), and other
(4 percent). In a survey of college students, Sholten
(1981) discovered that parents/spouse/relatives/friends and
classes were most often used to obtain information about
credit cards (66 percent). Classes providing credit card
information were most often offered in economics, business,
and home economics. Bowers (1975) and Churaman (1988)
reported on two educational programs to provide information

on credit cards to, respectively, lower income families and college students.

Another way to consider credit card experiences is actual use, as experience is gained by consumers through their use of credit cards. Yeo (1991) reported that consumers possessing at least one credit card were more likely to obtain an additional card. Garcia (1980), Feinberg (1986), and Hirschman (1979) suggested that the possession of credit cards conditioned consumers to use credit cards more frequently and to spend more. Kim (1989) reported that 40 percent of a sample of Korean cardholders used credit cards for at least three years, and that 87 percent intended to use credit cards during the following year.

Another way of measuring credit card experiences is to identify problems encountered by consumers using credit cards. Yeo (1991) found that consumers who had difficulties resolving an error relating to credit card use were less likely to obtain an additional credit card. Churaman (1988) reported that approximately 43 percent of those college students experiencing credit card problems had their problems resolved. Hull (1978) found that previous credit card problems were associated with greater knowledge of credit regulations. Kim (1989) discovered that poor use of credit cards in the past was associated with more negative attitudes toward credit cards.

Credit Card Practices

There are several issues to consider regarding credit card practices. Most researchers have focused on the characteristics of consumers who use credit cards (Canner and Cyrnak, 1986). Income, age, and education appear to be the socio-demographic variables most frequently associated with credit card practices.

Heck (1982) found that younger heads of households were more likely to use credit cards and to maintain large outstanding balances on their accounts. Awh and Waters (1974) found that active credit card users tended to be younger than inactive users. Yeo (1991) concluded from a national study that younger consumers had a higher probability of adding an extra credit card. Other research has shown a negative relationship between age and credit card use (Danes and Hira, 1990; Garcia, 1980; Hirschman and Goldstucker, 1978; Hull, 1978; Mandell, 1972; Martell and Fits, 1981; Samuels, 1976; and Sullivan and Worden, 1988). Danes and Hira (1990) suggested that this relationship may be due to an age cohort effect based on life experiences, with older consumers finding credit cards less acceptable than younger consumers who grew up in the "credit card age."

Education appears to influence credit card use, with higher education levels being positively related to greater credit card use (Awh and Waters, 1974; Crawl, 1981; Garcia, 1980; Hull, 1978; Johnston, 1972; Mandell, 1972; Plummer,

1971). Yeo (1991) found higher education levels to be positively related to the probability of selecting an additional credit card. Churaman (1988) found that over one-half of college students had bank credit cards, one-third had gasoline credit cards, and one-third had telephone cards. The major reasons given by this sample for using credit cards were convenience, easy to purchase an item when there was no cash available, and to develop a good credit history.

The relationship between income level and credit card use is not as clear as education and age. Awh and Waters (1974) found that income did not affect credit card use. Both Hull (1978) and Samuels (1976) found that lower income and middle income households tended to use credit cards most often. On the other hand, studies by Danes and Hira (1990) and McAlister and Kinsey (1979) indicated that the higher the income of consumers, the greater the number of credit cards held. Garcia (1980), Hirschman and Goldstuker (1978), Johnston (1972), and Mandell (1972) each found a positive relationship between income and credit card use. Sullivan and Worden (1988) suggested that there was greater use of credit cards among families with stable incomes and with two-wage earners.

Other socio-demographic variables associated with greater use of credit cards are suburban residence (Mandell,

1972), large household size (Danes and Hira, 1990), being married (Hull, 1978), and social class (Garcia, 1980).

The percentages of Americans who are installment users versus convenience users has been another subject of research, based on the attitudinal differences mentioned in the previous section. Danes and Hira (1990) found that those consumers who more often accumulated finance charges had a higher level of credit card knowledge and believed that credit was primarily for installment purposes. Similarly, Samuels (1976) reported that consumers with the most knowledge were larger users of credit cards. Older and lower income consumers tended to be convenience users of credit cards. Danes and Hira (1990) also found the more credit cards used by a household, the higher the probability that it paid finance charges each month.

Other research efforts that have focused on credit card practices show college students primarily use credit cards to purchase clothing and gasoline (Sholten, 1981), and having a credit card reduces decision-making time in making a purchase (Feinberg, 1986). Both Garcia (1980) and Feinberg (1986) found that possession of a credit card was associated with higher spending levels and a greater level of purchasing. Internationally, research conducted in Europe (American Express, 1990) and Asia (Kim, 1989) produced findings similar to U.S. research on credit card

use and the socio-demographic variables associated with
credit card use.

Credit card practices have been measured and reported
in a variety of ways (e.g., extent of credit card use,
balance on credit card bills, and number of cards held).
These differences in variables used to measure credit card
practices most likely account for at least some
discrepancies reported in the relationships between credit
card practices and socio-demographic characteristics.

Credit Card Satisfaction

Credit card satisfaction has not been extensively
studied. Churaman (1988) and Hull (1978) were two
researchers who directly asked respondents about
satisfaction with credit card use. Three other studies
contained questions regarding financial management and level
of living.

Churaman (1988) reported that 80 percent of her survey
respondents expressed satisfaction with their use of credit
cards; also, 39 percent felt that the use of credit cards
increased control of their money. Hull (1978) also found
that satisfaction with current credit card experiences was
positive.

Crawl (1981) indicated that credit cardholders were
slightly more likely to state that credit use was positively
related to attainment of level of living as compared to

respondents with no credit cards (81 percent versus 74 percent). In Hira's (1987) study, number of credit cards used was related to greater asset ownership. Finally, Kim (1989) discovered that credit cardholders reported more financial management practices and greater satisfaction with financial well-being as compared to non-cardholders.

Satisfaction with credit cards appears to be high. However, there currently exists limited research on credit card satisfaction.

Socio-Demographic Variables Summarized

Several socio-demographic characteristics have been studied in relationship to credit card knowledge, attitudes, and practices. Generally, respondents with higher incomes, higher education levels, and who are younger have greater knowledge, more favorable attitudes, and greater credit card use when compared to their counterparts. Specific studies supporting these relationships have been previously reviewed. Being married and having more household members also appear to be positively associated with credit card use. Socio-demographic characteristics have not been extensively studied in relationship to credit card experiences and satisfaction.

Conceptual Model

In a review of the credit card literature, seven modeling efforts that attempted to explain some aspect of credit card use were located. No model was found that had been utilized more than once in research.

Hull (1978) proposed a model based on a review of the literature. In Hull's model, knowledge of consumer credit regulations (some of which pertained to credit cards) was used as the dependent variable. Four socio-demographic characteristics (age, marital status, education, and income) were identified as independent variables, operating through three intervening variables (attitudes about the need for government regulations to solve credit problems, conservative or liberal orientation to public issues, and credit experiences). Path analysis was utilized to test the model.

Garcia (1980) proposed a model as a means to critique research on credit card user characteristics. Specifically, Garcia applied an economic model of a rationed market to predict demand and supply effects on the characteristics of credit card users.

Sholten (1981) considered the relationships between three variables related to credit in a model, based on a review of the literature. Several types of consumer credit, including credit cards, were studied. Sholten proposed that

educational experiences and knowledge level relating to credit, attitudes toward credit, and credit usage patterns were all interrelated and influenced each other.

Crawl (1981) also developed a model based on a review of the literature. Crawl computed bivariate relationships to consider the effects of four independent variables (socio-demographics, knowledge of credit, experiences with credit, and attitudes toward credit) on one dependent variable (perception of the effects of credit use on level of living). Credit cards were included as one type of consumer credit.

Kim (1989) developed a model based on Ajzen and Fishbein's (1980) conceptualization of the indirect effects of external variables on behavior. Using regression analysis, Kim proposed that financial management behavior, demographics, and perceived financial well-being influenced whether a consumer was a credit cardholder. Based on the cardholder's experiences, certain attitudes and practices of credit cards were formed. These attitudes and practices, in turn, influenced current and planned use of credit cards.

Danes and Hira (1990) developed an analytical model to predict credit card practices. Using LISREL as their statistical approach, four independent variables (education, age, household size, and income) were predicted to affect credit card practices as well as two intervening variables (knowledge and beliefs relating to credit cards). These two

intervening variables were predicted to directly influence credit card practices.

Finally, Yeo (1991) applied a discrete choice model to explain credit card choice behavior. Using logit analysis, Yeo considered three steps followed by consumers in selecting a credit card: a decision to acquire a card, a choice between the different types of cards, and a selection of a specific credit card within the chosen type.

Thus, seven different models relating to credit cards have been proposed in the literature. Although some components of these models are applicable to this research, the previous models (1) did not utilize credit card satisfaction as a dependent variable; (2) did not include all five of the credit card variables measured in this research; and (3) were not applied to credit card use by international students in the United States.

In an effort to develop a conceptual model for this study, Deacon and Firebaugh's (1988) systems framework is used. Namely, the individual personal/management system appears most appropriate. Deacon and Firebaugh's description of the individual personal/management system is shown in Figure 2. In this model, a system is considered as "an integrated set of parts that function to accomplish a set of goals" and management is defined as "the judicious use of means to accomplish ends" (Deacon and Firebaugh, 1988:7).

Figure 2. Original Conceptual Model for Individual Personal/Managerial System.

INPUT

DEMANDS
External
  Family values, goals, claims
  Social norms, claims
  Events
Internal
  Personal goal orientations

RESOURCES
External
  Family supports
  Social supports
  Income and net worth
Internal
  Personal capabilities, qualities
  Life experiences/relationships

Feedback

THROUGHPUT

Environment

PERSONAL SUBSYSTEM
Developing capacities
Evolving values

MANAGERIAL SUBSYSTEM
Planning
Implementing

Environment

Feedback

OUTPUT

DEMAND RESPONSES
Goal orientations
Goal achievements
Personality development

RESOURCE CHANGES
Personal capacities/qualities
Income and net worth

Source: R.E. Deacon and F.M. Firebaugh (1988, p. 22).

In the model, input "is matter, energy, and/or information entering a system in various forms to affect throughput (transformation) processes in the achievement of outcome or output" (Deacon and Firebaugh, 1988:8-9). The ways (practices) in which credit cards are used by individuals depend on the input to this personal/managerial system.

The socio-demographic characteristics of international students can be considered as input, as they are the resources drawn upon when making decisions about credit card practices. The revised model (Figure 3) incorporates the four socio-demographic characteristics found to be related to credit card use in previous research: income, age, education, and marital status. Due to the situation of international students, additional socio-demographic characteristics are considered important inputs: home country, length of U.S. residency, gender, presence of spouse and/or children, and major sources of financial support.

Knowledge regarding credit cards and experiences with credit cards are also proposed to be inputs, in the form of human resources (internal). Higher levels of credit card knowledge should result in the more efficient use of credit cards. Educational experiences regarding credit cards and positive or negative experiences should also affect credit card practices.

Figure 3. Revised Conceptual Model Applied to Credit Cards.

INPUT

THROUGHPUT

OUTPUT

Socio-Demographic
Characteristics

Credit Card
Knowledge

Credit Card
Practices

Credit Card
Satisfaction

Credit Card
Experiences

Credit Card
Attitudes

Feedback

48
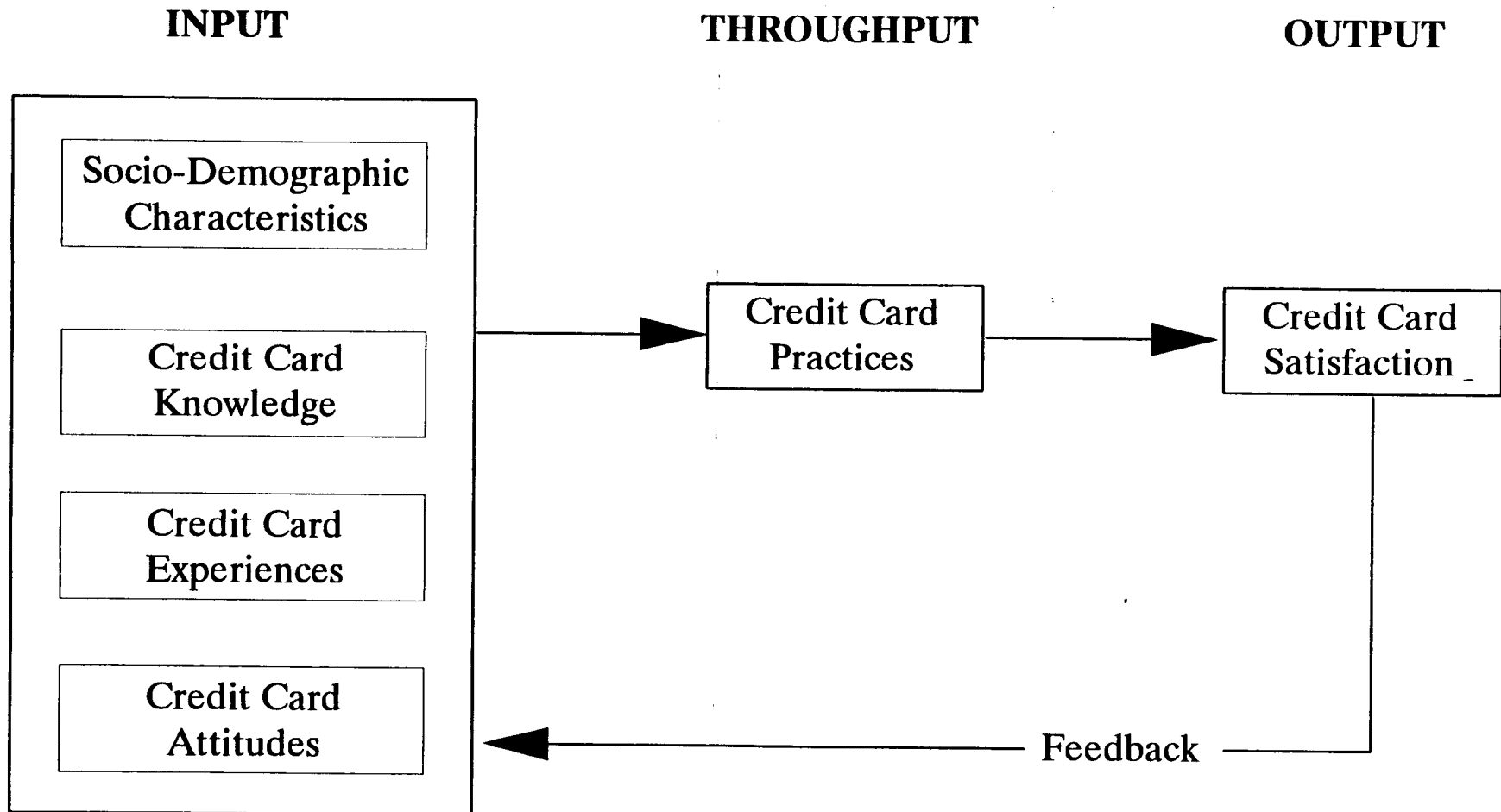
Attitudes toward credit cards are considered as a demand input in the model. Attitudes toward credit cards should influence the planning and implementing of credit card use.

Figure 3, therefore, displays four independent variables labelled as input in the model: socio-demographic characteristics, credit card knowledge, credit card experiences, and credit card attitudes.

Throughput "is the transformation of matter, energy, and/or information by a system from input to output" (Deacon and Firebaugh, 1988:10). In Figure 3, it is proposed that credit card practices transform input to output: credit card satisfaction. Thus, credit card practices can be considered as an intervening variable. Credit card practices are measured in several ways in this study, involving both planning and implementing credit card use.

Output "is matter, energy, and/or information produced by a system in response to input and from throughput (transformation) processes" (Deacon and Firebaugh, 1988:10). One type of output consists of demand responses such as satisfaction (Deacon and Firebaugh, 1988:12). Thus, credit card satisfaction is proposed as the system's output (Figure 3) and considered to be the dependent variable in the model.

The final component in the model consists of feedback. Deacon and Firebaugh (1988:17) define feedback as "information about output that reenters the system as input." A high level of satisfaction would reenter the

system as positive feedback, indicating that credit card use
is appropriate. A low level of satisfaction would reenter
the system as negative feedback, promoting changes such as
a reduction in future credit card use as a response to a
high debt load.

CHAPTER 3

METHODOLOGY

This chapter presents the methodological procedures utilized in the research. It describes the sample selection and approval process, development of the questionnaire, data collection procedures, data coding procedures, research questions, null hypotheses, and data analysis.

Sample Selection and Approval

The population of the study was initially identified as international students attending Colorado State University (CSU). During Spring Semester, 1992, a total of 939 international students were enrolled at CSU as follows: undergraduate students--172; graduate students--682; non-degree students--36; intensive English students--36; and practical training students--13 (Table 3). Given the large number of graduate students among CSU international students, their accessibility through department offices based on majors and the higher probability that graduate students as compared to undergraduate students would be on campus during the summer, it was decided to select graduate international students for the sample.

Table 3. International Students at Colorado State
          University, Spring, 1992.

Students	Spring Semester, 1992
Undergraduate	172
Masters	318[a]
Doctoral	360[a]
Doctor in Veterinary Medicine	4[a]
Total degree candidates	854
Non-degree (including International Schools and special courses)	36
Intensive English	36
Practical training	13
Total	939

[a]Classified as graduate students

Source: Colorado State University (1992).

The sample frame for this study consisted of a listing of CSU graduate international students enrolled during Summer Semester, 1992. Names and addresses of these students were obtained from the list produced by the CSU International Office. Although summary data of international students are not produced during the summer months, the listing of students is regularly updated to be as current as possible by the CSU International Office. A total of 623 graduate international students were listed during Summer Semester, 1992.

Approval of this research was first obtained from the CSU International Office, which provided the names and addresses of graduate international students. Approval for this study was then obtained from the Human Subjects Committee, Oregon State University. Finally, cooperation was granted by the Department of Design, Merchandising and Consumer Sciences, Colorado State University, to provide a mailbox and a return address for questionnaires.

Development of the Questionnaire

The questionnaire (Appendix C) consists of the front cover, six pages of questions, and a back page thanking respondents and asking for comments. The questions can be categorized as: (1) credit card practices, (2) credit card satisfaction, (3) credit card experiences, (4) credit card

attitudes, (5) credit card knowledge, and (6) socio-demographic characteristics. The sections of the questionnaire do not correspond exactly to the questions used to measure these six variables, as specified below.

Practices

The first section of the questionnaire generally focuses on information relating to credit card practices. The questions in this section were developed from research efforts by Kim (1989) and Sholten (1981). Questions addressing credit card practices are: total number of credit cards in own name (Q1a); permission to use another person's credit cards (Q1b); types of credit cards most frequently used (Q2); items most frequently purchased with credit cards (Q3); frequency of credit card use (Q4); repayment practices (Q7); awareness of interest rate for credit card use (Q8); recordkeeping on credit card purchases (Q9); and primary purposes of credit card use (Q11).

Satisfaction

Within the questionnaire section titled "credit card practices," two questions are asked on satisfaction. These questions address satisfaction with how credit cards help in managing spending (Q12) and with current use of credit cards (Q13). A five-point scale ranging from satisfied to

dissatisfied, allowing for "not sure" responses, was used
for each question.

Experiences

The second section of the questionnaire generally
addresses credit card experiences and consists of questions
drawn from research conducted by Sholten (1981). The items
are: length of time using credit cards (Q14); sources used
to learn about consumer credit cards (Q15); when credit card
information was obtained in school (Q16); use of credit
cards before coming to U.S. (Q17); plans to use credit cards
after returning to home country (Q18); problems with using
credit cards (Q19); and parents' possession of credit cards
(Q30).

Attitudes

The third titled section of the questionnaire relates
to credit card attitudes. It consists of a revised version
of a credit attitude measurement scale developed by Makela
and Shaw (1976). The scale was originally constructed from
a pool of items compiled through a literature review. The
Likert-type scale consists of 22 favorable and unfavorable
statements on various aspects of credit cards. Five
response choices for each statement were given: strongly
disagree (SD), disagree (D), neither agree or disagree (N),
agree (A), and strongly agree (SA) (Q20.1-Q20.22). A

reliability test was conducted on the attitude scale used in this study, resulting in a coefficient alpha of .76.

Knowledge

The fourth section of the questionnaire addresses credit card knowledge. Credit card knowledge is ascertained by a revision of a test developed by Gitman and Makela (1978). This test contains 15 true/false statements regarding such credit card topics as types of credit accounts, credit cost, repayment practices, and regulations (Q21.1-Q21.15). In addition to the true or false answer for each statement, respondents were asked if they were "sure" or "unsure" of their answer. A reliability test was conducted on the knowledge test, resulting in a coefficient alpha of .62.

Socio-Demographic Characteristics

The final section of the questionnaire generally focuses on socio-demographic information. Questions are asked relating to possession of a credit card (Q1a); average monthly dollar amount charged (Q5); identification of person paying the largest portion of credit card bills (Q6); home country (Q22); length of U.S. residency (Q23); age (Q24); gender (Q25); marital status (Q26); presence of spouse (Q27); presence of children (Q28); major sources of financial support (Q29); and annual spending (Q31).

Data Collection Procedures

After conducting a pilot test with students in a consumer sciences course at CSU and with 15 international graduate students at CSU, minor modifications were made in question wording. The questionnaire was then mailed to all CSU graduate international students. In order to obtain an adequate response rate, the questionnaire was carefully constructed in terms of length, ease in answering, question order, and format. The questionnaire was reduced in size and designed in a booklet format (7" x 8.5"), resulting in an appearance of questionnaire length that is shorter than it actually is. Additionally, an interesting design and title on the front cover probably created interest in filling out the questionnaire.

For distribution, questionnaires were grouped by department of graduate international students, placed in large manila envelopes, and delivered to department secretaries. A memorandum accompanied the manila envelopes to the secretaries asking them to distribute the questionnaires (Appendix D). Each sample member had an individual questionnaire, marked by an identification number, in an envelope with his or her name and address. Identification numbers placed on the questionnaires were used to delete names of respondents from the sample list.

A cover letter accompanied each questionnaire in the initial mailout. The cover letter described the purpose of the study, included a statement asking for study participation, assured confidentiality, and instructed respondents on how to return the questionnaire (Appendix E). A self-addressed envelope was also included for respondents to return the questionnaire through campus mail.

The initial campus mailout was sent June 17, 1992, to all 623 CSU graduate international students. A postcard reminder was mailed to local home addresses of the entire sample on June 30, 1992. This postcard reminder thanked (with the statement "thank you very much" highlighted) those respondents who completed the questionnaire and reminded those who had not completed the questionnaire to do so (Appendix F). On July 8, 1992, 411 nonrespondents were mailed a second copy of the questionnaire and return envelope. The cover letter for this follow-up is in Appendix G.

A major concern of mail questionnaire surveys is adequacy of response rate. There is some agreement on techniques that can increase the response rate (Courtney, 1988; Dillman, 1978; Kanuk and Berenson, 1975), and many of them were implemented in this study (e.g., questionnaire format and follow-ups). A summary of questionnaire return is in Appendix H. A total of 623 questionnaires were sent out. Of these, 58 were returned not deliverable, leaving

565 students who could have possibly participated in this study. Completed questionnaires were returned by 261 respondents during the six weeks, a response rate of 46.2 percent. After the ending date (August 3, 1992), 17 additional questionnaires were returned. These were not used in the analyses.

Data Coding

Coding of the data was done directly on each of the 261 usable questionnaires, as responses to items were primarily designed to be self-coded (Appendix I). Coding was completed on a daily basis as questionnaires were received.

There was one exception to the self-coding procedure. Home country of respondents was coded according to the World Bank (1991) per capita income classification of countries: low-income, lower-middle-income, upper-middle-income, and high-income. Countries included in these categories are shown (by region and alphabetically) in Appendix J. This coded variable will be referred to as home country.

A knowledge score was computed for each respondent based on the number of correct responses to the knowledge items (Q21.1-21.15). An incorrect response was scored as 0, and a correct response was scored as 1. The items and correct responses are shown in Appendix K. Scores could

range from 0 (all 15 answers incorrect) to 15 (all 15 answers correct).

An attitude score was computed for each respondent based on responses (1 for strongly disagree to 5 for strongly agree) to 22 statements (Q20.1-20.22) about credit cards. Scoring was reversed for unfavorable statements. The 22 items and their designations as either favorable or unfavorable attitudes are in Appendix L. Scores could range from 22 (strongly unfavorable for all 22 items) to 110 (strongly favorable for all 22 items).

Additionally, an experience score was computed for respondents by summing responses to five experience questions (Q14, Q16, Q17, Q19, and Q30). Scoring was reversed for question 14. Scores could range from 5 to 14 with lower scores indicating more experiences using credit cards. A satisfaction score was computed as the mean of the two satisfaction questions (Q12 and Q13). Scores could range from one to six with lower scores indicating more satisfaction on using credit cards.

It was decided not to code the comments provided by respondents, except to code if a comment was or was not made. The written comments from 48 respondents are in Appendix M exactly as stated by respondents.

Research Questions

In order to meet the four objectives listed in Chapter 1, the research questions addressed in this study are as follows.

(1) What is the credit card knowledge of graduate international students attending Colorado State University?

(2) What are the credit card attitudes of graduate international students?

(3) What are the credit card experiences of graduate international students?

(4) What are the credit card practices of graduate international students?

(5) What is the credit card satisfaction of graduate international students?

(6) What are the relationships among graduate international students' credit card knowledge, attitudes, experiences, practices, and satisfaction?

(7) What are the relationships between the socio-demographic characteristics of graduate international students and the credit card measures of knowledge, attitudes, experiences, practices, and satisfaction?

(8) How well can credit card satisfaction of graduate international students be explained by using a

conceptual model in which socio-demographic characteristics, credit card knowledge, credit card experiences and credit card attitudes are considered as input, credit card practices are considered as throughput, and credit card satisfaction is considered as output?

Null Hypotheses

There are two null hypotheses that will be tested in this research, based on the conceptual model explained in Chapter 2.

(1) There will be no significant relationships between the four variables designated as input (credit card knowledge, credit card attitudes, credit card experiences, and socio-demographic characteristics) and the variable designated as throughput (credit card practices) in the conceptual model. Specifically, there will be no significant relationships between:

    1.1 knowledge and practices,

    1.2 attitudes and practices,

    1.3 experiences and practices, and

    1.4 socio-demographics and practices.

(2) There will be no significant relationship between the throughput variable and the variable designated as

output (credit card satisfaction) in the conceptual
model.

Data Analysis

Data were formatted and analyzed using the Statistical
Analysis System (SAS). Several consultations were held with
statisticians at the Colorado State University Statistics
Laboratory to arrive at the most appropriate statistical
techniques.

Descriptive statistics were selected to answer the
first five research questions. Frequencies, percentages,
means, standard deviations, and ranges are reported when
appropriate. These descriptive statistics provide a
description of respondents' credit card knowledge,
attitudes, experiences, practices, and satisfaction.

In order to answer Research Questions 6 and 7, as well
as to test the two null hypotheses, Pearson correlation
analysis was selected as the most appropriate statistical
technique. Correlation analysis is a common statistical
procedure to show the strength of a relationship that exists
between two continuous variables (Kerlinger and Pedhazur,
1973). The Pearson correlation coefficient (r) is a number
that ranges from -1.0 to +1.0. A positive correlation means
that as the values of one variable increase, the values of
the other variable also tend to increase. A small or zero

correlation coefficient indicates that two variables are not linearly related. A negative correlation coefficient reveals an inverse relationship between two variables. The significance level was also calculated between each bivariate relationship. A probability of .05 or below was considered to be statistically significant.

Finally, canonical correlation analysis was selected as the most appropriate statistical technique to answer Research Question 8. Canonical correlation analysis allows "a researcher to examine patterns of interrelationships between sets of variables" (Levine, 1977:5). In this way, canonical correlation analysis can be a data reduction technique to identify the most significant relationships in a model. The canonical correlation coefficient (r_c) can range from -1 to +1 . Significance levels were also calculated for the canonical correlations, with a probability of .05 or below considered to be statistically significant. According to Levine (1977), the square of the canonical correlation (R^2_c) is an estimation of the variation explained. The R^2_c was calculated for the relationship between credit card practices and satisfaction.

CHAPTER   4

RESULTS

Results of the study are reported in five sections in this chapter. First, the demographic and financial characteristics of respondents are described. Second, respondents' credit card knowledge, attitudes, experiences, practices, and satisfaction are presented. Third, the relationships among the five credit card variables are analyzed. Fourth, the relationships between respondents' socio-demographic characteristics and the five credit card variables are examined. Finally, the conceptual model is tested along with its associated null hypotheses.

Description of Respondents

As described in Chapter 3, a total of 261 CSU graduate international students returned completed questionnaires. A demographic profile of the study's 261 respondents is in Table 4. Approximately three-fourths of the respondents were males and one-fourth were females. The average age of respondents was 31.2 years, with the majority (67.3 percent) in the 25-34 age range. Slightly more than one-half of the respondents were married. Regarding respondents' family situations, 47.7 percent had a spouse in the U.S. and 30.7

Table 4. Demographic Profile of Respondents (Frequencies and Percentages).

Variable	Frequency	Percent	Cumulative Percent
Gender[a]			
Male	190	73.4	73.4
Female	69	26.6	100.0
Age (Years)[a]			
20-24	20	8.0	8.0
25-29	96	37.8	45.8
30-34	75	29.5	75.3
35-39	37	14.8	90.1
≥ 40	25	9.9	100.0
Mean	31.19		
Standard Deviation	5.64		
Range	21-48		
Marital Status[a]			
Married first time	133	51.2	51.2
Never married	115	44.2	95.4
Other	12	4.6	100.0
Spouse in U.S.[a]			
Yes	123	47.7	47.7
No	32	12.4	60.1
Not married	103	39.9	100.0
Children in U.S.[a]			
Yes	78	30.7	30.7
No	58	22.8	53.5
Have no children	118	46.5	100.0
Length of U.S. Residency (Years)[a]			
< 1	35	13.6	13.6
1-2	96	37.2	50.8
3-4	81	31.4	82.2
≥ 5	46	17.8	100.0
Mean	2.70		
Standard Deviation	1.90		
Range	< 1-9		
Home Country[a]			
Low-income	115	44.2	44.2
Lower-middle-income	40	15.4	59.6
Upper-middle-income	56	21.5	81.2
High-income	49	18.8	100.0

[a] Possible n of 261; actual n may vary due to item nonresponse

percent had children living with them. These demographic characteristics conform to those of international students in the U.S.; namely, they tend to be older, male, and in a family (i.e., married with children) as compared to traditional American students (Hull, W., 1978).

The mean length of U.S. residency was 2.7 years, with the majority (68.6 percent) of respondents living in the U.S. from one to four years. Therefore, most respondents had lived in the U.S. for a sufficient length of time to become aware of credit cards. Respondents were from 55 countries, representing every continent. The largest percentage of respondents were categorized as coming from low-income countries (44.2 percent), followed by upper-middle-income countries (21.5 percent), high-income countries (18.8 percent), and lower-middle-income countries (15.4 percent) (see Appendix J for country categories).

A financial profile of respondents is shown in Table 5. Annual spending varied widely for respondents, with 29.6 percent spending $10,000 or less and 16.3 percent spending $20,000 or more. The modal category was $10,000-14,999, as 34.6 percent of the respondents selected this annual spending amount. Based on the comments received, most respondents did not consider tuition as part of their annual expenses. Slightly more than six of ten respondents received financial aid (61.5 percent) in one form or another. Other financial support sources were employment

Table 5.   Financial Profile of Respondents (Frequencies and
           Percentages).

Variable	Frequency	Percent	Cumulative Percent
Annual Spending[a]			
< $10,000	76	29.6	29.6
$10,000-14,999	89	34.6	64.2
$15,000-19,999	50	19.5	83.7
$20,000-24,999	26	10.1	93.8
≥ $25,000	16	6.2	100.0
Major Financial Support Source(s)[c]			
Financial aid	160	61.5	
Earnings from employment	71	27.3	
Parental support	50	19.2	
Savings	39	15.0	
Other	22	8.5	
Have Own Credit Cards[a]			
Yes	215	82.4	82.4
No	46	17.6	100.0
Person Paying the Largest Part of Credit Card Bill[b]			
Self (student)	172	86.4	
Parents	23	11.6	
Spouse	18	9.0	
Monthly Amount Charged[b]			
$0	3	1.5	1.5
$1-99	38	19.1	20.6
$100-199	49	24.6	45.2
$200-299	23	11.6	56.8
$300-499	33	16.6	73.4
$500 or more	50	25.1	98.5
Unknown	3	1.5	100.0

[a]Possible n of 261; actual n may vary due to item
nonresponse
[b]Possible n of 215 (respondents who had credit cards);
actual n may vary due to item nonresponse
[c]Multiple responses were possible; thus, n may be more than
261

(27.3 percent), parents (19.2 percent), and savings (15.0 percent).

A large majority of respondents had their own credit cards (82.4 percent). Of the 215 respondents currently holding credit cards, 86.4 percent stated that they paid the largest part of their credit card bills themselves. Amounts charged to credit cards monthly varied considerably. The largest percentage of respondents with credit cards charged $500 or more per month (25.1 percent), followed closely by $100-199 (24.6 percent), less than $100 (20.6 percent), $300-499 (16.6 percent), and $200-299 (11.6 percent). More than one-half of the respondents with credit cards (53.3 percent) charged $200 or more a month.

Credit Card Variables

This section addresses Objective 1: To determine graduate international students' knowledge, attitudes, experiences, practices, and satisfaction relating to credit cards.

Credit Card Knowledge

Credit card knowledge was defined in Chapter 1 as individuals' level of understanding of credit cards. A review of the literature revealed that among the American adult population credit card knowledge is relatively low

(Godwin and Carroll, 1986; Hull, 1987; Shay, 1989; Sullivan and Worden, 1991). The credit card knowledge of CSU graduate international students is shown in Tables 6 and 7, and in Appendix N in response to Research Question 1: What is the credit card knowledge of graduate international students?

A knowledge score was computed for each respondent based on the number of correct responses to the 15 knowledge statements. Scores could range from 0 (incorrect for all 15 statements) to 15 (correct for all 15 statements). The computed scores for respondents are shown in the upper portion of Table 6. The mean credit card knowledge score was 9.5, an average of 63 percent correct. The mode was 9.0 (25.6 percent of respondents obtained this score), and the range was from 5.0 to 14.0. Similar to the credit card knowledge literature discussed in Chapter 2, respondents had relatively low levels of credit card knowledge.

The lower portion of Table 6 contains scores based on how sure respondents were of their answers to the knowledge test. Scores could range from 0 (unsure for all 15 answers) to 15 (sure for all 15 answers). The sure/unsure scale ranged from a low of 0 to a high of 15, with the modal category being 7.0 or lower (52.0 percent). The mean was 7.3. Thus, respondents were generally unsure about one-half of their answers to the 15 credit card knowledge statements.

Table 6.   Credit Card Knowledge: Distribution and Percentage
of Correct and Sure Responses.

Scores	Frequency	Percent	Cumulative Percent
Correct (0-15)			
7 or lower	31	12.8	12.8
8	34	14.0	26.8
9	62	25.6	52.4
10	43	17.8	70.2
11	43	17.8	88.0
12	17	7.0	95.0
13 or higher	12	5.0	100.0
Mean (n = 242)	9.49		
Standard Deviation	1.80		
Range	5-14		
Sure (0-15)			
7 or lower	90	52.0	52.0
8	20	11.6	63.6
9	20	11.6	75.2
10	17	9.8	85.0
11	12	6.9	91.9
12	7	4.0	95.9
13 or higher	7	4.1	100.0
Mean (n = 173)	7.28		
Standard Deviation	3.10		
Range	0-15		

Attention is now directed at the individual knowledge items. Table 7 shows a ranked listing of the 15 credit card knowledge statements based on the percentages of respondents who provided correct or incorrect answers. A majority of respondents correctly answered 11 statements, while four statements were answered correctly by fewer than one-half of the respondents.

Three statements were answered correctly by more than nine of ten respondents (application--94.4 percent, use by those over 45 years--93.1 percent, and use charge--91.6 percent). Four statements were answered correctly by approximately three of four respondents (credit bureaus--77.1 percent, costly transaction as a convenience--75.7 percent, Fair Credit Reporting Act--74.1 percent, and bank cards as an open account credit--70.3 percent). Next, four statements were answered correctly by between one-half and two-thirds of the respondents (retail stores--65.3 percent, savers' benefits--57.2 percent, 30 days accounts--51.3 percent, and Truth in Lending--50.2 percent).

The remaining four statements were answered incorrectly by more than one-half of the respondents. Percentages of incorrect answers were: 61.3 percent for personal liability, 59.4 percent for dollar limits, 59.0 percent for common qualifications, and 52.4 percent for interest free loans.

Respondents were also asked how sure or unsure they were with their answer to each of the 15 statements.

Table 7. Credit Card Knowledge Statements: Percentage of Correct and Incorrect Responses with Sure and Unsure Responses.

	Statement*	Percent Correct	Percent Sure
10.	A credit card will be granted without making an application.	94.4	82.6
2.	Credit cards are used most by persons over 45 years.	93.1	65.0
9.	There is no charge for the use of any type of credit card.	91.6	86.4
11.	Credit bureaus are information sources.	77.1	50.2
3.	Using credit cards as a convenience only is a costly transaction.	75.5	66.3
13.	The U.S. Fair Credit Reporting Act provides the consumer with the right to review one's own credit file.	74.1	30.8
1.	Bank credit cards are a type of open account credit.	70.3	50.8
7.	Retail stores do not pay for the use of their customers' bank credit cards.	65.3	42.3
6.	Savers benefit from credit usage by borrowers.	57.2	37.6
5.	Thirty day or regular charge accounts include utility bills, medical services, and credit card accounts.	51.3	27.7
12.	Truth in Lending a U.S. law, establishes maximum interest rates.	50.2	16.8

Table 7. (Continued.)

	Statement[a]	Percent Correct	Percent Sure
14.	Personal liability of credit card holder when one credit card is lost or stolen is $50.	61.3	32.1
4.	Dollar limits for credit cards are set by credit bureaus.	59.4	40.8
8.	Credit card companies have common qualifications for credit card application.	59.0	59.1
15.	Credit cards can be a form of interest free loans.	52.4	61.3

[a]Possible n of 261; actual n may vary due to item nonresponse

Overall, Table 7 and Appendix N indicate that respondents were not that sure of their answers. A high of 86.4 percent stated that they were sure of their answer of false (91.6 percent) to "there is no charge for the use of any type of credit card." A low of 16.8 percent were sure of their answer of false (49.8 percent) to "Truth in lending a U.S. law, establishes maximum interest rates."

In summary, the answer to Research Question 1 is that graduate international students had relatively low levels of credit card knowledge. Knowledge levels were especially low for the statements regarding personal liability, dollar limits, common qualifications, and interest free loans. Additionally, respondents were generally unsure about their knowledge of credit cards.

Credit Card Attitudes

Credit card attitudes were defined in Chapter 1 as the beliefs, feelings, and action tendencies of individuals toward the use of credit cards. A review of the literature revealed that moderate percentages of Americans feel that the use of credit cards is good, more people view credit cards as a convenience versus an installment payment option, and Americans generally have positive attitudes toward credit cards (Crawl, 1981; Durkin, 1975; Heck, 1982; Kim, 1989). Attitudes toward credit cards held by CSU graduate international students are shown in Tables 8 and 9 in

response to Research Question 2: What are the credit card attitudes of graduate international students?

As discussed in Chapter 3, respondents were asked to respond to 22 credit card attitude statements. Responses could range from strongly disagree (1), disagree (2), neither agree or disagree (3), agree (4), to strongly agree (5). As described in Chapter 3, codes were reversed for negative attitude statements.

Table 8 presents the mean attitude scores (with a possible range of 1 to 5--strongly disagree to strongly agree) of respondents. Summing scores of respondent statements divided by number of statements responded to, produced a mean score of 3.6 (36.4 percent of respondents were in this mean category). This score was between neutral and agree. The range was 1.3 to 5.0. By categorizing the scores using one and two standard deviations below and above the mean, the favorableness/unfavorableness of respondents' attitudes toward credit cards is readily comparable. This facilitated use of the mean scores for the purpose of interpreting the range of attitudes for this study.

Table 9 displays the distribution of responses to each of the 22 credit card attitude statements. Five attitude statements were worded in the positive. By combining the strongly agree and agree or strongly disagree and disagree categories, responses to those five statements were

Table 8.   Credit Card Attitude Scores of Respondents.

Mean Scores[a] (1-5)	Frequency	Percent	Cumulative Percent
≤ 2.64	6	2.4	2.4
3.14	30	11.8	14.1
3.64	94	36.4	50.6
4.14	89	35.3	85.9
≥ 4.64	36	14.1	100.0

Mean (n = 255)	3.64
Standard Deviation	0.50
Range	1.27-5.00

[a]Mean Score ≤ 2.64 = Least favorable attitudes
         3.14 = Somewhat unfavorable attitudes
         3.64 = Neutral attitudes
         4.14 = Favorable attitudes
       ≥ 4.64 = Most favorable attitudes

Table 9. Credit Card Attitude Statements: Distribution of Responses.

Statement[a]	Key +/-	SD #	SD %	D #	D %	N #	N %	A #	A %	SA #	SA %
1. I would not enjoy using credit cards.	-	81	32.4	99	39.6	39	15.6	12	4.8	19	7.6
2. Using credit cards would tempt me to overspend.	-	41	16.2	61	24.1	53	20.9	72	28.5	26	10.3
3. Using credit cards is a bad practice.	-	83	32.7	106	41.7	49	19.3	7	2.8	9	3.5
4. Credit cards should be used for items that wear out before they are paid for.	-	68	27.5	64	25.9	92	37.2	19	7.7	4	1.6
5. I am for using credit cards.	+	16	6.4	15	6.0	74	29.7	95	38.2	49	19.7
6. Using credit cards has no disadvantages.	+	29	11.4	116	45.7	47	18.5	48	18.9	14	5.5
7. Cash is the only way to pay.	-	109	42.7	105	41.2	29	11.4	6	2.4	6	2.4
8. I am against most uses of credit cards.	-	57	22.4	133	52.4	39	15.4	19	7.5	6	2.4
9. Credit cards cost too much to use them for luxuries.	-	33	13.0	82	32.4	73	28.9	49	19.4	16	6.3
10. Credit cards make people poor money managers.	-	25	9.8	97	38.2	76	29.9	48	18.9	8	3.1
11. Using credit cards wastes money.	-	40	15.7	120	47.1	63	24.7	24	9.4	8	3.1

Table 9. (Continued.)

Statement[a]	Key +/-	SD #	%	D #	%	N #	%	A #	%	SA #	%
12. Using credit cards is not endorsed by logically minded people.	-	47	18.6	113	44.7	71	28.1	19	7.5	3	1.2
13. Credit cards are bad when used for pleasure.	-	39	15.4	103	40.6	61	24.0	40	15.7	11	4.3
14. Credit cards are good when used for necessities.	+	9	3.5	21	8.3	33	13.0	116	45.7	75	29.5
15. Using credit cards is good.	+	2	0.8	16	6.3	79	31.2	123	48.6	33	13.0
16. Using credit cards makes life a paycheck-to-paycheck survival.	-	16	6.3	73	28.9	94	37.2	58	22.9	12	4.7
17. Using credit cards has advantages.	+	4	1.6	5	2.0	20	7.8	166	65.1	60	23.5
18. Using credit cards is sinful.	-	107	43.0	78	31.3	54	21.7	7	2.8	3	1.2
19. If I use credit cards it will prevent me from saving money.	-	47	18.5	120	47.2	63	24.8	18	7.1	6	2.4
20. Using credit cards will lower one's level of living.	-	60	23.7	138	54.5	50	19.8	2	0.8	3	1.2
21. Using credit cards only benefits a few people.	-	31	12.2	129	50.6	74	29.0	15	5.9	6	2.4

Table 9. (Continued.)

Statement[a]	Key +/-	SD #	SD %	D #	D %	N #	N %	A #	A %	SA #	SA %
22. Using credit cards hampers financial progress.	-	33	13.0	110	43.5	90	35.6	*14*	*5.5*	6	2.4

[a]Possible n of 261; actual n may vary due to item nonresponse

Percentage of Response More Than 50%
Percentage of Response More Than 33%
Percentage of Response More Than 10%

generally favorable toward credit cards: "using credit cards has advantages" (88.6 percent of respondents agreed and strongly agreed with this statement), "credit cards are good when used for necessities" (75.2 percent), "using credit cards is good" (61.6 percent), and "I am for using credit cards" (57.9 percent). Only "using credit cards has no disadvantages" received less than a majority responding favorably (24.4 percent).

The remaining 17 credit card attitude statements were stated in the negative. Thus, disagreement represented a favorable attitude toward credit cards. By combining the disagree and strongly disagree categories, responses to these 17 statements varied substantially. There were seven statements favored by more than two of three respondents: "cash is the only way to pay" (83.9 percent of respondents disagreed and strongly disagreed with this statement), "using credit cards will lower one's level of living" (78.2 percent), "I am against most uses of credit cards" (74.8 percent), "using credit cards is sinful" (74.3 percent), "I would not enjoy using credit cards" (72.0 percent), and "if I use credit cards it will prevent me from saving money" (65.7 percent).

Six of the negatively presented attitude statements were supported by between one-half and slightly less than two-thirds of respondents: "using credit cards is not endorsed by logically minded people" (63.3 percent of

respondents disagreed and strongly disagreed with this statement), "using credit cards wastes money" (62.8 percent), "using credit cards only benefits a few people" (62.8 percent), "using credit cards hampers financial progress" (56.5 percent), "credit cards are bad when used for pleasure" (56.0 percent), and "credit cards should be used for items that wear out before they are paid for" (53.4 percent).

Finally, four of the negatively presented attitude statements were favored by less than a majority of respondents: "credit cards make people poor money managers" (48.0 percent of respondents disagreed and strongly disagreed with this statement), "credit cards cost too much to use them for luxuries" (45.4 percent), "using credit cards would tempt me to overspend" (40.3 percent), and "using credit cards makes life a paycheck-to-paycheck survival" (35.2 percent).

In summary, the answer to Research Question 2 is that graduate international students had favorable attitudes toward credit cards. A majority of respondents agreed that using credit cards is good. Additionally, the statement receiving the most favorable attitude (from almost nine of ten respondents) was using credit cards has advantages. These results were supported by the attitude scores computed for respondents, which were found to be favorable toward credit cards.

Credit Card Experiences

Credit card experiences were defined in Chapter 1 as the background obtained by individuals from using credit cards. A review of the literature revealed that use of credit cards, problems with credit cards, and obtaining information from parents, spouse, relatives, friends and classes all contributed to consumers' credit card experiences (Bowers, 1975; Churaman, 1988; Samuel, 1976; Sholten, 1981). The credit card experiences of CSU graduate international students are in Tables 10 and 11 and will be used to address Research Question 3: What are the credit card experiences of graduate international students?

Table 10 shows the distribution of responses to six questions used to measure credit card experiences. A vast majority of respondents had never taken a class in which consumer credit was discussed (86.0 percent). Length of credit card use varied from less than one year (20.6 percent) to more than three years (38.2 percent) among respondents who had credit cards. About one-fourth of the respondents had parents with credit cards (26.2 percent). The majority of respondents (73.1 percent) had their first experience with credit cards in the United States. Slightly more than three-fourths of the respondents planned to use credit cards after returning to their home country (78.0 percent). The majority of respondents had experienced no problem with credit cards (60.2 percent). Of the 39.8

Table 10.   Credit Card Experience Profile of Respondents.

Experience	Frequency	Percent	Cumulative Percent
Year in School Discussed Consumer Credit[a]			
Before college	13	5.1	5.1
International student orientation	5	1.9	7.0
Freshman	1	0.4	7.4
Sophomore	2	0.8	8.2
Junior	1	0.4	8.6
Senior	3	1.2	9.7
Graduate level	11	4.3	14.0
No courses	221	86.0	100.0
Length of Credit Card Use (Years)[b]			
< 1	41	20.6	20.6
1-2	46	23.1	43.7
2-3	36	18.1	61.8
> 3	76	38.2	100.0
Parents Have Credit Cards[a]	66	26.2	
Used Credit Cards Before Coming to U.S.[a]			
No	190	73.1	73.1
Yes	70	26.9	100.0
Planning to Use Credit Cards After Returning Home[a]			
Yes	195	78.0	78.0
No	55	22.0	100.0
Problems with Cards[c]			
None	153	60.2	
Bad experience or problems	101	39.8	
refused application	64		64.0
overspending	31		31.0
billing wrong	20		20.0
unauthorized charge	7		7.0
card cancelled by company	7		7.0
overindebtness	6		6.0
spending on wrong things	2		2.0

[a]Possible n of 261; actual n may vary due to item nonresponse
[b]Possible n of 215 (respondents who had credit cards); actual n may vary due to item nonresponse
[c]Multiple responses were possible; thus, n may be more than 261

percent that indicated problems (n=101), the most frequency mentioned problem was refusal of a credit card (64.0 percent), followed by overspending (31.0 percent) and wrong billing (20.0 percent). Thus, it appears that credit card experiences were positive enough to encourage future credit card use.

Table 11 includes the information sources used by respondents to learn about credit cards, in terms of "learned most," "second most," and "third most." Parents, spouse, relatives, or friends were most often mentioned as the number one source of information about credit cards (first--41.0 percent, second--17.8 percent, and third--18.7 percent, for a total of 77.5 percent). Next came credit card companies (first--24.4 percent, second--32.5 percent, and third--23.1 percent, for a total of 80.0 percent). The next two sources were used the same extent: experience through use (first--16.6 percent, second--23.4 percent, and third--35.2 percent, for a total of 75.2 percent) and books, magazines and newspapers (first--16.6 percent, second--25.4 percent, and third--19.8 percent, for a total of 61.8 percent). The choice of "classes in school" was seldom identified (first--1.5 percent, second--1.0 percent, and third--3.3 percent, for a total of 5.8 percent).

In summary, the answer to Research Question 3 is that graduate international students had limited experiences with credit cards. The majority of respondents' parents did not

Table 11. Sources Used by Respondents to Learn about Credit Cards.

Sources[a]	Learned Most		Second		Third		Total Mentions	
	#	%	#	%	#	%	#	%
Parents, spouse, relatives, or friend	84	41.0	35	17.8	34	18.7	153	77.5
Credit card companies	50	24.4	64	32.5	42	23.1	156	80.0
Experience through use	34	16.6	46	23.4	64	35.2	144	75.2
Books, magazines, and newspapers	34	16.6	50	25.4	36	19.8	120	61.8
Classes in school	3	1.5	2	1.0	6	3.3	11	5.8

[a]Possible n of 261; actual n may vary due to item nonresponse

have credit cards and the respondents had not used credit cards before their U.S. arrival. Since coming to the U.S., most of the respondents had favorable experiences with credit cards and a majority planned to use them after returning to their home country. The category of parents, spouse, relatives, or friends was mentioned most often as the source of information about credit cards.

Credit Card Practices

Credit card practices were defined in Chapter 1 as the uses of credit cards by individuals to charge purchases and repay debt. A review of the literature revealed that about one-half of U.S. college students have bank credit cards, credit cards are used by students for emergencies, school-related items, travel, long-distance telephone calls, clothing, and gasoline, and students attempt to build a credit history (Churaman, 1988; Sholten, 1981). The credit card practices of CSU graduate international students are shown in Tables 12 and 13 in developing the answer for Research Question 4: What are the credit card practices of graduate international students?

Table 12 shows frequencies and percentages for eight questions measuring credit card practices. The majority (58.9 percent) of respondents with credit cards (n=215) had one to three credit cards. The mean number of cards was 3.3. Approximately 13 percent of all respondents used credit

Table 12.   Credit Card Practices of Respondents.

Practice	Frequency	Percent	Cumulative Percent
Number of Credit Cards[b]			
1-3	123	58.9	58.9
4-6	65	31.0	89.9
≥7	21	10.1	100.0
Mean 3.30			
Standard Deviation 2.20			
Range 1-11			
Use Other's Credit Cards[a]			
Parents	10	3.9	3.9
Spouse	24	9.3	13.2
Don't use other's cards	223	86.7	99.9
Types of Credit Cards Used[d]			
Bank	184	92.5	
Store	96	48.2	
Telephone	96	48.2	
Travel or dining	65	32.7	
Gasoline	43	21.6	
Frequency of Use (Monthly)[b]			
Not at all	10	5.0	5.0
≤ 3 times	40	20.0	25.0
4 to 5 times	48	24.1	49.1
6 to 12 times	47	23.7	72.8
≥13 times	54	27.2	100.0
Items Purchased with[d] Credit Cards			
Clothing	133	67.5	
Food	125	63.5	
Travel	123	62.4	
Gasoline/auto maintenance items	108	54.8	
Education	100	50.8	
Household products	94	47.7	
Cosmetics/personal products	48	24.4	
Know Interest Rates[b]			
Always	96	48.7	48.7
Sometimes	57	28.9	77.7
Not at all	44	22.3	100.0

Table 12. (Continued.)

Practice	Frequency	Percent	Cumulative Percent
Keep Purchase Receipts[b]			
Always	124	62.3	62.3
Sometimes	59	29.6	91.9
Not at all	16	8.0	100.0
Payment of Credit Cards[b]			
Total amount due monthly	157	79.3	79.3
Depends on how much money available at time	17	8.6	87.7
More than minimum, less than total	14	7.1	94.8
Minimum monthly payment	7	3.5	98.3

[a]Possible n of 261; actual n may vary due to item nonresponse

[b]Possible n of 215 (respondents who had credit cards); actual n may vary due to item nonresponse

[d]Multiple responses were possible; thus, n may be more than 215 (respondents who had credit cards)

cards belonging to someone else. Types of credit cards reveals that bank credit cards were used most by respondents (92.5 percent of respondents with credit cards had bank credit cards), similar to data on the general population. This was followed equally by store (48.2 percent) and telephone cards (48.2 percent), then travel or dining (32.7 percent) and gasoline (21.6 percent) credit cards. Use of telephone credit cards seems to be high, perhaps because of international students' need to call family long-distance.

Respondents with credit cards were regular users of their credit cards, with a majority using them between four to more than 13 times per month (75.0 percent). Two-thirds of the respondents with credit cards indicated that their most common purchases were clothing (67.5 percent), food (63.5 percent), and travel (62.4 percent). This finding is similar to credit card purchases by other college students (Sholten, 1981). Next came gasoline/auto maintenance items (54.8 percent), education (50.8 percent), and household products (47.7 percent). Last was cosmetic and personal products (24.4 percent).

Credit card practices also include being aware of one's credit cards. Respondents with credit cards tended to know their credit cards' interest rates (77.7 percent of respondents always or sometimes knew interest rates). A majority of respondents with credit cards always kept purchase receipts (62.3 percent), with fewer sometimes

keeping purchase receipts (29.6 percent). More than three of four respondents with credit cards paid the total amount due on their credit cards monthly (79.3 percent), a recommended practice. Only 3.5 percent of respondents with credit cards regularly paid the minimum monthly amount.

An additional question addressing credit card practices focused on the primary purposes of credit card use (Table 13). Similar to the results of other research efforts, convenience (74.0 percent of respondents with credit cards) was selected as the most important purpose of credit card use more often than installment payments (most important purpose--2.5 percent). All of the respondents to this question mentioned convenience as an important purpose of credit card use, compared to a total of 30.6 percent mentioning installment payments as the most, second most, or third most important use. Emergency use (most important purpose--12.5 percent, second important purpose--27.1 percent, and third important purpose--34.3 percent, for a total of 73.9 percent) and delaying payment from purchase to payment due date (most important purpose--9.0 percent, second important purpose--27.1 percent, and third important purpose--21.9 percent, for a total of 66.8 percent) were also important purposes for use of credit cards. Social reputation (18.1 percent total mentions) and cash loans (10.5 percent total mentions) were not considered primary purposes of credit cards by respondents.

Table 13. Primary Purposes of Credit Card Use Identified by Respondents.

Purposes[b]	Most Important Purpose		Second Important Purpose		Third Important Purpose		Total Mentions	
	#	%	#	%	#	%	#	%
Convenience	148	74.0	35	18.2	14	7.9	197	100.1
Emergency	25	12.5	52	27.1	61	34.3	138	73.9
Delay payment from date of purchase to payment due date	18	9.0	69	35.9	39	21.9	126	66.8
Installment payments	5	2.5	27	14.1	25	14.0	57	30.6
Social reputation	3	1.5	6	3.1	24	13.5	33	18.1
Cash loan	1	0.5	3	1.6	15	8.4	19	10.5

[b]Possible n of 215 (respondents who had credit cards); actual n may vary due to item nonresponse

In summary, the answer to Research Question 4 is that graduate international students had credit cards and were regular users of those cards. Bank cards were used most often and the items most often purchased with credit cards were clothing, food, and travel. Overall, the majority of respondents reported following good credit card practices by knowing interest rates, keeping purchase receipts, paying off the total monthly amount, and using credit cards primarily as a convenience.

Credit Card Satisfaction

Credit card satisfaction was defined in Chapter 1 as the overall level of approval expressed by individuals with their use of credit cards. Most studies have found that Americans have relatively high levels of credit card satisfaction. The credit card satisfaction of CSU graduate international students is shown in Table 14 to address Research Question 5: What is the credit card satisfaction of graduate international students?

Table 14 displays frequencies and percentages of responses to two questions measuring credit card satisfaction, both using a six-point scale ranging from satisfied (1) to dissatisfied (5) with a "not sure" response category. Approximately three of four respondents with credit cards were satisfied or somewhat satisfied with how they managed their spending with credit cards (76.9

Table 14. Credit Card Satisfaction of Respondents.

Satisfaction	Frequency	Percent	Cumulative Percent
Manage Spending with Credit Cards	-		
Satisfied	90	45.2	45.2
Somewhat satisfied	63	31.7	76.9
So So	26	13.1	89.9
Somewhat dissatisfied	5	2.5	92.5
Dissatisfied	4	2.0	94.5
Not sure	11	5.5	100.0
Mean (n=199)	2.01		
Standard Deviation	1.32		
Current Use of Credit Cards			
Satisfied	113	56.5	56.5
Somewhat satisfied	49	24.5	81.0
So So	25	12.5	93.5
Somewhat dissatisfied	6	3.0	96.5
Dissatisfied	2	1.0	97.5
Not sure	5	2.5	100.0
Mean (n=200)	1.75		
Standard Deviation	1.12		

percent). Only 4.5 percent of these respondents were
somewhat dissatisfied or dissatisfied with managing spending
with credit cards. The mean satisfaction level was 2.0,
indicating satisfaction with managing spending with credit
cards.

A slightly higher level of satisfaction was expressed
for current use of credit cards. More than one-half of the
respondents with credit cards stated that they were
satisfied with their current use of credit cards (56.5
percent), with an additional 24.5 percent stating that they
were somewhat satisfied. Only 4.0 percent were somewhat
dissatisfied with their current use of credit cards. The
mean satisfaction level was 1.8, indicating satisfaction
with current use of credit cards.

In summary, the answer to Research Question 5 is that
graduate international students were relatively satisfied
with how they managed spending with credit cards and with
their current use of credit cards. These results are
similar to those found in previous research on credit card
satisfaction.

Relationships among Credit Card Variables

This section addresses Objective 2: To examine the
relationships among graduate international students'
knowledge, attitudes, experiences, practices, and overall

satisfaction relating to credit cards. In considering this objective, Research Question 6 is also addressed: What are the relationships among graduate international students' credit card knowledge, attitudes, experiences, practices, and satisfaction?

Based on the literature reviewed in Chapter 2, it is expected that credit card experiences are associated with higher levels of credit card knowledge. Credit problems (a form of credit card experience) are associated with higher levels of credit card knowledge. Higher levels of credit card knowledge are associated with a higher use of credit cards. Poor practices relating to the use of credit cards are associated with unfavorable attitudes toward credit cards, and favorable credit card attitudes are associated with higher credit card use. All of the above relationships found in the literature are tested in this section as part of addressing Research Question 6. Based on correlation analysis, the results are shown in Tables 15, 16, 17, and 18.

Relationships between Credit Card Knowledge and Credit Card
Attitudes, Experiences, Practices, and Satisfaction

Table 15 shows Pearson correlation coefficients and their probabilities for the relationships between credit card knowledge scores and the other four credit card variables (attitudes, experiences, practices, and

Table 15. Correlations between Knowledge of Credit Cards
and Credit Card Attitudes, Experiences,
Practices, and Satisfaction.

Variable	Knowledge Score	
	r	p
Attitudes		
Attitude score	.152	.018*
Experiences		
Length of credit cards used	-.109	.196
Year in school consumer credit discussed	.002	.965
Credit card use before coming to U.S.	-.078	.222
Problems with credit cards	.016	.794
Parents have credit cards	.002	.970
Experience score	-.125ᵗ	.144
Practices		
Number of credit cards	-.014	.840
Types of credit cards used	-.026	.721
Items purchased with credit cards	-.067	.366
Monthly amount charged	-.044	.554
Payment of credit cards	.017	.817
Know interest rates	-.164ᵗ	.026*
Keep purchase receipts	-.008ᵗ	.908
Satisfaction		
Satisfaction score	-.234ᵗ	.001*

*P<.05
ᵗ These correlations are interpreted as positive due to the
   coding procedure

satisfaction). As shown in the table, the correlation coefficients between knowledge of credit cards and the other four credit card variables varied from -.234 to .152. The negative signs of the correlations between credit card knowledge and credit card attitudes, experiences, practices, and satisfaction are due to the method in which the data were coded (Appendix I).

The relationship between knowledge scores and attitude scores was positive and statistically significant (r = .152), suggesting that as respondents' knowledge of credit cards increased, attitudes toward credit cards were more favorable. A detailed description of the relationship between credit card knowledge scores and attitude scores is shown in the cross-tabulation in Appendix O.

The correlations between credit card knowledge and the five items of credit card experiences were relatively small, with correlation coefficients ranging from .002 to -.109. A correlation coefficient was also calculated for the relationship between knowledge scores and experience scores. The experience scores were determined by summing the five experience items for respondents. The correlation coefficient for this relationship was -.125. There was no statistically significant relationship between credit card knowledge scores and experience scores.

The relationships between credit card knowledge and practices as indicated by correlation coefficients are also

shown in Table 15. The only statistically significant relationship between credit card knowledge and practices was knowing about the interest rates of one's cards. The correlation coefficient was negative (r = -.164), based on using a scale of one (always) to three (not at all) to code knowing of interest rates (Appendix I). Thus, higher knowledge scores were associated with respondents being more likely to know the interest rates charged on their credit cards.

The relationship between credit card knowledge and satisfaction with credit cards is also shown in Table 15. The satisfaction score was the mean of the summed respondents' scores to the two satisfaction items. The correlation coefficient between the knowledge and satisfaction scores was negative and statistically significant (r = -.234). The negative sign for the satisfaction score was due to the coding procedure (ranging from 1 for satisfied to 5 for dissatisfied). Therefore, respondents with higher levels of knowledge were more likely to be satisfied with their use of credit cards.

Relationships between Credit Card Attitudes and Credit Card Experiences, Practices, and Satisfaction

Table 16 shows Pearson correlation coefficients and their probabilities for the relationships between credit

Table 16. Correlations between Attitudes toward Credit Cards and Credit Card Experiences, Practices, and Satisfaction.

Variable	Attitude Score	
	r	p
Experiences		
Length of credit cards used	-.066	.421
Year in school consumer credit discussed	-.034	.591
Credit card use before coming to U.S.	-.144	.021*
Problems with credit cards	.016	.799
Parents have credit card	-.148	.018*
Experience score	-.034[t]	.681
Practices		
Number of credit cards	-.002	.971
Types of credit cards used	-.028	.697
Items purchased with credit cards	-.024	.733
Monthly amount charged	.061	.396
Payment of credit cards	-.004	.956
Know interest rates	-.105[t]	.147
Keep purchase receipts	-.058[t]	.424
Satisfaction		
Satisfaction score	-.164[t]	.022*

*$P<.05$
[t] These correlations are interpreted as positive due to the coding procedure

card attitudes and the remaining three credit card variables (experiences, practices, and satisfaction). As shown in the the table, the attitude score was associated with only two of the six credit card experiences. Significant relationships existed between attitudes and usage of credit cards before coming to the U.S. ($r = -.144$) and parents having credit cards ($r = -.148$). These relationships suggest that respondents had more favorable attitudes toward credit cards if they had used credit cards before coming to the U.S. and if their parents had credit cards.

Correlations between credit card attitude scores and credit card practices were all relatively low, ranging from $-.002$ to $-.105$. None were statistically significant. Thus, in this study there was no association between credit card attitudes and practices.

The correlation coefficient between the credit card attitude score and the credit card satisfaction score is also shown in Table 16. The correlation coefficient was $-.164$ and statistically significant. Based on the coding procedure, this correlation means that more favorable attitudes toward credit cards by respondents were associated with greater credit card satisfaction.

Relationships between Credit Card Experiences and Credit
Card Practices and Satisfaction

Table 17 shows the Pearson correlation coefficients
and their probabilities for the relationships between credit
card experiences and the remaining two credit card variables
(practices and satisfaction). The experience item most
associated with practices was length of time using credit
cards. This variable was significantly correlated with
number of credit cards owned ($r = .381$). In general, as the
length of time using credit cards increased, the number of
credit cards owned also increased. The length of time using
cards was also significantly correlated with types of credit
cards held by respondents ($r = -.273$), indicating that types
of credit cards owned by respondents were influenced by how
long they had used credit cards. The correlation between
length of time using credit cards and monthly amount charged
was $-.188$. The negative correlation coefficient between
these two variables suggests that as length of time using
credit cards increased, the amount charged per month
decreased. A statistically significant correlation also
existed between length of time using credit cards and
knowing the interest rates charged on one's credit cards
($r = .248$), indicating that as the length of time using
credit cards increased, knowledge of interest rates charged
on one's credit cards decreased.

Table 17. Correlations between Credit Card Experiences and Credit Card Practices and Satisfaction.

| | Experiences | | | | | | | | | | |
| | Length of Credit Cards Used | | Year in School Consumer Credit Discussed | | Credit Card Use Before Coming to U.S. | | Problems With Credit Cards | | Parents Have Credit Cards | | Experience Score | |
Variable	r	p	r	p	r	p	r	p	r	p	r	p
Practices												
Number of credit cards	-.381	.000*	.018	.791	.024	.724	-.096	.166	.092	.187	-.196	.021*
Types of credit cards used	-.273	.001*	.015	.831	-.046	.514	-.149	.036*	.118	.096	-.068	.410
Items purchased with credit cards	-.138	.090	-.006	.924	.084	.243	-.168	.018*	.111	.119	-.001	.990
Monthly amount charged	-.188	.020*	.126	.078	-.042	.546	-.079	.268	.006	.929	.044	.592
Payment of credit cards	-.149	.066	.118	.100	-.106	.134	-.511	.476	-.099	.164	-.062	.454
Know interest rates	.248	.002*	-.004'	.948	.157	.027*	.070	.330	.179	.012*	.274	.000*
Keep purchase receipts	.035	.665	.001	.990	.118	.119	-.102'	.151	.093	.191	.062	.453
Satisfaction												
Satisfaction score	.102	.212	.068	.340	.213	.002*	-.102'	.149	-.006'	.922	.130	.116

*P<.05

' These correlations are interpreted as positive due to the coding procedure

No significant relationships between year in school in which consumer credit was discussed and any of the credit card practices were detected. The relationship between credit card use before coming to the U.S. and knowledge of interest rates charged on one's credit cards was statistically significant (r = .157). There was also a statistically significant relationship between credit card use before coming to the U.S. and credit card satisfaction (r = .213). It appears that respondents who had used credit cards before coming to the U.S. were more likely to know their cards' interest rates and were more satisfied with using credit cards.

Significant relationships between number of problems with credit cards and types of credit cards and items purchased with credit cards among respondents were detected (Table 17). The significant negative correlation between number of problems with credit cards and the types of credit cards (r = -.149) suggests that as number of problems increased, there was a decrease in the types of credit cards used by respondents. The significant negative relationship (r = - .168) between number of problems with credit cards and the items purchased with credit cards indicates that respondents experiencing problems charged fewer items on their cards as opposed to respondents with no credit card problems.

A significant relationship was found between parents having credit cards and knowledge of credit card interest rates (r = .179), with respondents having greater knowledge of interest rates if their parents had credit cards. Additionally, significant relationships existed between credit card experience scores and number of credit cards (r = -.196) and knowledge of interest rates (r = .274). Thus, as respondents gained credit card experiences they tended to own more credit cards and to be more aware of interest rates charged on their credit cards.

Relationships between Credit Card Practices and Credit Card Satisfaction

Table 18 shows the Pearson correlation coefficients and their probabilities for the relationships between credit card practices and the variable of credit card satisfaction. Significant relationships were found between satisfaction scores and monthly amount charged (r = -.172), payment of credit cards (r = .185), knowing interest rates (r = .236), and keeping of purchase receipts (r = .216).

The significant negative relationship between monthly amount charged and satisfaction scores suggests that as the monthly amount charged increased, credit card satisfaction decreased. The positive relationship between payment of credit cards and satisfaction suggests that respondents

Table 18. Correlations between Credit Card Practices and Credit Card Satisfaction.

Variable	Number of Cards		Types used		Items Purchased		Monthly Amount Charged		Payment of Charges		Know Interest Rates		Keep Purchase Receipts	
	r	p	r	p	r	p	r	p	r	p	r	p	r	p
Satisfaction														
Satisfaction scores	-.008[t]	.908	-.021[t]	.765	-.006[t]	.352	-.172[t]	.014*	.185	.009*	.236	.001*	.216	.002*

*P < .05

[t] These correlations are interpreted as positive due to the coding procedure

associated greater amounts paid with credit card
satisfaction. The significant positive relationships
between satisfaction scores and knowing of interest rates
and keeping of purchase receipts suggest that respondents
following these recommended credit card practices had higher
satisfaction scores.

In answer to Research Question 6, there were several
relationships among the five credit card variables. Of the
94 correlation coefficients in Tables 15-18, a total of 21
(22 percent) were statistically significant.

Relationships between Socio-Demographic Characteristics and Credit Card Variables

This section addresses Objective 3: To examine the
relationships between the socio-demographic characteristics
of graduate international students and knowledge, attitudes,
experiences, practices, and satisfaction relating to credit
cards. In considering this objective, Research Question 7
is also assessed: What are the relationships between the
socio-demographic characteristics of graduate international
students and the credit card measures of knowledge,
attitudes, experiences, practices, and satisfaction?

Based on the literature reviewed in Chapter 2, credit
card knowledge is positively associated with higher income,
higher education, younger age, and being male. Attitudes

toward credit cards are positively associated with higher income, higher education, and younger age. Credit card practices are positively associated with higher income, higher education, younger age, and being married (ABA Banking Journal, 1987; Brandt, et al., 1975; Canner and Cyrnak, 1986; Churaman, 1988; Crawl, 1981; Durkin, 1975; Heck, 1982; Mandell, 1973; Yeo, 1991). Unfortunately, the socio-demographic variables studied in previous research do not all correspond to measurement in this study. For example, in this study expenses are used as an alternative for income.

The relationships between the socio-demographic variables and credit card knowledge, attitudes, experiences, practices, and satisfaction are summarized in Table 19. No statistically significant Pearson correlation coefficients between credit card knowledge scores or attitude scores were detected with any of the socio-demographic variables. Thus, socio-demographic characteristics did not appear to be associated with credit card knowledge or attitudes.

Home country categorized by per capita income from 1 (low-income) to 4 (high-income) was found to be significantly correlated with the credit card experience variables. Home country was correlated ($r = -.172$) with length of credit card use; thus, respondents from lower-income countries had more credit card experiences since

Table 19. Correlations between Socio-Demographic Variables and Credit Card
Knowledge, Attitudes, Experiences, Practices, and Satisfaction.

	Socio-Demographic Characteristics											
Credit Card Variables	Country		Length of Residency		Age		Gender		Marital Status		Expenses	
	r	p	r	p	r	p	r	p	r	p	r	p
Knowledge score	.010	.881	.036	.575	.026	.693	.045	.485	.121	.059	-.029	.654
Attitude score	.027	.660	-.055	.384	-.100	.118	.045	.471	-.001	.982	.010	.876
Experiences												
Length of credit card use	-.172	.032*	-.526	.000*	-.138	.096	.171	.034*	-.127	.117	-.184	.023*
Year in school consumer credit discussed	-.008	.892	.176	.005*	.046	.466	-.044	.418	.076	.225	.028	.652
Credit card use before come to U.S.	-.395	.000*	.092	.142	-.052	.414	.048	.438	.006	.920	-.266	.000*
Problems with credit cards	-.070	.268	-.053	.402	-.012	.851	-.026	.682	-.048	.448	-.039	.533
Parents have credit cards	-.272	.000*	-.023	.728	.074	.236	-.007	.906	.001	.990	-.202	.001*
Experience score	-.296ᵗ	.000*	-.164ᵗ	.046*	.002	.981	.052	.526	-.030ᵗ	.717	-.236ᵗ	.004*

Table 19.   (Continued.)

Socio-Demographic Characteristics

Credit Card Variables	Country		Length of Residency		Age		Gender		Marital Status		Expenses	
	r	p	r	p	r	p	r	p	r	p	r	p
Practices												
Number of credit cards	-.034	.631	.104	.136	-.061	.388	-.007	.920	.016	.814	.004	.952
Types of credit cards	-.080	.260	.143	.044*	-.040	.585	.004	.950	.012	.870	-.044	.532
Items purchased with credit cards	-.156	.028*	.168	.019*	.083	.256	.004	.950	.001	.987	.068	.344
Monthly amount charged	-.011	.875	.164	.021*	.163	.023*	-.034	.627	.132	.063	.093	.194
Payment of credit cards	-.022	.726	.081	.261	.060	.410	-.118	.096	.013	.856	.022	.752
Know interest rate	.056	.432	-.061ᵗ	.400	.062	.393	.077	.281	.006	.922	-.061ᵗ	.826
Keep purchase receipts	-.143ᵗ	.045*	-.008ᵗ	.909	.072	.316	-.034ᵗ	.633	.105	.140	.002	.982
Satisfaction												
Satisfaction score	.020	.775	.069	.332	.022	.761	.004	.946	-.084ᵗ	.236	.020	.783

*P < .05

ᵗ These correlations are interpreted as positive due to the coding procedure

arriving in the U.S. than those from higher-income countries. Home country was significantly correlated with the use of credit cards by graduate international students before coming to the U.S. (r = -.395) with respondents from higher-income countries more likely to have used credit cards before coming to the U.S. Home country was significantly correlated with whether parents of respondents had credit cards (r = -.272). This relationship indicates that respondents' parents were more likely to have credit cards if they lived in higher-income countries. The overall experience score was also significantly correlated with home country (r = -.296).

Home country was also significantly correlated with two credit card practice variables: items purchased with credit cards (r = -.156) and keeping purchase receipts (r = -.143). These relationships suggest that respondents from lower-income countries purchased more items with their credit cards and that they were more likely to keep purchase receipts as compared to respondents from higher-income countries.

Length of residency was found to be highly correlated with the credit card experience variable of length of credit card use (r = -.526). As length of residency increased, credit card experiences also increased. Length of residency was also significantly correlated with year in school in which consumer credit was discussed (r = .176). As students

lived in the U.S. for a long period of time, they were more likely to become exposed to consumer credit in a class situation. The credit card overall experience score was significantly correlated with length of residency ($r = -.164$), indicating that respondents gained credit card experiences the longer they lived in the U.S.

In addition, length of residency was significantly correlated with some of the credit card practice variables (Table 19). The significant relationship between length of residency and types of credit cards ($r = .143$) suggests that as respondents spent more time in the U.S., they accumulated more types of credit cards. Significant relationships were also found between length of residency and items purchased with credit cards ($r = .168$) and monthly amount charged ($r = .164$). Thus, the longer the length of residency in the U.S., the higher the number of different items purchased and the higher the monthly amount charged.

Age was not found to be correlated with credit card knowledge, attitudes, or experiences. However, age was significantly correlated with the credit card practice variable of monthly amount charged ($r = .163$) (Table 19). Generally, older respondents charged more on a monthly basis as opposed to younger respondents.

The socio-demographic variable of gender was not significantly correlated with credit card knowledge, attitudes, or practices. However, gender was significantly

correlated with length of credit card use (r = .171). Given
that gender was coded as "1" for male and "2" for female,
females had used credit cards longer than males. The annual
expenses among respondents were found to be significantly
correlated with length of credit card use (r = -.184),
credit card use before coming to the U.S. (r = -.266),
parents having credit cards (r = -.202), and experience
scores (r = -.234). Generally, respondents who had higher
expenses per year seem to have more experience with and more
use of credit cards than those respondents who spent less
money.

In answer to Research Question 7, several relationships
between socio-demographic characteristics and the five
credit card variables were statistically significant. Based
on the data reported in Table 19, 18 correlation
coefficients (19 percent) were found to be statistically
significant out of a total of 96 correlations.

Testing the Conceptual Model and Null Hypotheses

This section addresses Objective 4: To test a
conceptual model that uses socio-demographic
characteristics, along with credit card knowledge,
attitudes, experiences, and practices to explain
satisfaction with credit cards. In considering this
objective, Research Question 8 is also addressed: How well

can credit card satisfaction of graduate international students be explained by using a conceptual model in which socio-demographic characteristics, credit card knowledge, credit card experiences, and credit card attitudes are considered as input, credit card practices are considered as throughput, and credit card satisfaction is considered as output? To answer this research question, it is important to first test the null hypotheses based on the conceptual model.

Null Hypothesis Testing

Both null hypotheses were tested using Pearson correlation analysis. Since all tested relationships are bivariate ones, it seems appropriate to use Pearson correlations. As stated in Chapter 3:

Null Hypothesis 1: There will be no significant relationships between the four input variables and the variable designated as throughput in the conceptual model. Specifically, there will be no significant relationships between:

1.1 knowledge and practices,

1.2 attitudes and practices,

1.3 experiences and practices, and

1.4 socio-demographics and practices.

A summary of the correlation coefficients between the four input variables and credit card practices is shown in

Table 20. A total of nine statistically significant correlation coefficients (14 percent) out of 63 correlations are contained in Table 20: knowledge scores with knowing interest rates ($r = -.164$); experience scores with number of cards ($r = -.196$) and knowing interest rates ($r = .247$); country category with items purchased ($r = -.156$) and keeping purchase receipts ($r = -.143$); length of residency with types of cards used ($r = .143$), items purchased ($r = .168$) and monthly amount charged ($r = .164$); and age with monthly amount charged ($r = .163$). The existence of these significant relationships provides evidence to reject Null Hypothesis 1.1, 1.3, and 1.4. Hypothesis 1.2 is accepted.

As stated in Chapter 3:

Null Hypothesis 2: There will be no significant relationship between the throughput variable and the variable designated as output in the conceptual model.

A summary of the correlation coefficients between credit card practices and the credit card satisfaction score are shown in Table 18. The satisfaction score was significantly associated with monthly amount charged ($r = -.172$), payment of credit cards ($r = .185$), knowing of interest rates ($r = .236$), and keeping purchase receipts ($r = .216$). Thus, Null Hypothesis 2 is rejected.

Table 20. Summary of Null Hypothesis 1 Testing.

Variable	Number of Cards		Types Used		Items Purchased		Monthly Amount Charged		Payment of Charges		Know Interest Rates		Keep Purchase Receipts	
	r	p	r	p	r	p	r	p	r	p	r	p	r	p
Knowledge score	-.014	.840	-.026	.721	-.067	.366	-.044	.554	.017	.817	-.164	.026*	-.008	.908
Attitude score	-.002	.971	-.028	.697	-.024	.733	.061	.396	-.004	.956	-.105	.147	-.058	.424
Experience score	-.196ᵗ	.021*	-.068ᵗ	.410	-.001ᵗ	.990	.044	.592	-.062ᵗ	.454	.247	.000*	.062	.453
Socio-Demographics														
Country	-.034	.631	-.080	.260	-.156	.028*	-.011	.875	-.022	.726	.056	.432	-.143	.045*
Length of Residency	.104	.136	.143	.044*	.168	.019*	.164	.021*	.081	.261	-.061	.400	-.008	.909
Age	-.061	.388	-.040	.585	.083	.256	.163	.023*	.060	.410	.062	.393	.072	.316
Gender	-.007	.920	.004	.950	.004	.950	-.034	.627	-.118	.096	.077	.281	-.034	.633
Marital Status	.016	.814	.012	.870	.001	.987	.132	.063	.013	.856	.006	.992	.105	.140
Expenses	.004	.952	-.044	.532	.068	.344	.093	.194	.022	.752	-.061	.826	.002	.982

*$P < .05$

ᵗ These correlations are interpreted as positive due to the coding procedure

Testing of Revised Conceptual Model

Canonical correlation analysis was used to test the revised conceptual model presented in Chapter 2. Results of the canonical correlation analysis are shown in Figure 4 and Appendices P, Q, R, and S.

The canonical correlations in the left side of Figure 4 show the interrelationships between each of the four input variables (knowledge, attitudes, experiences, and socio-demographics) and the throughput variable (practices) of the model. Appendix P presents the contributions made by the individual items of each input variable to the canonical variates.

Figure 4 indicates that there were no statistically significant interrelationships between the set of 15 credit card knowledge items and the set of eight credit card practices (r_c = .414), the set of 22 credit card attitude statements and practices (r_c = .568), and the set of six socio-demographic characteristics and practices (r_c = .364). Thus, the input variables of credit card knowledge, credit card attitudes, and socio-demographic characteristics were not found to be good predictors of credit card practices.

Such a finding does not conform to previous research results reported in the literature. However, it should be pointed out that graduate international students (at least at Colorado State University) are a relatively homogeneous population, with limited differences on many of the socio-

Figure 4. Testing of the proposed model.
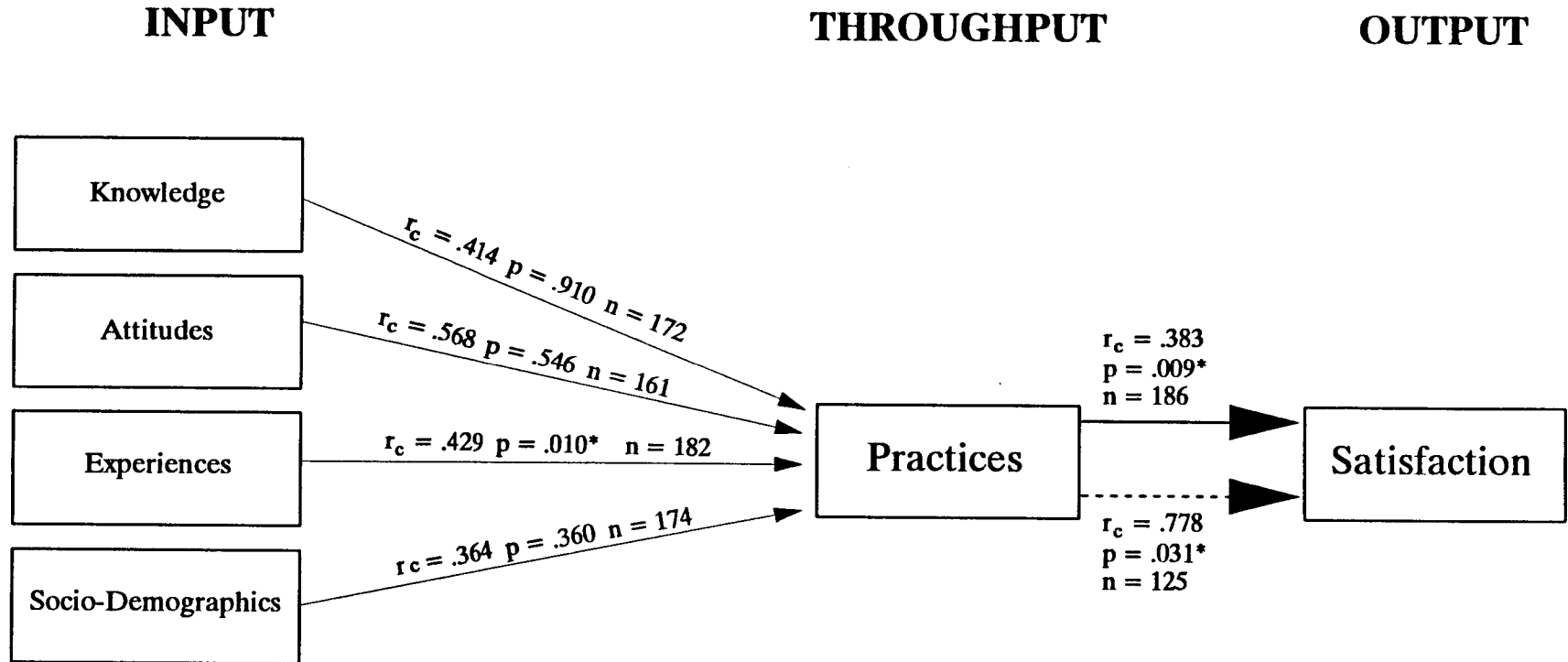
demographic characteristics. The distribution of responses reported earlier relating to credit card knowledge and attitudes were also quite limited. The relative homogeneity of these input variables of this selected group of students could be expected to restrict the size of computed canonical correlations.

The only statistically significant canonical correlation between input and throughput in the model was found between the set of five credit card experiences and the set of eight credit card practices (r_c = .429). An examination of the canonical correlations in Appendix P suggests that length of time using credit cards (Q14), problems with using credit cards (Q19) and parents' possession of credit cards (Q30) were the primary experiences involved in this interrelationship, while types of credit cards most frequently used (Q2), repayment practices (Q7) and average monthly dollar amount charged (Q5) were the major components of credit card practices. Therefore, it appears that the variable of credit card experiences was a good predictor of credit card practices. This interrelationship is supported by the literature.

The right side of Figure 4 shows the canonical correlation between the set of eight credit card practices and the set of two credit card satisfaction questions (r_c = .383). Appendix S reveals that awareness of interest rates for credit card use (Q8), repayment practices (Q7),

and average monthly dollar amount charged (Q5) were the primary credit card practices involved in this interrelation. Thus, the variable of credit card practices was a good predictor of credit card satisfaction. As reported in Chapter 2, no previous studies examined the relationship between credit card practices and satisfaction. Given the homogeneity of respondents, particularly regarding the high percentage of respondents who were satisfied with credit cards, a canonical correlation of .383 was quite respectable.

Appendices Q and R show the canonical correlations when different combinations of variable sets are considered. The input variables had little predictive value regarding credit card satisfaction when practices were not used as throughput (Appendix Q). However, when the input variables and practices were considered together, in relationship to satisfaction, a statistically significant canonical correlation of .778 was found (Appendix R). This canonical correlation is reported in the lower right-hand side of Figure 4, and is the maximum r_c in the model.

The results of canonical correlation analysis answer Research Question 8 by providing support for the use of Deacon and Firebaugh's (1988) model with the studied variables to explain credit card satisfaction. In fact, the variables used in the model explained 14 percent ($R^2_c = .146$) of the variation in credit card satisfaction. Feedback in

the model could not be determined, as a longitudinal study would be necessary to examine changes over time.

CHAPTER 5

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

In this final chapter, a summary of the research will first be presented. Based on the data collected and analyzed, implications will then be discussed. Finally, recommendations for future research will be provided.

Summary

The purpose of this study was to examine graduate international students' knowledge, attitudes, experiences, practices, and satisfaction relating to credit cards. The sample was selected from graduate international students attending Colorado State University during Summer, 1992. Data were obtained from a six-page questionnaire with five main sections: 1) credit card practices, 2) credit card experiences, 3) credit card attitudes, 4) credit card knowledge, and 5) socio-demographic characteristics. The questionnaires were distributed to 623 students at their department addresses using campus mail. A postcard reminder was mailed to 592 nonrespondents' local home addresses. Finally, a follow-up questionnaire with a return envelope was mailed to 411 nonrespondents at their local home

addresses. The questionnaire return rate was 46.2 percent
(n=261).

Eight research questions were answered and two null
hypotheses were tested. The data were analyzed using
descriptive statistics, Pearson correlation analyses, and
canonical correlation analyses with the Statistical Analysis
System (SAS). A confidence level of P<.05 was chosen as the
criterion for statistical significance.

Description of Respondents

The majority of graduate international students who
returned completed questionnaires were male (73.4 percent),
married (51.2 percent), and had an average age of 31.2
years. The majority of respondents had lived in the U.S.
from one to four years (68.6 percent) with the mean length
of residency being 2.7 years. Respondents were from 55
countries, representing every continent.

Four-fifths of the respondents had their own credit
cards. Monthly amounts charged varied, with the majority of
respondents with credit cards charging $100-199 (24.6
percent) or more than $500 (25.1 percent). For amounts
charged, 86.4 percent stated they paid the largest part of
their credit card bills themselves. Annual spending by
graduate international students varied widely with a large
majority of respondents (64.2 percent) spending $14,999 or

less.   Approximately six of ten respondents received
financial aid.

Credit Card Knowledge

The credit card knowledge level of respondents was
relatively low. A credit card knowledge score was computed
for each respondent based on the number of correct responses
to 15 knowledge statements. The mean score was 9.5.
Respondents were also asked how sure or unsure they were of
each item answer. Results indicated that the majority of
respondents (52.0 percent) were unsure about their answers.

Statistically significant relationships were found
between credit card knowledge scores and credit card
attitudes, practices, and satisfaction. The relationship
between knowledge and attitudes suggests that as knowledge
of credit cards increased, favorableness of attitudes toward
credit cards also increased. The relationship between
knowledge and experiences was not statistically significant.
The majority of respondents (73.1 percent) did not have
credit cards before coming to the U.S. and a large majority
of respondents (86.3 percent) had never taken a class in
which consumer credit was discussed. A significant
relationship between knowledge and practices was found. The
findings suggest that as knowledge increased, the likelihood
of knowing interest rates on one's cards also increased.
Finally, the results indicate that as knowledge increased,

respondents had greater satisfaction in their use of credit cards.

Credit Card Attitudes

Graduate international students tended to have favorable attitudes toward credit cards. The majority of respondents (85.8 percent) had attitude scores 3.64 or greater (on a five-point scale) which suggest that respondents had favorable attitudes toward credit cards. The findings were similar to those reported by previous research.

Significant relationships existed between attitude scores and the variables of using credit cards before coming to the U.S. and parents having credit cards. The results suggest that attitudes toward credit cards were more favorable if respondents used credit cards before coming to the U.S. and/or if respondents' parents had credit cards. A significant relationship existed between credit card attitude scores and credit card satisfaction scores. More favorable attitudes toward credit cards were associated with greater credit card satisfaction.

Credit Card Experiences

The large majority of graduate international students had no experience using credit cards before coming to the U.S. (73.1 percent) and had not taken any classes in school

in which consumer credit was discussed (86.0 percent). For the 215 respondents having credit cards, length of credit card use varied from less than one year (20.6 percent) to more than three years (38.2 percent). The source of information from which students indicated that they learned most about credit cards was the category of parents, spouse, relatives, and friends. Respondents indicated that credit card companies were a second source for credit card information.

A significant relationship existed between credit card experiences and practices. The relationship showed that as the length of credit card use increased, more types of credit cards were used, the number of credit cards owned was greater, monthly amount charged increased, and the likelihood of knowing interest rates on cards also increased. The relationships between credit card use before coming to the U.S. and knowing interest rates, along with credit card satisfaction, suggested that if respondents used credit cards before coming to the U.S., the likelihood of knowing interest rates and satisfaction increased. The significant relationships found between problems with credit cards and types of credit cards used and items purchased with credit cards, indicated that as problems with credit cards increased, types of credit cards used and number of items purchased with credit cards decreased. The relationship between parents having credit cards and knowing

interest rates was higher if respondents' parents owned credit cards.

Credit Card Practices

Nearly four-fifths of graduate international students had personal credit cards, usually one to three cards. Only 34 of the respondents reported using credit cards belonging to parents or spouse. The most frequent type of credit card used by respondents was bank cards (92.5 percent of respondents with credit cards). Items purchased by most respondents using credit cards were clothing, food, and travel. Fifty percent of students with credit cards claimed to always know the cards' interest rates. Nearly 64 percent of the respondents with credit cards always kept purchase receipts. The vast majority of respondents (79.3 percent of respondents with credit cards) paid the total amount due on their credit card bills monthly. Respondents with credit cards reported credit card purposes in order of importance (first, second, and third purposes) as convenience (74.0 percent), delay payment from date of purchase to payment due date (35.9 percent), and emergency use (34.3 percent).

A statistically significant association existed between credit card practices and satisfaction scores. Significant relationships were found between satisfaction scores and monthly amounts charged, payment of credit card bills, knowing card interest rates, and keeping purchase receipts.

These findings suggest that credit card satisfaction was associated with greater monthly amounts charged, greater amount of payment, awareness of interest rates, and keeping purchase receipts.

Credit Card Satisfaction

The majority (76.9 percent) of respondents with credit cards reported they were either satisfied or somewhat satisfied with how they managed their spending with credit cards. Eight-one percent stated that they were satisfied or somewhat satisfied with their current use of credit cards. Based on a six-point scale, mean scores were 2.0 and 1.8, respectively. Statistically significant relationships were found between credit card satisfaction and credit card knowledge, attitudes, experiences, and practices.

Testing of Model

A model was tested to explain credit card satisfaction. Two null hypotheses were developed based on the model; null hypothesis 1.1, 1.3, and 1.4 were rejected, null hypothesis 1.2 was accepted. Null hypothesis 2 was also rejected based on the findings. Results revealed that there were statistically significant relationships between the input variables and the throughput variable, and between the throughput variable and the output variable. Based on canonical correlation analysis, it was found (1) that credit

card experiences influenced credit card practices and (2)
credit card practices influenced credit card satisfaction.
The model explained 14 percent of the variation in credit
card satisfaction.

Implications

Before this study, limited information was available on
credit card use by college students. Studies explored
discretionary income, number and types of credit cards,
common credit card purchases, credit card knowledge and
attitudes, and desire to obtain credit cards. Studies
reported in the literature have not distinguished between
U.S. national and international students. Thus, there was
no information on the topic of credit cards and
international students attending U.S. colleges and
universities.

This study was an effort to investigate credit cards as
related to international students. As an initial effort, it
would be best to consider the results as baseline data with
limited generalizability. This study was based on a
graduate international student sample from one university.
Results need to be supported by additional research with a
broader spectrum of international students.

Implications based on the results of this study will
now be presented with regard to four groups impacted by

credit card use of international students: (1) the
international students themselves, (2) issuers of credit
cards, (3) providers of credit card education and services,
and (4) researchers.

International Students

Graduate international students surveyed in this study
represented 55 countries and every continent. There was
considerable diversity among respondents based on socio-
demographic characteristics. Generally, the majority of
graduate international students came to Colorado State
University with limited credit card experiences.
Approximately three-fourths of the respondents had their
first experiences with credit cards after their arrival in
the U.S. Based on the knowledge test, credit card knowledge
was relatively low. Low knowledge levels and limited credit
card experiences prompt concern about the likelihood of
overspending and misuse of credit cards by international
students. Although a minority, some respondents reported
being refused credit cards or overspending by using credit
cards. Additionally, a few respondents had a credit card
canceled, reported overindebtedness, or stated that they
purchased the wrong things with their cards.

It is important for international students to obtain
information about credit cards before they actually begin
using credit cards. This might be provided by programs

developed for an international student orientation with the cooperation of international student offices, consumer education programs, and credit card companies. Such programs should include how to choose the credit card that best fits their needs (e.g., no or low annual fee, low interest rates, and long grace period of payment), read and fill out credit card applications, use credit cards wisely, interpret credit card bill statements, and manage any credit card debt. These are types of information needed by international students. After developing an adequate knowledge base, international students could then begin using credit cards. Given limited experience before arriving in the U.S., the use of credit cards could proceed slowly and increase over time if desired.

Respondents had favorable attitudes toward credit cards, with most agreeing that using credit cards is good and has advantages. International students should evaluate their credit card attitudes and periodically adjust their practices to conform to attitudes. The goal would be international students engaged in sound credit card practices (e.g., knowing interest rates, keeping purchase receipts, paying the total amount due monthly, and using credit cards primarily as a convenience).

Issuers of Credit Cards

As companies attempt to expand their number of credit card users and the amounts of money charged by users, potential credit card markets will be explored. International students comprise a promising market segment. As noted earlier, there is a large number of international students attending U.S. colleges and universities. These students have secured sources of income, with proof of financial support required by U.S. colleges. Many international students come from educated and well-to-do families, and will most likely obtain good jobs after returning to their home countries. Thus, internationalization efforts by issuers of credit cards can be readily accomplished by targeting international students in the U.S. as credit card users.

The findings of this study show that the majority of graduate international students had secured incomes, with more than one-half receiving financial assistance. The majority of respondents possessed credit cards, with an average of three cards per cardholder. About nine of ten respondents with credit cards used bank credit cards, either obtained by themselves or belonging to someone else. Credit card experiences were viewed favorably by respondents, with attendant positive attitudes and satisfaction regarding credit cards. Over one-half of the respondents with credit cards charged $200 or more a month. A majority of

respondents planned to use credit cards after returning to their home countries.

Given the generally responsible use of credit cards and plans to continue credit card use after graduation, credit card issuers might seriously consider making credit cards readily available and easier to obtain for this market segment. It might be possible for credit card issuers to develop specific criteria to evaluate international students' credit card applications. With recent arrival in the U.S., the international student's record may not appear as positive as it would for a U.S. student. Currently, international students may be turned down for a credit card because they are not U.S. citizens, have no credit history, or list a foreign home address. Rejection of a credit card application (64.0 percent) was the number one problem indicated by those respondents who had indicated that they had experienced some type of credit card problem (n=101). Credit card issuers could consider offering cards with low limits and then track use and payment practices before increasing credit card limits to international students.

Credit card issuers might also consider providing written information about credit cards targeted to international students. Such information could be provided with credit card applications and with the granting of cards, perhaps as brochures. This information might include rights and responsibilities of both credit card issuers and

users, realistic expectations of credit card use, and an explanation of how to read credit card bill statements.

Credit card issuers might also consider promotional tools directed at international students. Currently, many credit card issuers use brochures, direct mailings, and booths on campus to encourage college students to apply for credit cards. It is unknown if these tools are effective with international students. Credit card issuers might explore the possibility of contacting international student offices located on many college campuses about how to promote their cards to international students.

All types of information and advertising produced by credit card issuers should be based on an understanding of international students' needs. For example, should application forms be written in plain English? Complicated language in terms or conditions might be misunderstood by some international students with English as a second language, resulting in misunderstandings and possible misuse of credit cards. By explaining rights and responsibilities in easily understood language, credit card issuers might increase the likelihood of appropriate use of credit cards by international students. This would have a beneficial impact since international students might continue to use their credit cards and spread knowledge about credit cards through word-of-mouth after returning to their home countries.

Providers of Credit Card Education

It was mentioned earlier that a growing number of U.S. colleges and universities have established international student offices to meet the needs of international students. Given the low level of credit card experiences of respondents in this study, it seems reasonable to develop an education program for new international students that focuses on credit cards. Such a program might be a coordinated effort between the international student office and a consumer education program at the same college. The program could be delivered in two parts as an orientation at the beginning of the school year and at a later date to explore usage patterns and problems.

The credit card education program might be outlined as follows:

(1) Explanation of purpose: Enable international students to effectively use credit cards.

(2) What are credit cards? Discuss the different types of credit cards.

(3) What are the advantages and disadvantages of credit cards?

(4) What knowledge and skills are necessary to use credit cards? Review qualifications to obtain credit cards, personal liability limits, laws such as Truth in Lending, and calculation of interest rates.

(5) What are individuals' attitudes toward credit cards?

(6) How do individuals apply for different kinds of credit cards such as bank cards, store cards, telephone cards, etc.? Review several sample applications and have students fill one out.

(7) How should individuals read a credit card bill statement? Review sample statements.

(8) What are responsible credit card practices? Discuss good practices, such as knowing interest rates, keeping receipts, and paying the monthly amount in full.

(9) How do credit cards fit into total financial management? Discuss how to set goals, track expenses, and manage debt.

This credit card education program might also be part of a one-day financial management program or a class session in a course. Credit cards are just one tool that international students can utilize to obtain their financial goals, and students need to consider credit cards within a broad financial management perspective. The program might conclude with information about courses taught on campus that can help in developing financial management and other consumer skills. A hand-out on agencies that can be contacted if credit card questions, problems with credit cards, or other financial problems arise might also be

developed. The hand-out could even be useful without the education program as a source of non-biased information.

Researchers

The results of this study contribute to the growing knowledge base involving credit cards. Most research has focused on college students or the general U.S. population. Data on a specific population such as international students can be valuable for comparison purposes and as a data base for theory building. Perhaps the greatest need in credit card research is to develop a theory or model that explains the various aspects of credit card use. Such theory building is dependent upon data collected on different aspects of credit cards and on variables applied to different populations.

With the baseline data provided by this study, more in-depth research on international students and credit cards can be conducted. For example, will a changing composition of international students influence knowledge and practices relating to credit cards? Focusing more on country of origin and family background of international students might produce a better understanding of the five credit card variables researched in this study. A detailed comparison between U.S. and international students' credit card use might begin by using the international students' data produced by this study.

Researchers might assist credit card issuers in developing criteria for international students' qualifications for credit cards. Researchers could also work with consumer educators to develop evaluation measures relating to the effectiveness of credit card education programs delivered to international students.

Recommendations for Research

Based on the results of this study, the following recommendations for research are proposed.

(1) A broader-based study duplicating the questionnaire used in this research effort is needed. Such a study should include a representative sample of U.S. colleges and universities attended by international students, including private, land grant, and state public universities. A large sample of both graduate and undergraduate international students should be drawn. A study of this nature would provide data that could be generalized to international students in the U.S. regarding the five credit card variables measured in this study.

(2) A series of focus group sessions need to be conducted to measure the understanding of credit card information by international students.

Difficulty of terms used in credit card
applications, bill statements, and other
information sources could be ascertained from
this procedure. Revising the language until a
high level of understanding is obtained by
international students would be the desired
outcome of focus group sessions.

(3) A longitudinal study of international students
needs to be conducted to determine how these
students learn about credit cards, how credit card
attitudes, knowledge and satisfaction change over
time, and how practices relating to credit cards
change based on experiences. A group of
international students might be given a credit
card questionnaire upon entering a U.S. college,
followed by the same questionnaire each year until
returning home.

(4) A survey should be conducted on the use of credit
cards by international students after they
graduate and return to their home countries. Such
a study would provide information on how long
students use credit cards (compared to plans), how
credit card accounts can be transferred from the
U.S. to other countries, and if international
students remain loyal to certain credit cards or

card issuers. This survey could be a follow-up of the longitudinal study above.

Results of the above research recommendations should be of use to international students, credit card issuers, credit card information providers, and researchers. Most importantly, the collected data could be used to test models in an effort to develop a model or theory to better explain credit cards in relation to international students.

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APPENDICES

APPENDIX A:

Thailand Credit Card Application

Dusit
HOTELS & RESORTS
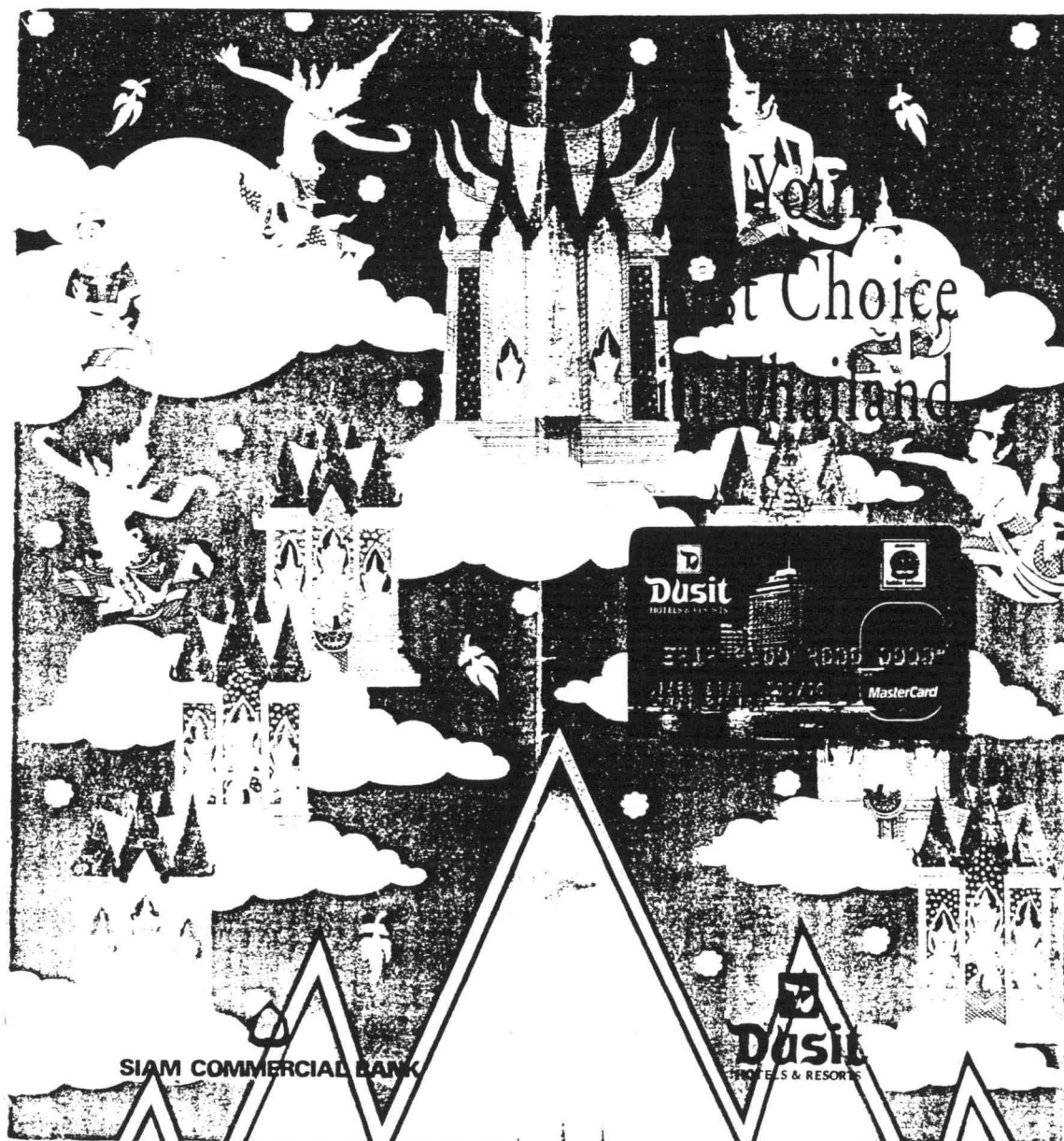
The Siam Commercial Bank, Limited
Application Form For a Credit Card

SIAM COMMERCIAL BANK

CORPORATE CREDIT DIVISION

Ref No _____
Date ___ _____

To The Manager,
The Siam Commercial Bank, Limited, _____
_____ Office Branch (The "Bank")

I would like to apply for a Dusit Card (MasterCard and Siam Commercial Bank Card (Bo Ngern Po Thong)) and related credit facilities and hereby furnish the Bank with the following information

---

●Personal Information

Name
Date of Birth   Age   yrs Nationality
Tax payer I D Card
Identification Document ☐ Passport
                        ☐ Alien I D Card
                        ☐ Work Permit
                        ☐ State Enterprise Officer Card
                        ☐ Government Officer Card
                        ☐ Other (Specify)
No   Issued by
Date of Issuance   Expiry Date

●Place of Residence

Present address No   Street   Khet/Amphur
Kwaeng/Tambon   Province   Post Code
Telephone No _____
☐ Live with relatives
☐ Rent
☐ Provided by the organization
☐ Right of Lease remaining   years
☐ Owned by self/spouse, free from any encumbrance
☐ Owned by self/spouse, under mortgage/finance
   with instalment of   Baht/month

●Education   Education Code ☐☐

Highest education obtained

●Marital Status   Marital Status Code ☐

☐ Single   ☐ Married   ☐ Divorced   ☐ Widow/Widower
Number of Dependants
Spouse's Name   Spouse's former last name

●Occupation/Income Occupation Code ☐☐ Position Code ☐☐☐

Occupation ☐ Self employed   ☐ Private Company
            ☐ Government Service ☐ Other (Specify)
Present place of employment
            Post Code   Telephone No
Number of years of employment   Position
Monthly Salary   Additional Income   Baht/month
Source
If present employment is less than 2 years, please give the name & place of previous employment   Company Code AIS
Previous place of employment
            Post Code   Telephone No
Number of years of employment   Position

●Bank/Financial Reference

Name of Bank/Financial Institution	Type of Account	Account No	Amount/Credit Line	Number of Years with Bank/Financial Institution

●Credit Card Held

Name of Credit Card   Credit Card Number
☐ SCB Credit Card
☐ MasterCard Card Issued by
☐ Visa   Card Issued by
☐ JCB
☐ American Express
☐ Diners Club
☐ Other ____

●Personal Reference

Name (Mr Mrs Ms)
Address
Relationship ☐ Father/Mother ☐ Relative
             ☐ Employer   ☐ Other (Specify)

●Payment of Debts

The Cardholder and/or the Account Owner hereby agree to pay the Bank the full amount of the debts according to the statement for collection in respect of the Credit Card as follows

☐ By cheque/ by cash
☐ by giving consent for the Bank to debit from ☐ Savings ☐ current account
No
under the name of
name of the account owner
at the Bank's Head Office   Branch

The Cardholder and/or the Account Owner hereby certifies that the information given above is correct in all respects and agrees to abide by all the terms and conditions for the use of the Credit Card as specified on the reverse side hereof including all those terms and conditions as may be hereafter prescribed by the Bank

Signed   Cardholder
(Signature identical to that appears on the Credit Card and or in the passport)

Signed   Account Owner
(Signature identical to that given in respect of the bank account)

●Mailing Address

☐ Home   ☐ Office

●Please attach these documents | **Recommended by.**

☐ Copy of a passport or other form of identification
☐ Copy of bank statement for the last 6 months
☐ Letter from an employer indicating monthly salary or payroll slip
☐ In case of self employed, copy of certificate of Registration, Ministry of Commerce

MasterCard

MORE THAN JUST A CREDIT CARD

Dusit Hotels and Resort now offers you The DUSIT CARD, a multi-function credit card you cannot afford to be without.

Issued in cooperation with Siam Commercial Bank and MasterCard International, DUSIT CARD presents to you limitless benefits and savings from these and other business

As a MASTERCARD, DUSIT CARD gives you...

- One of the world's most prestigious international credit cards with worldwide acceptance.

- Automatic cash from any Cirrus network Automatic Teller Machines worldwide using your Personal Identification Number.

As a SIAM COMMERCIAL BANK CARD, DUSIT CARD gives you...

- All of the special merchandise offers available through their Monthly Statement and Quarterly Newsletter.

- Acceptance at over 15,000 locations in Thailand along with access to the Siamnet ATM Network at over 500 locations throughout Thailand.

- Automatic accident insurance up to 3 million baht when you use your DUSIT CARD to pay for any travel ticket.

As a SOGO PRIVILEGE CARD*, DUSIT CARD gives you...

- A 5% discount for purchases in Sogo Amarin Plaza, Erawan Sogo, and any new stores which open in Thailand.

As an AVIS PRIVILEGE CARD*, DUSIT CARD gives you...

- A 30% discount on self-drive Avis car rentals anywhere throughout Thailand with further international discounts when using the Card abroad.

As a S&P PRIVILEGE CARD*, DUSIT CARD gives you...

- A 10% discount at all S&P restaurants in both Thailand and England.

As a DUSIT CARD, WE give you...

- Charge facilities in all Dusit Hotels & Resorts to save you the inconvenience of carrying cash when you stay with us.

- Recognition as our privileged guest, as it is always an honor to serve you at Dusit.

- Special Corporate room discounts as well as seasonal restaurant discounts at all Dusit Hotels and Resorts throughout Thailand.

- Monthly Dusit Newsletter providing you with information on all of the latest special programs and packages.

APPLY NOW, and save with a special first-year membership fee of only 500 baht. Take advantage of this special offer by completing the attached application form and return it to us without delay.

*Valid at least until the end of 1993.

The above conditions and privileges are subject to change at any time at the discretion of Dusit Hotels and Resorts and Siam Commercial Bank

APPENDIX   B:

Student Credit Card Applications

The Gold Card Graduate Student Application

Specially Reserved for:

Your offer is valid until:

May 31, 1991

YOUR PERSONAL DATA

Print in the boxes below how you would like your name to appear on the Gold Card. Spell last name completely. Full name must not exceed 20 spaces.

Date of Birth	Mo.	Day	Yr	Social Security Number
	/	/		— —

Billing Address (if different from above)	City	State	Zip Code

Home Phone ( )		Time There	Yrs.	Mos. /

Previous Home Address	City, State, and Zip Code	Years There

Name of Nearest Relative Not Living With You	Address

YOUR AMERICAN EXPRESS" CARDMEMBER EXPERIENCE

_ None
_ Present
_ Former

Account Number _____ — _____ — _____

YOUR SIGNATURE

X _____ Date _____

An applicant, if married, may apply for a separate account. Please see reverse side.

By signing above. I certify that I have read, met and agreed to all terms, conditions and disclosures on the reverse side of this application. The annual fee is $75 for the Gold Card. Do not enclose the fee: we will bill you later.

K1
6000

GSAXB

INTRODUCING A SPECIAL STUDENT OFFER —
THREE ROUNDTRIP AIRFARES ON CONTINENTAL AIRLINES.

From the moment you obtain the American Express* Gold Card, you are entitled to a wide range of privileges.

And, as a full-time graduate student who carries the Gold Card, you will receive special travel privileges on Continental Airlines, Inc., including:

*   *Three roundtrip savings certificates*, to any of the over 150 cities in the contiguous United States served by Continental. Fly on your side of the Mississippi for only $129 roundtrip ... or cross the Mississippi for just $189 roundtrip.

*   *Special quarterly offers* to destinations like Mexico, Hawaii, the Caribbean — at special prices.

*   *2,500 bonus miles* when you enroll in Continental's OnePass frequent flyer program and take your first flight. And, with Continental's OnePass program, you only need 20,000 miles to earn a free roundtrip ticket.

You'll receive your three certificates six weeks after your Gold Card membership is approved.* Your certificates are valid for at least 12 months from date of issue and are non-transferable.

All tickets must be charged to the Gold Card and are non-refundable. There are no blackout dates, so you can travel whenever you want. However, seat availability may be limited. Reservations must be booked within 14 days of departure. Certificates may be used for trips of up to seven days/six nights, and a Saturday night stay is required. See back panel for complete terms and conditions.

As someone who's going places, you'll value the extraordinary benefits and personal services which come only to those who carry the American Express Gold Card.

So apply today for the Gold Card. And start packing.

*Your American Express Gold Card application must be approved by 12/31/91 to be eligible for the Continental offer.

THE AMERICAN EXPRESS•GOLD CARD

The easiest credit a student can get.

As a student, you probably want to establish credit for the future. That's why, unlike most other banks, Citibank has made it easy to apply for a Visa or MasterCard.

You don't even need your parents to co-sign. All you need is a photocopy of your current validated student I.D.

And once you become a Citibank cardmember, you can use your Citibank card at over 9.0 million establishments and get cash anytime at over 64,000 Automated Teller Machines (ATMs) worldwide.

What's more, Citibank offers 24-hour customer service, 7 days a week. So you can always reach us whenever you need us.

While other banks give you the run-around, Citibank believes you should spend your time reading Catch 22. Not living it.

CITIBANK⊕

FOLD HERE ↑

Disclosure Box

Annual Percentage Rate for Purchases	19 8%
Annual Fee	$20
Grace Period for Repayment of the Balance for Purchases	20 to 25 days
Minimum Finance Charge	50¢
Method of Computing the Balance for Purchases	Average Daily Balance (including new purchases)
Transaction Fee for Cash Advances	At a financial institution, 2% of amount of advance but not less than $2 or more than $10. At an automated teller machine, $1.75.
Late Payment Fee	$15
Over-the-Credit-Limit Fee	$10

The information about the costs of the card described in this application is accurate as of June 1992. This information may have changed after that date. To find out what may have changed, write to Citibank (South Dakota), N.A., P.O. Box 6035, Hagerstown, MD 21741.

© 1992 Citibank (South Dakota), N.A. Member FDIC

HAVE YOU REMEMBERED TO INCLUDE A COPY OF YOUR VALID STUDENT ID?

NO POSTAGE NECESSARY IF MAILED IN THE U.S.

BUSINESS REPLY MAIL
FIRST CLASS MAIL   PERMIT NO 737   HAGERSTOWN, MD

POSTAGE WILL BE PAID BY ADDRESSEE

CITIBANK (SOUTH DAKOTA) NA
C/O CITICORP CREDIT SERVICES INC. (MD)
14700 CITICORP DRIVE
HAGERSTOWN MD 21749-9954

you need to establish credit but because you're a student you can't get credit from most banks until you have established credit so you need to establish credit but because you're a student you can't get credit from most banks until you have established credit so you need to establish credit but because you're a student you can't get credit from most banks until you have established credit so you need to establish credit but because you're a student you can't get credit from most banks until you have established credit so you need to establish credit but because you're a student you can't get credit from most banks until you have established credit so you need to establish credit but because you're a student you can't get credit from most banks until you have established credit so you need to establish credit but because you're a student you can't get credit from most banks until you have established credit so you need to establish credit but because you're a student you can't get credit from most banks until you have established credit so you need to establish credit but because you're a student

CATCH 22.

NO CATCH.

It's easy to apply for a Citibank Visa* or MasterCard.
To find out how, just turn the page. ▶

Select one: Citibank Classic ☐ MasterCard. or ☐ Visa*   7/92

To speed processing of your application, please complete all sections below. Write N/A for any items that do not apply to you.

Please tell us about yourself

Print Full Name - First, Middle Initial, Last		Social Security Number	Your Date of Birth (Month/Day/Year)
Your Permanent Home Address	Apt No	City or Town	State	Zip
Mother's Maiden Name	Your Permanent Area Code and Phone Number ( )	First and Last name under which permanent phone is listed with Directory Assistance

Please tell us about your college/university

Full Name of College/University (Please do not abbreviate)	Branch/Campus	Official School Zip
Your Mailing Address at School (if different from Permanent Address)	Apt No	City or Town	State	Your Zip
Your Area Code and Phone Number at School ( )	First and Last Name under which school phone is listed with Directory Assistance

Your Class ☐ Fresh ☐ Junior ☐ Grad ☐ Other   ☐ Soph ☐ Senior ☐ Faculty/Staff   Expected Graduation Date (Mo) (Yr)   Permanent U.S. Resident ☐ Yes ☐ No   Address to which you want your card and billing statement mailed ☐ Permanent ☐ School

Important Information

Savings Account (Joint or Individual)	☐ Yes ☐ No Bank Name	Acceptable Sources of income Yearly Income $ _____	☐ Allowance from Parents ☐ Savings ☐ Stipend	☐ Salary ☐ Summer Job ☐ Wages
Checking Account (Joint or Individual)	☐ Yes ☐ No Bank Name	*You do not have to include spouse's income, alimony, child support or separate maintenance payments paid if you are not relying on them to establish creditworthiness. Financial aid and tuition are not acceptable as sources of income		
Money Market Account/ Interest-Bearing Checking Account (Joint or Individual)	☐ Yes ☐ No Bank Name	Name of Employer (Present, Future or Previous/Summer) Employer Area Code and Phone Number ( ) _____		

Verification

Please include a legible copy of one of the following: ☐ VALIDATED Student ID for current semester   ☐ Tuition bill for current semester

Your application cannot be processed without this information and will be substantially delayed if you omit any information requested. (Be sure the copy shows your name, the date and your current enrollment status. Photocopy both sides if necessary).

Please sign this authorization

By signing below I authorize Citibank (South Dakota) N A to check my credit history and exchange information about how I handle my account with proper persons, affiliates and with credit bureaus if I am issued a card. I authorize my employer, my bank and any other references listed above to release and/or verify information to Citibank (South Dakota) N A and its affiliates in order to determine my eligibility for the Citibank Classic credit card and any future extensions of credit. If I ask, I will be told whether or not consumer reports on me were requested and the names of the credit bureaus with their addresses that provided the reports. If I designate any authorized users, credit bureaus may receive and report accounting information in the authorized user's name. I certify that I am 18 years of age or older, and that the information provided is accurate. I understand that if I use the card or authorize

its use or do not cancel my account within 30 days after I receive the card, the Citibank Agreement sent to me with the card will be binding on me. I have read and understand the attached disclosure too.

In order to be considered for a Citibank MasterCard or a Citibank Visa card you must complete and sign this application. Omission of any of the information requested in this application may be grounds for denial. I certify that I have read and understand the disclosure box on the back. Please do not send payment of $20 annual fee; you will be billed later.

1CKNW 0428L 31088 888Q

X _____
Applicant's Signature   Date

APPENDIX C:

Questionnaire

CREDIT CARDS :

BUY NOW AND PAY LATER?

A STUDY OF CREDIT CARDS
AND INTERNATIONAL STUDENTS

YOUR HELP WITH THIS EFFORT IS GREATLY APPRECIATED!
PLEASE USE THE BACK PAGE FOR COMMENTS OR TO ADD DETAIL.

THANK YOU!

CREDIT CARD PRACTICES

Directions: Please check ( ) the appropriate blank(s) as the following information applies to you. Read all directions carefully.

1. a. Do you have any credit cards in your own name now?

    ____ Yes (If yes, how many credit cards do you have in your own name? ____ cards)

    ____ No

   b. Do you have permission to use anyone else's credit card(s)?

    ____ Yes (If yes, what is that person's relationship to you? _____)

    ____ No (If no both a. and b., go to question 16)

2. Please check all the types of credit cards you use

    ____ Store credit cards (i.e., Sears, Penneys)

    ____ Bank credit cards (i.e., Visa, Mastercard, Discover card)

    ____ Gasoline credit cards (i.e., Texaco, Chevron)

    ____ Travel or dining cards (i.e., American Express, Diners Club, JCB)

    ____ Telephone cards (i.e., AT&T, Sprint)

3. Check the item(s) you purchase most frequently with your credit card(s)

    ____ Clothing

    ____ Household products

    ____ Cosmetics/personal hygiene products

    ____ Food

    ____ Gasoline or auto maintenance items

    ____ Travel

    ____ Education (i.e., books)

4. Altogether, check how often you have used credit card(s) in the past month:

____ Not at all	____ 4 to 5 times
____ Once	____ 6 to 8 times
____ Twice	____ 9 to 12 times
____ 3 times	____ 13 times or more

5. On the average, check how much you charge on your card(s) each month:

____ $0	____ $200 - 299
____ $1 - 24	____ $300 - 499
____ $25 -49	____ $500 or more
____ $50 - 99	____ I don't know
____ $100 - 199	

6. Check who provides the money to pay all or the largest part of your credit card bill(s):

    ____ I do

    ____ Spouse

    ____ Parent(s)

    ____ Other relative

    ____ Friend

7. Check how you usually pay the amounts due on your credit card(s):

    ____ Pay total amount due (outstanding balance) each month

    ____ Pay minimum monthly payment

    ____ Pay more than the minimum but less than the total

    ____ It depends on how much money I have at the time

    ____ I do not know

8. When you use credit card, do you know the rate of interest you will paying?
    ____ Always
    ____ Sometime
    ____ Not at all

9. Do you keep receipts/bills for credit card purchases?
    ____ Always
    ____ Sometime
    ____ Not at all

10. Do you have a written list or information file of your credit cards?
    ____ Yes, all of them
    ____ Some of them
    ____ No, none

11. Generally, what is your primary purpose of credit card use? Please rank
    the three most important purposes (1 to 3; 1 indicating the most
    important purpose)

	1. Convenience
most important purpose	2. Installment payments
	3. Delay payment from date of purchase to payment due date
second important purpose	4. Emergency
	5. Cash loan
third important purpose	6. Social reputation

12. How satisfied are you with how credit cards help you manage your spending?
    ____ Satisfied
    ____ Somewhat satisfied
    ____ So So
    ____ Somewhat dissatisfied
    ____ Dissatisfied
    ____ Not sure

13. How satisfied are you with your current use of credit cards?
    ____ Satisfied
    ____ Somewhat satisfied
    ____ So So
    ____ Somewhat dissatisfied
    ____ Dissatisfied
    ____ Not sure

14. How long have you used credit cards?
    ____ Less than 6 months
    ____ 6 months to 12 months
    ____ 13 months to 24 months
    ____ 25 months to 36 months
    ____ Longer than 3 years

CREDIT CARD EXPERIENCES

<u>Directions</u>: **Please check ( ) the appropriate blank(s) as the following information applies to you.**
Read all directions carefully.

15. **Where have you learned about consumer credit? Please <u>rank</u> the <u>three</u> areas that you have learned most about consumer credit: (1 to 3; 1 indicating the most important area)**

        Learned most   1. Classes in school

                                2. Reading books, magazines and newspapers

        Second learned most   3. Information from parents, spouse, relatives, or friends

                                4. Information from credit card companies

        Third learned most   5. Experiences through the use of credit cards

16. **When did you have classes in school that discussed consumer credit?**
Please answer by placing a <u>check(s)</u> beside when you had the class or received the information.

    ____ Before College

        In college/at university

            ____ International Student Orientation

            ____ New student orientation

            ____ Freshman

            ____ Sophomore

            ____ Junior

            ____ Senior

            ____ Graduate level

    ____ Did not have any classes

17. **Did you use credit cards before you came to the U.S.?**

    ____ Yes

    ____ No (If no, why do you use credit cards now? _____)

18. **Do you plan to use credit cards after you return to your country?**

    ____ Yes

    ____ No

19. **Have you ever had bad experiences or problems in using credit cards?**

    ____ Yes (If yes, please <u>Check</u> which one(s))

            ____ Spending on wrong things

            ____ Over spending

            ____ Overindebtness

            ____ Credit card canceled by company

            ____ Other persons make unauthorized charge(s)

            ____ Billing wrong

            ____ Refused application to receive a credit card

    ____ No

CREDIT CARD ATTITUDES

20. <u>Directions</u>: The statements below describe the use of credit cards where installment payments (periodic payment on your credit bill) may be made and interest paid. Indicate the extent of your agreement and disagreement with each statement by <u>circling</u> the response which best reflects your opinion.

SD = STRONGLY DISAGREE
D = DISAGREE
N = NEITHER AGREE OR DISAGREE
A = AGREE
SA = STRONGLY AGREE

SD	D	N	A	SA	1. I would not enjoy using credit cards.
SD	D	N	A	SA	2. Using credit cards would tempt me to overspend.
SD	D	N	A	SA	3. Using credit cards is a bad practice.
SD	D	N	A	SA	4. Credit cards should be used for items that wear out before they are paid for.
SD	D	N	A	SA	5. I am for using credit cards.
SD	D	N	A	SA	6. Using credit cards has no disadvantages.
SD	D	N	A	SA	7. Cash is the only way to pay.
SD	D	N	A	SA	8. I am against most uses of credit cards.
SD	D	N	A	SA	9. Credit cards cost too much to use them for luxuries.
SD	D	N	A	SA	10. Credit cards make people poor money managers.
SD	D	N	A	SA	11. Using credit cards wastes money.
SD	D	N	A	SA	12. Using credit cards is not endorsed by logically minded people.
SD	D	N	A	SA	13. Credit cards are bad when used for pleasure.
SD	D	N	A	SA	14. Credit cards are good when used for necessities.
SD	D	N	A	SA	15. Using credit cards is good.
SD	D	N	A	SA	16. Using credit cards makes life a paycheck-to-paycheck survival.
SD	D	N	A	SA	17. Using credit cards has advantages.
SD	D	N	A	SA	18. Using credit card is sinful.
SD	D	N	A	SA	19. If I use credit cards it will prevent me from saving money.
SD	D	N	A	SA	20. Using credit cards will lower one's level of living.
SD	D	N	A	SA	21. Using credit cards only benefits a few people.
SD	D	N	A	SA	22. Using credit cards hampers financial progress.

IDEAS ABOUT CREDIT CARD

21. <u>Directions</u>: The following statements explore your ideas of credit cards. Circle T if you believe that the statement is true and F if the statement is false. Then tell me how sure you are of your response—you are sure <u>or</u> unsure. Circle S if you are sure and circle US if you are unsure.

<u>TRUE</u>	<u>FALSE</u>		<u>SURE</u>	<u>UNSURE</u>
T	F	1. Bank credit cards are a type of open account credit.	S	US
T	F	2. Credit cards are used most by persons over 45 years.	S	US
T	F	3. Using credit cards as a convenience only is a costly transaction.	S	US
T	F	4. Dollar limits for credit cards are set by credit bureaus.	S	US
T	F	5. Thirty day or regular charge accounts include utility bills, medical services, and credit card accounts.	S	US
T	F	6. Savers benefit from credit usage by borrowers.	S	US
T	F	7. Retail stores do not pay for the use of their customers'bank credit cards.	S	US
T	F	8. Credit card companies have common qualifications for card application.	S	US
T	F	9. There is no charge for the use of any type of credit card.	S	US
T	F	10. A credit card will be granted without making an application.	S	US
T	F	11. Credit bureaus are information sources.	S	US
T	F	12. Truth in Lending a U.S. law, establishes maximum interest rates.	S	US
T	F	13. The U.S. Fair Credit Reporting Act provides the consumer with the right to review one's own credit file.	S	US
T	F	14. Personal liability of credit card holder when one credit card is lost or stolen is $50.	S	US
T	F	15. Credit cards can be a form of interest free loans.	S	US

SOCIO - DEMOGRAPHIC INFORMATION

Directions: Please check ( ) or fill in the appropriate blank(s) as the following information applies to you. Read all directions carefully.

22. Write in the country where you come from: _____

23. Write in the length of your residency in the United States:_____ years _____months

24. Please indicate your age to your nearest birthday:_____years

25. <u>Check</u> your gender: _____ Male _____ Female

26. <u>Check</u> your marital status:
    _____ Never married
    _____ Married first time
    _____ Remarried
    _____ Separated
    _____ Divorced
    _____ Widowed

27. Is your spouse with you in the U.S?
    _____ Yes
    _____ No
    _____ do not have a spouse/not applicable

28. Do you have children under 18 living with you in the U.S?
    _____ Yes
    _____ No
    _____ Have no children

29. <u>Check</u> the major source(s) of your financial support:
    _____ Parental support
    _____ Earnings from employment during the school year (including work study)
    _____ Financial aid (grant, loan, scholarship, assistantship)
    _____ Savings
    _____ Other (please specify)_____

30. Do your parents have credit cards?
    _____ Yes
    _____ No
    _____ Do not know

31. Approximately how much money do you spend in a year while attending CSU?
    _____ Less than $5,000
    _____ $5,000 - $9,999
    _____ $10,000 - $14,999
    _____ $15,000 - $19,999
    _____ $20,000 - $24,999
    _____ $25,000 - $29,999
    _____ $30,000 or more

Is there anything we may have overlooked? Please use this space for any additional comments you would like to make about this survey.

THANK YOU!

APPENDIX D:

Memorandum to Departmental Secretaries

Colorado State University

Memorandum

To: Departmental Secretary

From: Dr. Carole J. Makela (Professor) Redacted for privacy
Betty F. Shoemaker (Foreign Student Adviser)
Tapin Punjavat (Graduate Student) Redacted for privacy

   This is a study on International Students' knowledge, Attitudes, and Use of Credit Cards for Tapin's Ph.D. dissertation. This study requires the participation of all currently enrolled international students in your department.

   In order for the results to truly represent CSU international students, it is important that each questionnaire be completed and returned promptly.

   We would greatly appreciate it if you would take a few minutes of your time to distribute these questionnaires to the students (their name are on the envelopes) in your usual way of getting mail to your graduate students. It was necessary to use labels with home addresses, we do not expect you to mail these to students' homes. If students are not available please return these envelopes to me (Tapin Punjavat) promptly at Consumer Sciences, 153 Aylesworth.

   If you or your graduate students have question please call Tapin at 482-4763. A copy of the cover letter to the graduate students is attached for your information.

P.S.   Your cooperation is greatly appreciated.

APPENDIX   E:

Cover Letter for Initial Mailout

Colorado State University

Consumer Sciences
Aylesworth Hall
Fort Collins, Colorado 80523

Credit Card Study
June 17, 1992

Hello,

I am Tapin Punjavat, a M.S. graduate from Colorado State University and now a doctoral student at Oregon State University. I am doing this study on International Students' Knowledge, Attitudes, and Use of Credit Cards for my Ph.D. dissertation. CSU's International Office is cooperating in this effort. This study will provide useful information for programs related to the future use of credit cards by international students either in the U.S. or after returning home.

Your name was selected from the list of international students who are currently enrolled at CSU. In order for the results to truly represent CSU international students and their understanding credit cards, it is important that each questionnaire be completed and returned.

I would like you to take a few minutes to complete the enclosed questionnaire. The questionnaire will take about 10 minutes to complete. Please do it as soon as possible, as I am most anxious to complete this part of the study.

You may be assured of complete confidentiality. The questionnaire has an identification number for mailing purposes only. This way I can check your name off the mailing list when your questionnaire is returned. Your name will not be placed on the questionnaire or used in the analysis or subsequent reports and dissertation.

After you complete the questionnaire, please mail it back via campus mail or give it back to your departmental secretary.

I would be most happy to answer any questions you might have. Please call me at 482-4763.

Thank you for your help.

Sincerely,
Redacted for privacy

Tapin Punjavat
Researcher

APPENDIX F:

Postcard Reminder

Credit Card Study
Consumer Sciences
Aylesworth Hall
Colorado State University
Fort Collins, CO 80523

Wira Panichkul
999 West Plum # 99
Ft. Collins, Co 80523

July 1992

Credit Card Study

Two week ago a survey entitled "Credit Cards" was mailed to you at your department. Your name was selected from the CSU listing of international students. If you have completed and returned the questionnaire, **thank you very much**. If not, please do so today. It is extremely important that your responses be included in the study.

If by chance you did not receive the survey, or it got misplaced, please call me at 482-4763, and I will send you another one.

Sincerely,
Redacted for privacy

Tapin Punjavat
Researcher

APPENDIX G:

Cover Letter for Follow-Up

Colorado State University

Consumer Sciences
Aylesworth Hall
Fort Collins, Colorado 80523

Credit Card Study
July 9, 1992

Hello Again,

About three weeks ago I wrote to you seeking your opinions on credit cards. As of today, I have not received your completed questionnaire. This study will provide useful information for programs related to the future use of credit cards by international students either in the U.S. or after returning home.

I am writing to you again because of the significance each questionnaire has for the usefulness of this study. Your name was selected from the list of international students that are currently enrolled at CSU. In order for the results of this study to be representative of international students, it is essential that each person including you return the questionnaire.

In the event that your questionnaire has been misplaced, a replacement is enclosed. Please fill out the questionnaire and mail it back in campus mail (no postage needed), or give it back to your departmental secretary to put in campus mail.

I would be most happy to answer any questions you might have. Please call me at 482-4763.

Thanks for all your help!

Cordially,

Redacted for privacy

Tapin Punjavat
Researcher (doctoral student)

P.S. If it is easier to use the postal services, you will need to add a stamp before mailing it.

APPENDIX   H:

Data Collection Effort

Data Collection Effort

Time Frame	Disposition of Questionnaires			
	Returned Complete	Returned Incomplete	Not Deliverable	Called to Ask Question
Week 1 (Initial mailout June 17, 1992, to N = 623)	97	4	31	7
Week 2 (Postcard reminder June 30, 1992, to N = 592)	23	0	0	18
Week 3	53	1	6	9
Week 4 (Follow-up questionnaire July 8, 1992, to N = 411)	57	1	7	1
Week 5/Week 6 (Survey completed August 3, 1992)	23	0	14	1
Total	261	6	58	36

APPENDIX I:

Coding

CREDIT CARD PRACTICES

Directions: Please check ( ) the appropriate blank(s) as the following information applies to you. Read all directions carefully.

1. a. Do you have any credit cards in your own name now?

(1-2) __1__ Yes (If yes, how many credit cards do you have in your own name? #__#__#__ cards)
        __2__ No

   b. Do you have permission to use anyone else's credit card(s)?   Parent = 1

(1-2) __1__ Yes (If yes, what is that person's relationship to you? Spouse = 2 _____)
        __2__ No (If no both a. and b., go to question 16)

2. Please check all the types of credit cards you use
        ____ Store credit cards (i.e., Sears, Penneys)
        ____ Bank credit cards (i.e., Visa, Mastercard, Discover card)   Check = 1
        ____ Gasoline credit cards (i.e., Texaco, Chevron)   No check = 2
        ____ Travel or dining cards (i.e., American Express, Diners Club, JCB)
        ____ Telephone cards (i.e., AT&T, Sprint)

3. Check the item(s) you purchase most frequently with your credit card(s)
        ____ Clothing
        ____ Household products
        ____ Cosmetics/personal hygiene products
        ____ Food   Check   = 1
        ____ Gasoline or auto maintenance items   No check = 2
        ____ Travel
        ____ Education (i.e., books)

4. Altogether, check how often you have used credit card(s) in the past month:

        __1__ Not at all   __5__ 4 to 5 times
        __2__ Once   __6__ 6 to 8 times
(1-8) __3__ Twice   __7__ 9 to 12 times
        __4__ 3 times   __8__ 13 times or more

5. On the average, check how much you charge on your card(s) each month:

        __1__ $0   __6__ $200 - 299
        __2__ $1 - 24   __7__ $300 - 499
(1-9) __3__ $25 -49   __8__ $500 or more
        __4__ $50 - 99   __9__ I don't know
        __5__ $100 - 199

6. Check who provides the money to pay all or the largest part of your credit card bill(s):
        ____ I do
        ____ Spouse   Check = 1
        ____ Parent(s)   No check = 2
        ____ Other relative
        ____ Friend

7. Check how you usually pay the amounts due on your credit card(s):
        __1__ Pay total amount due (outstanding balance) each month
        __2__ Pay minimum monthly payment
(1-5) __3__ Pay more than the minimum but less than the total
        __4__ It depends on how much money I have at the time
        __5__ I do not know

8. When you use credit card, do you know the rate of interest you will paying?

(1 - 3)
__1__ Always
__2__ Sometime
__3__ Not at all

9. Do you keep receipts/bills for credit card purchases?

(1 - 3)
__1__ Always
__2__ Sometime
__3__ Not at all

10. Do you have a written list or information file of your credit cards?

(1 - 3)
__1__ Yes, all of them
__2__ Some of them
__3__ No, none

11. Generally, what is your primary purpose of credit card use? Please rank the three most important purposes (1 to 3; 1 indicating the most important purpose)

(1 - 6)   most important purpose

(1 - 6)   second important purpose

(1 - 6)   third important purpose

1. Convenience
2. Installment payments
3. Delay payment from date of purchase to payment due date
4. Emergency
5. Cash loan
6. Social reputation

12. How satisfied are you with how credit cards help you manage your spending?

(1 - 6)
__1__ Satisfied
__2__ Somewhat satisfied
__3__ So So
__4__ Somewhat dissatisfied
__5__ Dissatisfied
__6__ Not sure

13. How satisfied are you with your current use of credit cards?

(1 - 6)
__1__ Satisfied
__2__ Somewhat satisfied
__3__ So So
__4__ Somewhat dissatisfied
__5__ Dissatisfied
__6__ Not sure

14. How long have you used credit cards?

(1 - 5)
__1__ Less than 6 months
__2__ 6 months to 12 months
__3__ 13 months to 24 months
__4__ 25 months to 36 months
__5__ Longer than 3 years

CREDIT CARD EXPERIENCES

<u>Directions</u>: Please check ( ) the appropriate blank(s) as the following information applies to you. Read all directions carefully.

15. Where have you learned about consumer credit? Please <u>rank</u> the <u>three</u> areas that you have learned most about consumer credit: (1 to 3; 1 indicating the most important area)

(1 - 5) Learned most   1. Classes in school

                                    2. Reading books, magazines and newspapers

(1 - 5) Second learned most   3. Information from parents, spouse, relatives, or friends

                                    4. Information from credit card companies

(1 - 5) Third learned most   5. Experiences through the use of credit cards

16. When did you have classes in school that discussed consumer credit?
     Please answer by placing a <u>check(s)</u> beside when you had the class or received the information.

          _1_ Before College

             In college/at university

                _2_ International Student Orientation

(1-9)   _3_ New student orientation

                _4_ Freshman

                _5_ Sophomore

                _6_ Junior

                _7_ Senior

                _8_ Graduate level

       _9_ Did not have any classes

17. Did you use credit cards before you came to the U.S.?

(1 - - 2) _1_ Yes

         _2_ No (If no, why do you use credit cards now? _____)

18. Do you plan to use credit cards after you return to your country?

(1 - 2) _1_ Yes

         _2_ No

19. Have you ever had bad experiences or problems in using credit cards?

       _1_ Yes (If yes, please <u>Check</u> which one(s))

(1 - 2)   ____ Spending on wrong things

                  ____ Over spending   Check = 1

                  ____ Overindebtness   No check = 2

                  ____ Credit card canceled by company

                  ____ Other persons make unauthorized charge(s)

                  ____ Billing wrong

                  ____ Refused application to receive a credit card

       _2_ No

CREDIT CARD ATTITUDES

20. <u>Directions</u>: The statements below describe the use of credit cards where installment payments (periodic payment on your credit bill) may be made and interest paid. Indicate the extent of your agreement and disagreement with each statement by <u>circling</u> the response which best reflects your opinion.

SD = STRONGLY DISAGREE
D = DISAGREE
N = NEITHER AGREE OR DISAGREE   (1-5)
A = AGREE
SA = STRONGLY AGREE

1	2	3	4	5	
SD	D	N	A	SA	1. I would not enjoy using credit cards.
SD	D	N	A	SA	2. Using credit cards would tempt me to overspend.
SD	D	N	A	SA	3. Using credit cards is a bad practice.
SD	D	N	A	SA	4. Credit cards should be used for items that wear out before they are paid for.
SD	D	N	A	SA	5. I am for using credit cards.
SD	D	N	A	SA	6. Using credit cards has no disadvantages.
SD	D	N	A	SA	7. Cash is the only way to pay.
SD	D	N	A	SA	8. I am against most uses of credit cards.
SD	D	N	A	SA	9. Credit cards cost too much to use them for luxuries.
SD	D	N	A	SA	10. Credit cards make people poor money managers.
SD	D	N	A	SA	11. Using credit cards wastes money.
SD	D	N	A	SA	12. Using credit cards is not endorsed by logically minded people.
SD	D	N	A	SA	13. Credit cards are bad when used for pleasure.
SD	D	N	A	SA	14. Credit cards are good when used for necessities.
SD	D	N	A	SA	15. Using credit cards is good.
SD	D	N	A	SA	16. Using credit cards makes life a paycheck-to-paycheck survival.
SD	D	N	A	SA	17. Using credit cards has advantages.
SD	D	N	A	SA	18. Using credit card is sinful.
SD	D	N	A	SA	19. If I use credit cards it will prevent me from saving money.
SD	D	N	A	SA	20. Using credit cards will lower one's level of living.
SD	D	N	A	SA	21. Using credit cards only benefits a few people.
SD	D	N	A	SA	22. Using credit cards hampers financial progress.

IDEAS ABOUT CREDIT CARD

21. <u>Directions</u>: The following statements explore your ideas of credit cards. Circle T if you believe that the statement is true and F if the statement is false. Then tell me how sure you are of your response—you are sure <u>or</u> unsure. Circle S if you are sure and circle US if you are unsure.

	1	2			1	2
(1-2)	<u>TRUE</u>	<u>FALSE</u>		(1-2)	<u>SURE</u>	<u>UNSURE</u>
	T	F	1. Bank credit cards are a type of open account credit.		S	US
	T	F	2. Credit cards are used most by persons over 45 years.		S	US
	T	F	3. Using credit cards as a convenience only is a costly transaction.		S	US
	T	F	4. Dollar limits for credit cards are set by credit bureaus.		S	US
	T	F	5. Thirty day or regular charge accounts include utility bills, medical services, and credit card accounts.		S	US
	T	F	6. Savers benefit from credit usage by borrowers.		S	US
	T	F	7. Retail stores do not pay for the use of their customers' bank credit cards.		S	US
	T	F	8. Credit card companies have common qualifications for card application.		S	US
	T	F	9. There is no charge for the use of any type of credit card.		S	US
	T	F	10. A credit card will be granted without making an application.		S	US
	T	F	11. Credit bureaus are information sources.		S	US
	T	F	12. Truth in Lending a U.S. law, establishes maximum interest rates.		S	US
	T	F	13. The U.S. Fair Credit Reporting Act provides the consumer with the right to review one's own credit file.		S	US
	T	F	14. Personal liability of credit card holder when one credit card is lost or stolen is $50.		S	US
	T	F	15. Credit cards can be a form of interest free loans.		S	US

SOCIO - DEMOGRAPHIC INFORMATION

<u>Directions:</u> Please check ( ) or fill in the appropriate blank(s) as the following information applies to you. Read all directions carefully. `Low-income=1;Upper-middle-income=3`

22. Write in the country where you come from: `Lower-middle-income=2;High-income=4`

23. Write in the length of your residency in the United States: `##` years `##` months

24. Please indicate your age to your nearest birthday: `##` years

25. <u>Check</u> your gender: __1__ Male __2__ Female (1 - 2)

26. <u>Check</u> your marital status:

__1__ Never married
__2__ Married first time
__3__ Remarried
(1 - 6) __4__ Separated
__5__ Divorced
__6__ Widowed

27. Is your spouse with you in the U.S?

__1__ Yes
(1 - 3) __2__ No
__3__ do not have a spouse/not applicable

28. Do you have children under 18 living with you in the U.S?

__1__ Yes
(1 - 3) __2__ No
__3__ Have no children

29. <u>Check</u> the major source(s) of your financial support:

____ Parental support
____ Earnings from employment during the school year (including work study)
____ Financial aid (grant, loan, scholarship, assistantship)   `Check = 1`
____ Savings   `No check = 2`
____ Other (please specify)_____

30. Do your parents have credit cards?

__1__ Yes
(1 - 3) __2__ No
__3__ Do not know

31. Approximately how much money do you spend in a year while attending CSU?

__1__ Less than $5,000
__2__ $5,000 - $9,999
__3__ $10,000 - $14,999
(1 - 7) __4__ $15,000 - $19,999
__5__ $20,000 - $24,999
__6__ $25,000 - $29,999
__7__ $30,000 or more

`Comment on last page    Yes = 1`
`        (1-2)            No = 2`

APPENDIX J:

Countries of the World Grouped by Income
and Region, and by Income (Alphabetical Order)

Low-income ($580 or less)	Lower-middle-income ($581-2,200)	Upper-middle-income ($2,201-6,000)	High-income ($6,001 and above)
Sub-Saharan Africa Benin Burkina Faso Burundi Central African Rep. Chad Ethiopia Ghana Guinea Kenya Lesotho Liberia Madagascar Malawi Mali Mauritania Mozambique Niger Nigeria Rwanda Sierra Leone Somalia Sudan Tanzania Togo Uganda Zaire Zambia Asia Bangladesh Bhutan China India Indonesia Kampuchea Lao, PDR Myanmar Nepal Sri Lanka Viet Nam Latin America & Caribbean Haiti Europe, Middle East and North Africa Afghanistan Pakistan	Sub-Saharan Africa Angola Botswana - Cameroon Congo, People's Rep. Cote d'Ivoire Mauritius Namibia Senegal Zimbabwe Asia Malaysia Mongolia Papua New Guinea Philippines Thailand Latin America Caribbean Agentina Bolivia Chile Colombia Costa Rica Dominican Rep. Ecuador El Salvador Guatemala Honduras Jamica Mexico Nicaragua Panama Paraguay Peru Europe, Middle East and North Africa Algeria Bulgaria Egypt, Arab Rep. Jordan Lebanon Morocco Poland Syrian Arab Rep. Tunisia Turkey Yemmen Arab Rep.	Sub-Saharan Africa Gabon South Africa Asia Korea, Rep. Taiwan Latin America & Caribbean Brazil Trinidad & Tabago Uruguay Venezuela Europe, Middle East and North Africa Cyprus Czechoslovakia Greece Hungary Iran, Islamic Rep. Iraq Libya Oman Portugal Romania Yugoslavia (Croatia)	Asia Hong Kong Japan Singapore Europe, Middle East, North Africa, and Others Australia Austria Belgium Canada Denmark Finland France Germany, Fed. Rep. Ireland Israel Italy Kuwait Netherland New Zealand Norway Saudi Arabia Spain Sweden Switzerland United Arab -Emirates United Kingdom United States

Source: World Bank (1991, pp. 204-205).

Countries of the World, Grouped by Income by Alphabetical
Order.

Low-income ($580 or less)	Lower-middle-income ($581-2,200)	Upper-middle-income ($2,201-6,000)	High-income ($6,001 and above)
Afghanistan	Agentina	Brazil	Australia
Bangladesh	Algeria	Czechoslovakia	Austria
Benin	Angola	Cyprus	Belgium
Bhutan	Bolivia	Gabon	Canada
Burkina Faso	Botswana	Greece	Denmark
Burundi	Bulgaria	Hungary	Finland
Central African Rep.	Cameroon	Iran, Islamic Rep.	France
Chad	Chile	Iraq	Germany,Fed.Rep.
China	Colombia	Korea, Rep.	Hong Kong
Ethiopia	Congo, People's Rep.	Libya	Ireland
Ghana	Costa Rica	Oman	Israel
Guinea	Cote d'Ivoire	Portugal	Italy
Haiti	Dominican Rep.	Romania	Japan
India	Ecuador	South Africa	Kuwait
Indonesia	Egypt, Arab Rep.	Taiwan	Netherland
Kampuchea	El Salvador	Trinidad & Tabago	New Zealand
Kenya	Guatemala	Uruguay	Norway
Lao, PDR	Honduras	Venezuela	Saudi Arabia
Lesotho	Jamica	Yugoslavia (Croatia)	Singapore
Liberia	Jordan		Spain
Madagascar	Lebanon		Sweden
Malawi	Malaysia		Switzerland
Mali	Mauritius		United Arab
Mauritania	Mexico		-Emirates
Mozambique	Mongolia		United Kingdom
Myanmar	Morocco		United States
Nepal	Namibia		
Niger	Nicaragua		
Nigeria	Panama		
Pakistan	Papua New Guinea		
Rwanda	Paraguay		
Sierra Leone	Peru		
Somalia	Philippines		
Sri Lanka	Poland		
Sudan	Senegal		
Tanzania	Syrian Arab Rep.		
Togo	Thailand		
Uganda	Tunisia		
Viet Nam	Turkey		
Zaire	Yemen Arab Rep.		
Zambia	Zimbabwe		

Source: World Bank (1991, pp. 204-205).

APPENDIX K:

Knowledge Test

Knowledge Test

Correct Answer	Items

True 1. Bank credit cards are a type of open account credit.

False 2. Credit cards are used most by persons over 45 years.

False 3. Using credit cards as a convenience only is a costly transaction.

False 4. Dollar limits for credit cards are set by credit bureaus.

False 5. Thirty day or regular charge accounts include utility bills, medical services, and credit card accounts.

True 6. Savers benefit from credit usage by borrowers.

False 7. Retail stores do not pay for the use of their customers' bank credit cards.

False 8. Credit card companies have common qualifications for card application.

False 9. There is no charge for the use of any type of credit card.

False 10. A credit card will be granted without making an application.

True 11. Credit bureaus are information sources.

False 12. Truth in Lending a U.S. law, establishes maximum interest rates.

True 13. The U.S. Fair Credit Reporting Act provides the consumer with the right to review one's own credit file.

True 14. Personal liability of credit card holder when one credit card is lost or stolen is $50.

True 15. Credit cards can be a form of interest free loans.

APPENDIX   L:

Credit Card Attitudes

Positive or Negative	Items

Negative   1. I would not enjoy using credit cards.

Negative   2. Using credit cards would tempt me to overspend.

Negative   3. Using credit cards is a bad practice.

Negative   4. Credit cards should be used for items that wear out before they are paid for.

Positive   5. I am for using credit cards.

Positive   6. Using credit cards has no disadvantages.

Negative   7. Cash is the only way to pay.

Negative   8. I am against most uses of credit cards.

Negative   9. Credit cards cost too much to use them for luxuries.

Negative   10. Credit cards make people poor money managers.

Negative   11. Using credit cards wastes money.

Negative   12. Using credit cards is not endorsed by logically minded people.

Negative   13. Credit cards are bad when used for pleasure.

Positive   14. Credit cards are good when used for necessities.

Positive   15. Using credit cards is good.

Negative   16. Using credit cards makes life a paycheck-to paycheck survival.

Positive   17. Using credit cards has advantages.

Negative   18. Using credit cards is sinful.

Negative   19. If I use credit cards it will prevent me from saving money.

Negative   20. Using credit cards will lower one's level of living.

Negative   21. Using credit cards only benefits a few people.

Negative   22. Using credit cards hampers financial progress.

APPENDIX M:

Respondents' Comments

Respondents' Comments

Number	Comment

1   I would really be interested in knowing the way the information from these survey is going to be analyzed. As far as I know, survey analysis is a fairly tough task.

2   Page 1. Question # 1.a & 1.b, If the answer of # 1.a is YES, but the answer of # 1.b is NO, Should I go directly to Question # 16. I think, it is more appropriate when the answers of 1.a & 1.b are "NO" then go to # 16.

3   I can see your assumptions.

4   My knowledge about credit card is very limited because I don't have one. I requested (applied) several credit card issuers but they turned down my application because I am not a U.S. resident.

5   Response to 31 is only considering me, not considering my spouse. It doesn't include fees.

6   At the beginning I was confused about questions for credit card like an American E.??

7   Many credit cards now used as direct debit cards which access the bank account first. Mine also can be used to withdraw cash from my checking account. So its like a check, I use it all the time.

8   I hope I have given the information you require for your studies and what I know about credit cards. Good Luck!!

9   I would like to know the right (correct) answers. Thanks!

10   It was difficult to get a credit card when I first arrived in U.S.A., because of being a non-resident with no credit record, eventhough I had a VISA card with an excellent record and credit limit from my home country. To obtain a credit card in U.S.A. I had to ignore the fine print about being a U.S. citizen.

11   Sorry but I don't know much about credit cards.

12   An interesting aspect to study might be the amount
        of time that it takes a person to maximize
        benefits from credit cards and to learn how not to
        use it arbitrarily for me it took about 2 years!

13   Would here helped you if you did a little more PR
        and explained your need for my response. Best of
        Luck anyhow!

14   I am not familiar with questions that involved
        U.S. Laws and bank regulations. However, most of
        the rest of the questions were significant and
        important to know to draw inferences from. Good
        Luck in your study!

15   This may be a good survey. Wish you good luck!

16   The statement on question # 21 No.6 "Savers
        benefit from credit usage by borrows" is rather
        vague and not understandable. If you want some
        figures, some calculations in the questionnaires
        should have been asked.

17   It is very difficult to get a credit card when
        international students arrived in U.S.A. first
        time.

18   When I came here, I applied for various credit
        cards. They all refused on the basis that I had
        no credit history. After one year here I
        reapplied. This time I was refused on the basis
        that my permanent address was in India.

19   Sorry for the delay!

20   I think credit cards are great provided you use
        them intelligently.

21   I think your responses will be vary a lot due to
        the length of your survey. Try to shorter it and
        redo it.

22   Credit card usage is a good practice, convenience
        and helpful when one does not have money handy.
        If balance could be paid every month in full is a
        way to go. But, generally one tends to (tempted?)
        spend more than necessity by the use of such
        plastic. In such cases credit cards may be
        troublesome and even dangerous at time when one
        lives in a fixed income. Keep your account clean
        every due period, use with calculation. If you do
        not have control over your spending it is best not

to have any credit cards. If you could send me
the abstract of your finding, will highly be
<u>appreciated</u>.

23   Hi Tapin, sorry for the delay!

24   Thank you for let me participate! Good Luck to
you!!

25   I have only VISA card issued from my bank, but
very often I get offers from various credit card
agencies. Since I am a student I am not
interested in using many credit cards though you
can get useful credits while you are studying.

26   Good Luck!!

27   Sorry about the delay! & Good Luck on your
dissertation!!

28   1. I think one month payment is <u>short</u> and I
suggest that you investigate the possibility of
making that a six-month (or one year) period <u>bill</u>
for more convenience. Of course the card
companies may apply such PRIVILEGE to a "trustful"
customer (or as they sometime call him a Preferred
credit card holder).
2. I know some friends who continue using their
cards (specially, American Express) after getting
back home, So I think if the card companies did
not allow this, they could have been losing a very
<u>"Financially Stable Customers"</u>, because <u>most</u> of
the <u>international students</u> in U.S.A. will have a
<u>stable</u> income and I think at least the majority of
them will be a "perfect" customer for the card
companies. And GOOD LUCK, & Sorry it is late.

29   I already apply for several credit cards. They
all have been refused because not enough credit
history in U.S.A.

30   I have just got a credit card. So I think my
opinion will be of less value to you.

31   I have applied credit cards such as VISA, Master
Card, but so far I was rejected, though I already
have VISA and Dinner Club issued in Japan. Why?
They say that I have no credit record in U.S.A.
In Japan, if you have a job and have stable
monthly salary, it is easy to get credit cards,
eventhough you have no debt. So, the policy may
be different between VISA in Japan and VISA in

U.S.A. The banker says that I may have cards if I
open a saving accounts in addition to the checking
accounts. Is it true?

32   For international students, usually credit card
applications are denied unless you are a citizen
of a rich country (e.g. Saudi Arabia), Usually
citizens of third world countries are denied this
privilege (if you would like to call it a
privilege). I applied to almost all major credit
cards but they are denied on the ground that I've
no credit history?? How can I have a credit
history without a credit cards?? I tried to avoid
responding to this questionnaire on the grounds
that I have no experience with these cards. AT&T
issued me a calling card, I used it for
international calls!!!

33   I did not get you first mailing.

34   I don't have any credit card, I had applied once
for it and got reply hence, I don't have any first
hand knowledge about credit card.

35   1. Only have AT&T credit card for telephone use.
2. I have been refused credit cards by companies
for all kinds of reasons --foreign home address
-- no credit report.
3. I have only used friend credit cards when I
book hotels, planes etc and then I pay them cash
immediately. Best of Luck!

36   1. About the member fee, there're different
standard among the credit card companies. Some of
them are reasonable, some of them are not.
2. As long as I get one credit card, the company
will ask me to join other programs. The phone
calla and advertisement bother me a lot.
3. I should spend certain time to review and pay
the charge. Sometime I'll forget the deadline.

37   It is really amazing how some credit cards reject
applications just because of the FACT that you are
a foreign student. I've never got a single check
bounced and I always pay in full all my credit
card bills and I've been here for more than 2.5
years and I still got rejections from some credit
card companies just because I'm foreign student.
It took me a long time & several rejections to get
the credit cards that I have now. May be a
question for this survey will be: a) how many
times have you applied for credit card? b) how

many time have you been rejected credit cards? c)
what has been the most common reason?

38   You should have asked about how much does an
        international students spend on his/her overseas
        calls using credit card(s) like AT&T or MCI--which
        is the most expenses we use the credit card for
        especially for countries with no direct dialing
        need an operator. Thank You!
        Comment: The number of this questionnaire on the
        cover page means that this information is known to
        whom does relate or belong. Thanks!

39   Credit card system is the bane of U.S.A. consumers
        because they overspend. Credit cards are
        nonproductive which are under mining the U.S.A.
        economy. Ruthless tax system, low reach interest
        rates, and inordinate use of credit cards are the
        most important factors responsible for the lower
        saving rate in the U.S. which in teen have
        adversely affected investment. The sooner the
        credit system is abolished once for all, the
        better it will be for U.S.A. both economically and
        society, this system has benefit only a
        microscopic minority.

40   I have not used a credit card so far and as
        such,I do not have much information about the
        same. So I have tried to answer the questionnaire
        reasonably, but without much confidence, I will be
        glad if you can send me an information brochure
                regarding credit cards--as to how they become
        operative, what is the eligibility criteria, what
        are the benefits and burdens etc.

41   Some credit cards are discriminate towards people
        who are not U.S. citizens.

42   Tapin, I am not sure weather I have helped you in
        any way. I have applied for a credit card with
        CHASE but I was turned down, for not being a U.S.
        citizen. Since then, I have hated the idea of
        filling another application for me for a credit
        card. I prefer to use my check book instated.
        Presently, I don't hold a credit card. Wish you
        success in your study!

43   I'm sorry because I sent it late. I wasn't in
        Fort Collins and I'm so glad to fill this form.

44   I hope you find something to help students.

45   I am sorry I cannot help you much regarding your questions as I do not have a credit card as yet and I plead ignorance regarding some question concerning them. Best of luck, anyway with your research!

46   Good Luck on your survey. Sorry for the delay!

47   1) Your question # 1 (b) is confusing or misleading. 2) I never wanted a credit until I found that I could not rent a car without one, or check in a hotel without one etc. They preferred a credit card rather than cash!!! 3) credit card are excellent in the hand of responsible people!!

48   One important point was missed in this evaluation perform and it is:
How many people have I/you seen using credit cards with no intention of paying the money back?
This thing is observed by me, and it is my personal opinion that we should have to pin point those culprits and at least save the name of our country. Charging air tickets to their family members when leaving U.S. or buying gifts for friends. The interest rate which the consumer's (regular) are paying may also increase due to these defaulters.

APPENDIX N:

Distribution of True/False and Sure/Unsure Responses
for Credit Card Knowledge

Distribution of True/False and Sure/Unsure Responses for Credit Card Knowledge.

Statement	Key T/F	True #	True %	False #	False %	Sure #	Sure %	Unsure #	Unsure %
1. Bank credit cards are a type of open account credit.	‛ T	173	70.3ᵃ	73	29.7	121	50.8	117	49.2
2. Credit cards are used most by person over 45 years.	F	17	6.9	228	93.1	160	65.0	86	35.0
3. Using credit cards as a convenience only is a costly transaction.	F	61	24.5	188	75.7	159	66.3	81	33.8
4. Dollar limits for credit cards are set by credit bureaus.	F	148	59.4ᵇ	101	40.6	100	40.8	145	‛59.2
5. Thirty day or regular charge accounts include utility bills, medical services, and credit card accounts.	F	111	48.7	117	51.3	65	27.7	170	72.3
6. Savers benefit from credit usage by borrowers.	T	135	57.2	101	42.8	89	37.6	148	62.4
7. Retail stores do not pay for the use of their customers' bank credit cards.	F	82	34.7	154	65.3	101	42.3	138	57.7
8. Credit card companies have common qualifications for credit card application.	F	148	59.0	103	41.0	143	59.1	99	40.9
9. There is no charge for the use of any type of credit card.	F	21	8.4	229	91.6	209	86.4	33	13.6

(continued.)

Statement	Key T/F	True #	True %	False #	False %	Sure #	Sure %	Unsure #	Unsure %
10. A credit card will be granted without making an application.	F	14	5.6	237	94.4	200	82.6	42	17.4
11. Credit bureaus are information sources.	T	189	77.1	56	22.9	120	50.2	119	49.8
12. Truth in Lending a U.S. law, establishes maximum interest rates.	F	106	49.8	107	50.2	39	16.8	193	83.2
13. The U.S. Fair Credit Reporting Act provides the consumer with the right to review one's own credit file.	T	166	74.1	58	25.9	74	30.8	166	69.2
14. Personal liability of credit card holder when one credit card is lost or stolen is $50.	T	91	38.7	144	61.3	78	32.1	165	67.9
15. Credit cards can be a form of interest free loans.	T	117	47.6	129	52.4	149	61.3	94	38.7

___ᵃ Percentage of Correct Answer more than 50%.
___ᵇ Percentage of Incorrect Answer more than 50%.

APPENDIX O:

Cross-tabulation of Credit Card Knowledge
Scores and Credit Card Attitude Scores

Cross-tabulation of Credit Card Knowledge Scores and Credit Card Attitude Scores.

Credit Card Attitude Scores	Credit Card Knowledge Scores															
	≤7		8		9		10		11		12		≥13		Total	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
≤2.64	2	0.9	-	-	3	1.3	1	0.4	-	-	-	-	-	-	6	2.5
3.14	3	1.3	5	2.1	7	3.0	6	2.5	5	2.1	-	-	1	0.4	27	11.4
3.64	15	6.3	16	6.7	21	9.0	16	6.8	13	5.5	4	1.7	5	2.1	90	38.1
4.14	8	3.4	10	4.2	25	10.6	15	6.4	12	5.1	7	3.0	4	1.6	81	34.3
≥4.64	2	0.9	2	0.9	4	1.6	5	2.1	12	5.1	5	2.1	2	0.9	32	13.6
Total	30	12.8	33	13.9	60	25.5	43	18.2	42	17.8	16	6.8	12	5.0	236	100.0

APPENDIX P:

Canonical Correlations of Four Input
Variables with Throughput Variable

Canonical Correlations of Four Input Variables with
Throughput Variable.

Predictors (Input)		Criteria (Throughput)	

Knowledge		Practices	

$r_c = .414$; $F(120, 1073.032) = .824$; $p = .910$

Q21.1	-.012	Q1	-.040
Q21.2	.156	Q2	.650
Q21.3	-.112	Q3	.727
Q21.4	-.286	Q5	-.112
Q21.5	-.032	Q7	-.014
Q21.6	.510	Q8	.249
Q21.7	.042	Q9	-.107
Q21.8	-.278	Q10	.078
Q21.9	.306		
Q21.10	.316		
Q21.11	-.094		
Q21.12	-.310		
Q21.13	-.308		
Q21.14	.434		
Q21.15	-.024		

Attitudes

$r_c = .568$; $F(176, 1004.321) = .984$; $p = .546$

Q20.1	-.290	.392
Q20.2	.184	.831
Q20.3	-.033	.598
Q20.4	-.156	-.299
Q20.5	.576	.400
Q20.6	-.200	-.230
Q20.7	-.064	.266
Q20.8	.123	-.190
Q20.9	.352	
Q20.10	.199	
Q20.11	.166	
Q20.12	-.363	
Q20.13	-.051	
Q20.14	.140	
Q20.15	-.304	
Q20.16	.447	
Q20.17	.073	
Q20.18	-.073	
Q20.19	-.272	
Q20.20	.004	
Q20.21	.177	
Q20.22	-.220	

(continued.)

Predictors (Input)		Criteria (Throughput)
Experiences		Practices (Continued)

r_c = .429; F(40, 739.44) = 1.626; p = .010

Q14	.870	.238
Q16	.102	.422
Q17	.089	.220
Q19	-.362	.324
Q30	.250	.396
		-.246
		.284
		.078

Socio-Demographics

r_c = .364; F(48, 791.329) = 1.064; p = .360

Q22	-.292	-.244
Q23a	.616	.217
Q24	.367	.328
Q25	-.100	.758
Q26	.112	.344
Q31	.346	-.122
		.331
		-.390

APPENDIX Q:

Canonical Correlations of Four Input
Variables with Output Variable

Canonical Correlations of Four Input Variables with Output Variable.

Predictors (Input)		Criteria (Output)	
Knowledge		**Satisfaction**	

$r_c = .421$; $F(30, 334) = 1.402$; $p = .082$

Q21.1	-.138	Q12	-1.116
Q21.2	-.384	Q13	.828
Q21.3	.367		
Q21.4	-.174		
Q21.5	.152		
Q21.6	.148		
Q21.7	.173		
Q21.8	.134		
Q21.9	.676		
Q21.10	.127		
Q21.11	.310		
Q21.12	-.126		
Q21.13	-.174		
Q21.14	.237		
Q21.15	-.224		

Attitudes			

$r_c = .512$; $F(44, 296) = 1.772$; $p = .003$

Q20.1	.325	Q12	.899
Q20.2	-.067	Q13	.172
Q20.3	.181		
Q20.4	-.158		
Q20.5	.008		
Q20.6	.022		
Q20.7	-.104		
Q20.8	-.126		
Q20.9	.081		
Q20.10	.254		
Q20.11	-.020		
Q20.12	.092		
Q20.13	-.066		
Q20.14	.030		
Q20.15	-.611		
Q20.16	.216		
Q20.17	-.053		
Q20.18	.064		
Q20.19	-.111		
Q20.20	.146		
Q20.21	-.038		
Q20.22	.116		

(continued.)

Predictors (Input)		Criteria (Output)	

Experiences

r_c = .270; F(10, 374) = 1.697; p = .080

Q14	-.107	Q12	.580
Q16	.337	Q13	.556
Q17	.942		
Q19	-.332		
Q30	-.400		

Socio-Demographic

r_c = .180; F(12, 358) = .655; p = .794

Q22	-.390	Q12	-1.154
Q23	-.307	Q13	.762
Q24	-.473		
Q25	.090		
Q26	.898		
Q31	.494		

APPENDIX R:

Canonical Correlations of One Throughput
and Four Input Variables with Output Variable

Canonical Correlations of One Throughput and Four Input
Variables with Output Variable.

Predictors (Throughput and Input)		Criteria (Output)	
Practices		Satisfaction	

r_c = .778; F(112, 134) = 1.400; p = .031

Q1	-.074	Q12	1.043
Q2	.167	Q13	-0.074
Q3	-.088		
Q5	.240		
Q7	.275		
Q8	.302		
Q9	.206		
Q10	.010		

Knowledge

Q21.1	.084
Q21.2	.063
Q21.3	-.084
Q21.4	.264
Q21.5	-.064
Q21.6	.004
Q21.7	-.021
Q21.8	.022
Q21.9	-.124
Q21.10	-.029
Q21.11	-.118
Q21.12	-.014
Q21.13	.052
Q21.14	.220
Q21.15	-.010

Attitudes

Q20.1	.291
Q20.2	-.194
Q20.3	.066
Q20.4	.036
Q20.5	-.145
Q20.6	.130
Q20.7	-.052
Q20.8	.326
Q20.9	.188
Q20.10	-.104
Q20.11	.022
Q20.12	-.022

(continued.)

Predictors (Throughput and Input)		Criteria (Output)
Attitudes (Continued)		
Q20.13	-.041	
Q20.14	.021	
Q20.15	-.221	
Q20.16	.092	
Q20.17	.082	
Q20.18	.220	
Q20.19	.106	
Q20.20	-.078	
Q20.21	-.079	
Q20.22	-.040	
Experiences		
Q14	-.145	
Q16	.255	
Q17	.298	
Q19	.023	
Q30	-.382	
Socio-Demographics		
Q22	-.043	
Q23a	.085	
Q24	-.116	
Q25	-.174	
Q26	-.194	
Q31	.036	

APPENDIX   S:

Canonical Correlations of Throughput
Variable with Output Variable

Canonical Correlations of Throughput Variable with Output
Variable.

Predictors (Throughput)		Criteria (Output)	
Practices	–	Satisfaction	

r_c = .383; F(16, 352) = 2.066; p = .009

Q1	-.009	Q12	.496
Q2	.050	Q13	.652
Q3	-.046		
Q5	-.102		
Q7	.610		
Q8	.428		
Q9	.511		
Q10	.191		