TIANSHU LI
International Students' Ownership and Use of Credit Cards
(Under the Direction of DEBORAH GODWIN)

In a study of international students' ownership and use of credit cards, age and years of U.S. residency influenced the number of credit cards that international students' own. The older an international student is, the more credit cards s/he tends to have. And the longer an international student resides in this country, the more credit cards s/he will have. Students' country of origin influenced the outstanding balances international students owe on all their credit cards. Comparatively, students from higher income countries tend to carry higher outstanding balances on credit cards than students from lower income countries.

INDEX WORDS: International student, Ownership of credit cards, Years of U.S. residency, Age, Country of origin, Outstanding balance

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by

TIANSHU LI

B.A., Jilin University China, 1995

A Thesis Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirement for the Degree

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Approved:

Major Professor : Beborah Godwin

Committee: Julia Marlowe
Joan Koonce

Electronic Version Approved:

Gorhan L. Patel
Dean of the Graduate School
The University of Georgia
May 2001

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CHAPTER 1

INTRODUCTION

Ever since the 1990s, credit cards have become very popular among consumers. Data show that there were approximately 1,013 million credit cards held by consumers in 1990, and 1,387 million in 1997. In 1990, spending on credit cards was $467 billion and by 1997, the number had increased $1,080 billion (Statistical Abstract of U.S., 1999). Credit cards have become welcomed by the public because many people consider "buying today" with an option of "paying later" as a convenient way of obtaining instant gratification. In addition, a large number of credit card users believe there are certain advantages of paying by credit cards. For example, credit cards can "eliminate security problems in carrying cash," they provide "convenience … as opposed to a personal check, ease of borrowing money," and they "serve as a record of purchase, and meeting emergency needs" (Punjavat, 1992, p. 1). However, overuse of credit cards can also bring people serious financial trouble. According to Durkin (2000), the total consumer credit outstanding, "most of which is generated by credit cards," increased "from $199 billion at year-end 1968 to $1,456 billion in June 2000" (Durkin, 2000, p. 623). Unfortunately, many people have not realized the serious consequence of over use of credit.

When credit cards were introduced in 1920s, they were available only to wealthy people. Today however, credit cards are not only available to people with income, but also to people without income, including college students. It was reported that in this

country by 1994, over 61 percent of college students had obtained one or more credit cards (United States Congress, House, Committee on Banking, Finance, and Urban Affairs, Subcommittee on Consumer Credit and Insurance, 1994).

Usually an individual's economic expectation of the future and his or her consumption patterns of today are closely related. The phenomenon of over use credit cards in this way is perhaps, increasingly common among college students, as most college students expect to earn more income in the future, with which, they will use to pay off the debts they incur today. However, few college students see the devastating consequences of paying only a minimum on a monthly debt today. By doing so, many students' future lives are burdened by the enormous debt leftover from credit cards they used during their college years (United States Congress, et. al. 1994).

As a part of the college student population, international students share many characteristics with native college students. For instance, they have very limited knowledge of credit and credit cards. Furthermore, like many native college students, international students also have high economic expectations about their future. On the other hand, international students possess unique attributes that differentiate them from native college students. First of all, most international college students studying in the U.S. have secure incomes, coming either from scholarships, assistantships, family support or home countries' governments (Makela, Punjavat & Olson, 1993). Secondly, since international students come from different cultural backgrounds, most of them have problems understanding the language and the American culture. This may include difficulty of understanding the U.S. banking and credit systems. Additionally, as everything is relatively new to this group of people, many of them have nowhere to turn

whenever they have any trouble, including financial trouble. Because of these factors, international students' credit practices may be more conservative than native college students.

As well as differing as a group from native U.S. college students, the group of international students studying at U.S. colleges itself is quite heterogeneous. Some international students come from developed countries with highly sophisticated banking and credit systems. These students would likely have been exposed to and may have had experience with credit cards in their original countries. Other international students come from countries with rudimentary banking systems and may not have heard of credit cards before their arrival in the U.S. These students may be particularly vulnerable to the risks of future debt difficulties associated with credit cards.

International students are becoming "a very attractive market for credit card companies" because of the ever-increasing number of international students enrolled in U.S. colleges and universities and their annual spending (Makela, Punjavat & Olson, 1993, p. 173). Thus, international students have constituted a significant proportion of the total number of student cardholders in recent years (Makela, et. al. 1993). Even though there are many studies that have been done on credit users, few have investigated college student cardholders. Even less research on credit card behaviors has been done on the population of international students studying at U.S. universities. Therefore, this study aims at filling this research void.

Purpose and Objectives of the Study

The purpose of this study was to investigate the effects of international students' age, country or origin, and years of U.S. residency on their credit card ownership, number

of credit cards owned, and outstanding balances owed on all their credit cards. Samples were selected from international students enrolled in summer school 2000 at the University of Georgia (UGA), the Georgia Institute of Technology (GATECH), and the Georgia State University (GSU). Questionnaires containing items about age, country of origin, years of U.S. residency, ownership and use of credit cards and other related topics (such as students' attitudes toward credit cards and their current incomes) were distributed to random samples of international students in the three universities. Data were obtained on international students' ownership of credit cards, numbers and types of cards they own, as well as the amounts of debt owed on the cards and their debt repayment patterns.

Information collected was used to conduct a statistical analysis to investigate how the independent variables affect the dependent variables. The measurement of variables is explained in detail in Chapter 3. The objectives of this study were to answer these three questions.

1. To what extent do international students own and use credit cards?
2. Can ownership of credit cards, number of credit cards international students have, and the outstanding balances international students owe on all their credit cards be predicted by students' age, country of origin, or/and years of U.S. residency?
3. Is there any significant difference of credit card behavior among international students with different majors or concentrations?

Answering these research questions will help several groups. International students, both current ones and future ones, can be better educated about what to expect

about credit cards and the cost of debt in the American economy. If certain types of international students are more likely to have difficulty with credit cards, these students can be targeted for credit education before or upon their arrival in the U.S. College and university officials who work with international students can be informed of the potential problems of international students carrying debt of those students whom they counsel. Credit counseling agencies may also use specific information about this group of students in order to help them more effectively avoid debt difficulty or manage debt repayment once they have trouble.

Definitions of Terms

Country of origin: home country where each international student resided before he or she came to the U.S.

Years of U.S. residency: number of years that international students have been living in the U.S.

Outstanding balance on credit cards: amount owed on all credit cards on a given day.

Annual Percentage Rate (APR): a measure of the cost of credit, expressed as a yearly rate.

Annual fees: participation fees or membership fees charged by credit card issuers.

Limitations of the Study

There are several limitations of this study. Because samples used for this study were collected from international students attending three universities in Georgia, the information inferred from the sample may not be generalized to a larger group of people. In addition, the selected independent variables may be only a few of the variables that are

necessary for a thorough study. Because of the lack of previous research on international students' use of credit cards, much of this study was descriptive and exploratory in nature and will need to be followed by more extensive research.

CHAPTER 2

REVIEW OF LITERATURE

This chapter reviews the literature on credit cards, beginning with a brief introduction to the history of the credit card industry in both the United States and some other countries around the world. Then the chapter discusses credit card types and functions. Moreover, an overview of college student credit card holders and international student cardholders is sketched. At the end of this chapter, hypotheses and benefits of the study are summarized.

A Brief History of Credit Cards

This history of credit cards in the United States can be dated back at least to a hundred years ago. According to Mandell (1990), the credit card industry started with the introduction of credit. He suggested, "the use of credit predates even the use of money" (Mandell, 1990, p. 12). Mandell (1990) illustrated his point with an example cited from the Old Testament, Leviticus 25:37 "Thou shalt not give him thy money upon usury, nor lend him thy victuals for increase" (Mandell, 1990, p. 12).

Centuries ago, when credit was first introduced, people were not quite used to the "borrowing" concept. By the time of early 1900s, people had become more comfortable with using credit. However, as they hardly had anything to identify themselves as borrowers, credit issuers always had difficulty recognizing the indebted consumers (Mandell, 1990). This explains why "until about the 1930s, outstanding consumer credit was dominated by noninstallment credit" (Mandell, 1990, p. 14). As the number of

borrowers increased, “some form of identification became necessary” (Mandell, 1990, p. 17). Thus, credit cards were born to meet the need.

Credit cards, as Lindsey (1994) stated, were first developed in the United States at the beginning of this century. Most early credit cards issued at that time were by retailers, gasoline companies and department stores. Being the first card issuer, in 1914 General Petroleum Corporation of California began to “supply cards to its employees and selected customers” (Lindsey, 1994, p. 129). By the 1950s, however, banks had become major card issuers. “ In August 1951, the Franklin National Bank became the first bank to issue credit cards to customers of other banks and bankers saw an opportunity to provide consumer credit. By 1957, 26 banks had 754,000 cardholders being accepted by 11,000 merchants, turnover exceeded US $40 million” (Lindsey, 1994, p. 129). In recent years, a variety of agencies and institutions have begun to issue credit cards. The U.S. credit card industry had around 6,000 card issuers by 1994 (U.S. General Accounting Office, 1994). The most frequently used credit cards today are VISA, MasterCard, American Express, Discover, travel cards, entertainment cards, telephone cards, gas company cards, and various store cards (Armstrong & Craven, 1993).

With the use of credit cards growing substantially in the United States since the mid-1980s, paying by credit cards has already become one of the major ways of making financial transactions for American consumers (Armstrong & Craven, 1993). About 1,387 million cards were in circulation in 1997, and the number was expected to increase to 1,499 million by the end of year 2000. The total number of cardholders was 122 million in 1991 and 149 million in 1997, the estimated number of credit card holders was 2000 is 1,013 million (Statistics Abstract of the U.S., 1999, p. 527).

Credit Cards in Other Countries

Although America is described as a "land of credit," it is not necessarily the only land of credit. In fact, Europe is believed to be the ancestor of credit (Mandell, 1990). Many European consumers have been exposed to credit and credit cards for a long time. For instance, Lindsey (1994) pointed out that in the United Kingdom, in 1991, around "33% of the population held a credit card and some 26% of credit cardholders had two or more cards" (Lindsey, 1994, p. 39). Currently, many Asian and Latin American countries still do not have credit cards, or credit cards are not a popular means of making transactions. However, credit, credit cards and debt associated with them are no longer unfamiliar to many people of these countries.

On the other hand, in order to enlarge their businesses, many credit card companies in the U.S. have started internationalizing their services by targeting consumers in countries that have close economic associations with the United States. VISA and MasterCard have led this internationalization of for many years (Punjavat, 1992). Their Asian markets have been growing rapidly ever since the 1990s. Cited from Handley (1992), Punjavat (1992) pointed out that by 1991, there were 45 million VISA cardholders in Asia. U.S. credit card companies also consider Latin America as another lucrative market where their services can be expanded. "VISA recently opened a sales office in Mexico City to serve its five million cardholders in Mexico" (Punjavat, 1992, p. 22). Because of a long existence of credit cards in Europe, the internationalization process of credit cards has met more difficulties as compared to elsewhere. Therefore, profits generated from European market are not as many as those from Asian and Latin American countries. Even so, these companies always try to think of ways of sharing

profits with European card issuers (Punjavat, 1992). For example, “in 1990 MasterCard reached a partnership agreement with Eurocard ---now Europay--- which helped meet some of the reluctance of continental to MasterCard, indirectly, VISA” (Lindsey, 1994, p. 139).

Types of Credit cards and Their Functions

Credit card is a term that is used to describe all types of cards issued by different institutions. Usually, consumers use credit cards to “pay for goods and services”. In addition, credit cards facilitate consumers “obtaining cash in case of an emergency” (Lindsey, 1994, p. 11). Banks, department stores, gasoline companies and other financial institutions are the major card issuers. Differentiated by issuers, credit cards can be divided into four types (Dietz & Langer, 1996; Statistical Abstract of U.S., 1999; & Consumer Credit Counseling Services, 1999, http://www.creditinfocenter.com). Statistics of the four types of cards are shown in Table 1.

1. “Bank cards” are issued by banks and some other forms of financial institutions as well. VISA and MasterCard are two major types of bank cards. Most bank-issued credit cards are multi-purpose cards. These cards are acceptable almost everywhere, such as stores, restaurants, airlines, and hotels. Cardholders are billed monthly, and they are required to make at least a minimum of 10% to 20% payment of their outstanding balances each month (Dietz & Langer, 1996). Bank cards show “the most notable increase” as compared to other types of credit cards. “By 1998, bank-type cards were in the hands of about two-thirds of families” (Durkin, 2000, p. 624). Currently, there are around 458 million bank cards in circulation and the total spending

Table 1

Credit Cards – Holders, Numbers, Spending, and Debts, 1990 and 1997, and Projections, 2000

Type of credit card	CARDHOLDERS (mil.)			NUMBER OF CARDS (mil.)			CREDIT CARD SPENDING (bil. dol.)			CREDIT CARD DEBT (bil. dol.)		
	1990	**1997**	**2000** proj.	**1990**	**1997**	**2000** proj.	**1990**	**1997**	**2000** proj.	**1990**	**1997**	**2000** proj.
Total[1]	**122**	**149**	**157**	**1,013**	**1,387**	**1,499**	**467**	**1,080**	**1,419**	**243**	**560**	**677**
Bank[2]	79	100	105	213	403	458	243	678	891	154	397	486
Travel and entertainment[3]	16	23	24	28	31	38	85	160	232	20	33	40
Phone	97	116	126	141	173	183	14	19	22	2	2	3
House												
Oil company	85	79	79	123	109	105	28	38	46	3	4	5
Retail store	96	108	114	459	614	652	75	121	147	51	88	99
Other[4]	10	7	7	49	57	63	22	64	81	13	36	44

"[1.] Cardholders may hold more than one type of card. [2.] Visa and MasterCard credit cards. Excludes debit cards.
[3.] Includes American Express and Diners Club. [4.] Includes Air Travel Card, automobile rental, Discover (except for cardholders), and miscellaneous cards."

on them is $891 billion. Debts carried by this type of credit card were $154 billion in 1990, $397 billion in 1997 and were estimated to be about $486 billion by the end of 2000 (Statistical Abstract of U.S., 1999).

2. "Travel and entertainment (T&E) cards" are cards typically designed for travel and leisure expenses. The major two cards in this category are American Express and Diners Club cards. Debts on these cards must be "paid in full every month" (Dietz & Langer, 1996, p. 9). Comparatively, the number of consumers with this type of card does not increase as fast as other types of cards. In 1997, there were 31 million travel and entertainment cards in circulation, and by the end of year 2000, the card number is estimated to be 38 million. However, statistics show that the spending on T & E cards has increased rapidly. In 1990, the spending using these cards was $85 billion, in 1997 it doubled to $160 billion, and by the end of the year 2000, the number is estimated to be $232 billion. Debt owed on this type of card was $20 billion in 1990, $33 billion in 1997, and is estimated to be $40 billion by the end of 2000 (Statistical Abstract of U.S., 1999).
3. "Telephone cards (or calling cards)" are cards issued for making long-distance telephone calls. AT&T and Sprint are the two major issuers of this type of card. Calling cards have a relatively larger number of cardholders than any other cardholders because of their practical usage. The spending on this type of card has increased steadily from $14 billion in 1990 to $19 billion in 1997 and $22 billion by 2000. Comparatively, cardholders of this type of card carry smaller amount of debts than any other type of card: $2 billion in both

1990 and 1997, and an estimate of $3 billion by the end of 2000 (Statistical Abstract of U.S., 1999).

4. "House cards" include both store cards and gasoline cards. They are cards issued by various stores and gasoline companies, respectively. Different from other types of credit cards, a house card can only be used in the store or the Gasoline Company where it is issued. In other words, "it is not normally a three-or-four-way transaction, but a two-way arrangement: the card issuer is normally the card acceptor" (Lindsey, 1990, p. 16). Cardholders are billed differently according to different credit card policies of each particular store or company. Sears credit card and Macys credit cards are examples of store cards. Shell credit cards and BP credit cards are examples of gasoline cards (Dietz & Langer, 1996; Consumer Credit Counseling Services, 1999, http://www.creditinfocenter.com). The number of store cards and gasoline cards together contribute the greatest proportion of the total number of credit cards now in circulation. According to the statistics provided by Statistics Abstract of the U.S. (1999), the total number of store cards and gasoline cards was 723 million in 1997, and by the end of 2000 will be 757 million. Spending on store cards and gasoline cards is not that much as compared to bank cards and T&E cards. The total spending on store cards and gasoline cards in 1997 was $159 billion, and by the end of 2000, it will be $203 billion. However, debt cardholders owe on this type of card is surprisingly high, second only to the amount owed on bank cards. Outstanding balances on house cards totaled $54

billion in 1990, $92 billion in 1997, and are estimated to be $104 billion by the end of 2000 (Statistical Abstract of U.S., 1999, p. 527).

No matter what category a credit card may fall into, credit cards usually have three major functions. As Lindsey addressed, "they can be a means of paying for goods and services; a means of obtaining cash; and a source of revolving credit" (Lindsey, 1994, p. 12). First, compared to other kinds of payment, card users experience more flexibility and convenience of payment when using credit cards. Second, paying with credit cards is less time-consuming than many other types of payment methods, and people find credit cards very useful when meeting emergencies. This is especially true when people travel. In addition, wise use of credit cards may help consumers build up a solid credit history, which will be very helpful for consumers in obtaining future loans with low interest. Moreover, consumers are protected against certain risks in the marketplace when using credit cards. For instance, "under section 75 of the Consumer Credit Act 1974, customers are provided with extra protection covering goods costing between $100 and $15,000 bought on credit cards" (Lindsey, 1994, p. 20).

However, credit cards can also disadvantage consumers in many ways. For example, sometimes cardholders are charged high annual fees and high APRs when they borrow money from credit card companies. Consequently, these extra costs may jeopardize consumers' economic situations. The increasing profitability of credit cards has encouraged card issuers to issue cards to consumers who do not have stable incomes and to people who were once believed not to be credit worthy or had bad credit histories. Consequently, more people will have a chance to get involved in credit card debts.

Nowadays, more and more customers prefer shopping with credit cards to shopping with cash, because retailers and banks offer various kinds of payment options. For example, consumers can buy products today and pay them later. It brings convenience especially to those customers who "cannot immediately access cash to buy items they need or want" (Grady, 1995, p. 24). Perhaps because of this convenience, many consumers may have piled up serious credit debts even unconsciously. "Credit card debt has quadrupled since the 1980s from $49 billion to over $194 billion a year. … The number of credit cardholders and the number of cards owned by consumers have nearly doubled in the last decade" (Armstrong & Craven, 1993, p. 148). The United States General Accounting Office (1994) also reported data that further confirm the increasing outstanding balances carried by consumers on their credit cards since the 1980s in this country.

> VISA and MasterCard members' total annual charge volume grew by 60 percent in constant 1982 dollars, from about $131 billion in 1986 to about $216 billion in 1992. Moreover, between yearend 1983 and yearend 1993, total credit card balances outstanding quadrupled, rising from about $39 billion to about $156 billion in constant 1982 dollars (U.S. General Accounting Office, 1994, p. 11).

Another recent statistic (Statistical Abstract of U.S. 1999) shows that in the year 2000, it was projected that credit card debt would be $677 billion. That almost triples the $243 billion owed on credit cards in 1990.

Student Cardholders

In the early years, credit cards were issued only to people with "sufficient" incomes, which usually meant they were limited to middle class and upper class households. However, in the 1990s, the credit card industry has become more

competitive. To make greater profits, card issuers are increasingly enlarging the number of cardholders in "a wide age range and income level" (Armstrong & Craven, 1993, p. 148). College students have become a target market, because card issuers find out that college campuses are always active marketplaces. The information provided by United States Congress (1994) showed that the average of full time college students' yearly spending on books and supplies was about $4 to $5 billion dollars, and this figure did not include tuition fees. Statistics show that "more than 70 percent of college students report making a purchase from a catalog, advertisement, subscription club or other direct sales solicitation the past year and almost half have made at least one round-trip by plane during the same time" (United States Congress, House, Committee on Banking, Finance, and Urban Affairs, Subcommittee on Consumer Credit and Insurance, 1994, p. 55). Consequently, the demand for credit cards from college students is very high. Testimony before the congressional committee suggested that college students use cards for every day necessities. In fact, college students present even greater need for credit cards than the rest of the public because of their unbalanced consumption behaviors (United States Congress, House, Committee on Banking, Finance, and Urban Affair, Subcommittee on Consumer Credit and Insurance, 1994, p. 55)

For the last seven years, there has been an "explosive use" of credit cards by these young people. Ruth Sueewein, the executive director of Bankcard Holders of America, stated that "according to industry figures, an estimated 61 percent of college students have at least one credit card already. One-third of students obtain them in their freshmen year, and another 32 percent, oddly enough, obtain credit cards before they even set foot on a college campus" (United States Congress, House, Committee on

Banking, Finance, and Urban Affairs, Subcommittee on Consumer Credit and Insurance, 1994, p. 4).

Students now are using credit cards to pay for everything from clothes, books, and tuition fees to football tickets and restaurant meals (United States Congress, et al. 1994). Credit cards are used to pay for almost all necessities for student life and perhaps, many goods and services that may be considered luxuries. As Kennedy suggested, "in an industry that has pumped one billion credit cards into American homes, students represent one of the last unsaturated markets. And they represent a lucrative one as well, spending over $60 billion each year on consumer goods" (United States Congress, al. 1994, p. 1). When this market became attractive to creditors, more and more college students were offered credit cards "without even demonstrating their ability to pay off debts" (United States Congress, et. al. 1994, p. 1). As a result, there are a growing number of students carrying serious credit card debts. Actually, many studies have shown that the rate of indebtedness is increasing far quicker in younger age groups than among older Americans (Armstrong & Craven, 1993; Bloom & Steen, 1987; Canner & Cyrnak, 1986; Otten, 1989).

In his talk on the hearing before the subcommittee on consumer credit, Mr. Kennedy, chairman of the subcommittee, presented several actual cases of college students falling into serious credit card debt. For example, a Texas Tech student had to drop out of school his junior year and work full-time to pay off his $17,000 credit card debt he owed. A student from Loyola Marymount owed $25,000 in outstanding balances on his seven credit cards when he was only 19 years old. Mr. Kennedy emphasized how devastating it would be to a college student to have this amount of debt by calculating

that “a 20-year-old making minimum payments on a $5,000 debt will be over 40 years old by the time it’s paid off” (United States Congress, et. al. 1994, p. 2).

With more college students having serious indebtedness, credit card companies are making large profits from these young people's credit card use. Kennedy suggested that “according to the industry’s own figures, issuers earn about $16.5 million a year on every 100,000 student cardholders in the whole country, that means that the industry earns about $500 million each year on student credit card debt” (United States Congress, al. 1994, p. 2).

Among those indebted young people, international students form a special group of cardholders whose credit card payment practices deserve more study. Ever since the 1980s, more and more U.S. universities have realized that “international students’ presence in the U.S. has been a great benefit to the American higher education system." In addition, they not only have provided “cultural diversities and pluralism”, but also “helped to expand the worldview of the U.S. academy” (McIntire & Willer, 1993, p. 43). Because of this, there has been a dramatic increase in international student enrollment at U.S. universities during the last forty years. In the 1950s, less than 34,000 international students were studying in about 1,600 colleges and universities. By the 1960s, the number of international students had increased to 110,000, and they were studying at over 1,800 U.S. universities and colleges. In 1980s, there were around 356,000 international students studying in approximately 2,500 institutions. Ten years later, the number had increased to 407,500. It was estimated that the number was and would be increasing even quicker along with the growth of internationalization of the U.S. business

(McIntire & Willer, 1993; U.S. Bureau of Census, 1991; Dodge, 1991; Deutch, 1991; U.S. Department of Education, 1991).

With the increase in the number of international students studying in the U.S., the total spending of international students in this country has increased too. Makela, Punjavat and Olson (1993) stated that the spending of international students was estimated to be $7.2 billion annually. This definitely makes international students a lucrative market for credit card companies. As credit card holders, international students share many attributes with other college student cardholders. For instance, they use credit cards for convenience and emergencies and they need credit cards to build up a credit history, which help them adapt to the American economic system quickly. However, this group of people also possess some characteristics that are different from most other college student cardholders. Because international students are always "among the brightest and most highly motivated of the student-age population in their home countries" (McIntire, et. al. 1993, p.1), most of them are offered financial assistance either by their own countries or by U.S. universities in the form of scholarships, assistantships, or work study opportunities. In other words, the majority of international students who choose to study in U.S. have "secure sources of income" (Makela et. al. 1993, p. 173).

Nevertheless, unlike the native college students, international students always have the extra challenge of adjusting to a new culture. From an economic prospective, many international students have trouble becoming familiar with the U.S. economic system. Therefore, a great number of students do not know what to do, or lose financial control when facing the complicated economic system that they have never experienced

before. Credit card usage can serve as an excellent example. Many students do not have any idea about credit cards before they step into this country. For instance, they do not know what a credit card is, where and how it can be used, and how to obtain one. This can be especially true for those students from economically disadvantaged countries where credit cards are not popular among the public or, are nonexistent. Even students from other developed countries, who may have already begun using credit and credit cards in their home countries, could have difficulties in using credit cards in this country as well. Because of the cultural and economic differences, people's understandings about and feeling towards credit cards may vary. Consequently, their credit card payment practices, determinants of their borrowing money from credit card companies may be quite different. Therefore, a great deal of research needs to be done on this group of people.

Surprisingly, a review of literature reveals very limited information about international students' credit card behaviors. Makela, Punjavat and Olson (1993) conducted a study exploring international students' knowledge, attitudes, experiences, practices, and satisfaction related to credit cards. The sampling frame of this study was international graduate students studying at a western US land-grant university in summer 1992. The questionnaire had six pages of items. Questions were put into six categories, which were "credit card practices, satisfaction, experiences, attitudes, knowledge, and respondents' socio-demographic characteristics" (Makela, Punjavat & Olson, 1993, p. 177). There were 261 respondents and the response rate was 46.2%. The authors reported the descriptive statistics as follows: students who participated in the study came from 55 different countries. Three-fourths of the participants were male students. Mean

age of respondents was 31.2 and over one half of the students were married. The mean number of years of U.S. residency was 2.7 years. About 44% of the respondents were from low-income countries and 15.4% were from lower-middle income countries. The authors defined income level of students' countries of origin based on "the World Bank's per capita annual income classification of low income (<$580), lower-middle income ($580-2,200), upper-middle income ($2,201-6,000), and high income (>$6,000)" (Makela, et. al. 1993, p. 177).

To test students' knowledge of credit cards, the authors asked 15 true/false questions regarding the topic. The mean score was 9.5 with a range from 5 to 14. The authors concluded that the respondents' knowledge of credit cards was relatively low. The Likert-type scale was employed to measure credit card attitudes with the response set ranging from strongly disagree to strongly agree. The mean score to questions in this group was 3.6 with a range from 1.3 to 5.0. Thus, the authors concluded that sampled students had "relatively favorable attitudes toward credit cards" (Makela, et. al. 1993, p. 179).

Measures of credit card experiences and credit card practices were obtained by asking questions such as whether an individual had ever attended classes that discussed consumer credit, how many years an individual had been using credit cards, whether one's parents used credit cards, whether an individual had ever used credit cards before coming to this country, and whether one had any problems while using credit cards. The findings showed that the respondents' experience with credit cards was very limited. The statistics showed that about one-fourth of the students sampled were regular users of credit cards. About 79.3% of the students reported that whether or not they paid the total

amount due monthly depends on how much money is available; 8.6% of the students said that they paid more than the minimum but less than the total; 3.5% of the students reported that they made only minimum payments monthly.

Students' credit card satisfaction was measured by asking whether one was satisfied with their current use of credit cards. About 75% of the respondents expressed that they were satisfied or somewhat satisfied with "how they manage their spending with credit cards". Only 4.5% were not quite satisfied. The mean score of satisfaction was 2.0, "indicating satisfaction with managing spending with credit cards" (Makela et. al. 1993, p. 183).

Makela, Punjavat & Olson (1993) concluded that, in general, international students' knowledge of credit cards was low, and they generally lacked experience in using credit cards, but they had a favorable attitude towards using credit cards. Most international students appeared to be convenience users of credit cards; that is, they charged items regularly but paid off the balance in full monthly.

Another study, conducted by Armstrong and Craven (1993) was not exactly about international students, but it was somewhat related to this population. The major target population of Armstrong and Craven's study was college students. As race was one of the four independent variables (age, gender, race and income status), international students were partially included into the study. The purpose of the study was "to provide insights about college students' use of credit cards, types of credit cards used, frequency of card use and methods of paying off balances" (Armstrong & Craven, 1993, p. 150). A group of 243 undergraduate students from a Midwestern state university were used as the sample for this study. A questionnaire containing 24 items on students' demographic

information, credit card payment practices, and other variables were distributed. Multiple linear regressions and t-tests were the statistical methods used to analyze the data.

Their findings were that over half of the participants were male students and 87% were 25 years old or younger. Eighty one percent of the students were Caucasians, and international students were only about 3.4% of the sample. The annual incomes of the students in the sample were very low. More than half of the students reported their annual incomes as lower than $4,000. Contrary to their low income, most students (71%) reported that they had at least one credit card. The regression model showed that gender and race could predict the number of credit cards that a student held. Female students had more cards than male students did, and whites had almost twice as many cards as non-whites. Most students (89%) reported that they primarily used credit cards to purchase necessities. Some (11%) reported that they used cards to meet emergencies or make large purchases. Although most students expressed that they used credit cards for convenience only, more than 70% of them were carrying outstanding balances. The authors concluded, “college students who use multiple credit cards need to be aware of potential hazards of multiple card ownership” (Armstrong & Craven, 1993, p. 157).

Conducted by Allen and Jover, the study of “Credit Card Behaviors of University Students: Ethnic differences” focused on determining “how credit cards were obtained, use of credit cards, and management of credit card debt.” Most students (71.8%) in this study were under age 25. Among them, 279 (44%) were Caucasians, about 141 (22.3%) were African-American, and 182 (29%) were Hispanic. Most students (75%) were single with monthly income less than $1,000. Their findings were “the typical university student with credit had a total debt level over $1,000 …” (Allen & Jover, 1997, p. 162).

However, only around 14% of the indebted students paid off their balance in full each month. Allen and Jover, therefore, concluded, “credit cards are heavily marketed on university campuses. The study confirmed that university students in this study are users of consumer credit cards and have high debt levels as a result of this credit usage” (Allen & Jover, 1997, p. 162).

Studies discussed above have obtained information on students’ ages, home countries (or race in the second study), and years of U.S. residency. Nevertheless, neither of these studies had ever taken these variables as independent variables, to study the relationship between these variables and students' outstanding credit card balances.

Hypotheses of the Study

This study focused on conducting an investigation of the relationship between international students' credit card ownership, number of credit cards held, and the outstanding balances owed on their credit cards and their ages, home countries and U.S. residency. Three sets of hypotheses were posed. One set each for each of the three dependent variables: international students' ownership of credit cards, number of credit cards held by international students, and the current outstanding balances owed on credit card(s) by international students.

The likelihood of international students owning at least one credit card (versus not owning any) is affected by:

1. students’ age
2. students’ years of U.S. residency, and
3. the relative prosperity of students’ home country.

The number of credit cards held by international students is affected by:

1. students' age

2. students' years of U.S. residency, and

3. the relative prosperity of students' home country.

The outstanding balances owed by international students on credit cards is affected by:

1. students' age

2. students' years of U.S. residency, and

3. the relative prosperity of students' home country.

These hypothesized effects are all based on the idea that the more exposure and experience individuals have to a product in the financial marketplace, the more they will adopt and use that product. Thus, the older an international student is, the more likely it is that s/he will own at least one credit card, the more credit cards s/he is likely to have, and the larger the outstanding balances are likely to be. The longer an international student has been living and experiencing the financial marketplace in the U.S., the more likely s/he will have at least one credit card, own more than once card, and have larger outstanding balances on credit cards. International students from more developed, higher income countries (where they are more likely to have experienced a more developed financial marketplace) are more likely to have credit cards, more likely to have more cards, and are expected to have higher outstanding balances owed than students from lower income countries.

As indicated earlier, since very little research has been done in this area, this study aims at filling the research void to some extent. This study will contribute to understanding the experiences that international students have in the U.S. financial

marketplace. Therefore, it can help international advisors assist international students in adjusting to the U.S. economic environment quickly and successfully. It may help these advisers; financial aid officers and consumer credit counselors identify the potential problems international students have with credit cards. Moreover, it can be very beneficial to the individual international student. More credit card knowledge will definitely help international students use credit cards wisely.

CHAPTER 3

METHODOLOGY

This chapter describes the methodological procedures used in this study. It presents the research design of the study, sample selection, hypotheses, measurement development, data collection procedures, and data analysis techniques.

Research Designs

In this study, an *ex post facto* research design was employed. Specifically, a multivariate cross-sectional design was used to study respectively, the effects of age and country of origin on international students' ownership of credit cards, number of credit cards owned, and the outstanding balances owed on all their credit cards.

To examine age and country of origin effects, information was obtained from each student in the sample regarding his or her age and home country. Meanwhile, the information of credit card ownership (own a credit card vs. not), number of credit cards students owned and outstanding balances the student owed on all his or her credit cards at the time s/he answered the questionnaire were recorded. Then three types of relationships were examined based on these data. The first type of relationship included the relationship between age and credit card ownership as well as the relationship between home country and credit card ownership. The second type included relationships between age and number of credit cards owned and home country and number of credit cards owned. The third type of relationships were the relationships between age and students' outstanding balances on credit cards as well as the relationship

between home country and students' outstanding balances on credit cards.

To the test the effect of years of U.S. residency on credit card ownership, number of credit cards owned and outstanding balances international students owe on all their credit cards, the students in the sample reported the years that they had been in this country, if they had any credit card, how many credit cards they had, and the outstanding balances on all their credit cards at the time they participated the survey. The differences in credit card practices between students who have been in U.S. for a longer time and students who have been in this country for a very short time were then studied to test hypotheses concerned.

There are several advantages of using a multivariate cross-sectional design in this study. First, it is a simple design and easy to implement. Second, this design helps lower the costs of data collection. What's more, ambiguity of the causal order, which is a major threat to the internal validity of a multivariate cross-sectional design, is avoided in this study, because of the nature of the independent variables. Age, country of origin and years in the U.S. all logically proceed in time a current measurement of students' ownership of and use of credit cards.

However, there are also certain disadvantages of the design. Students may be reluctant to report their outstanding balance owed on credit cards. Consequently, they could either create figures or simply leave some questions unanswered. To minimize this threat, each student was informed that the study was confidential, and that his or her name would remain disguised throughout the study. Selection is also a huge threat to the internal validity of a multivariate cross-sectional design. Usually sampling for homogeneity and the use of covariates help minimize the threat. In this study, students'

previous knowledge of credit cards, attitudes towards using credit cards and students' majors were introduced as third variables and were used as control variables.

Null Hypotheses

Three sets of null hypotheses were tested.

1. Null hypotheses about likelihood of international students' credit card ownership.
    a. There is no effect of students' age on international students' credit card ownership.
    b. There is no effect of students' home country on international students' credit card ownership.
    c. There is no effect of years of U.S. residency on international students' credit card ownership.
    d. Students' credit card ownership cannot be explained by students' age, years of U.S. residency and home country together.
2. Null hypotheses about the number of credit cards held by international students.
    a. There is no effect of students' age on the number of credit cards international students own.
    b. There is no effect of students' home country on the number of credit cards international students own.
    c. There is no effect of years of U.S. residency on the number of credit cards international students own.
    d. The number of credit cards cannot be explained by students' age, home country and years of U.S. residency together.

3. Null hypotheses about the outstanding balances owed by international students on credit cards.

a. There is no effect of students' age on the outstanding balances international students owe on all their credit cards.

b. There is no effect of students' home country on the outstanding balances international students owe on all their credit cards.

c. There is no effect of years of U.S. residency on the outstanding balances international students owe on all their credit cards.

d. The outstanding balances international students owe on all their credit cards cannot be explained by students' age, home country and years of U.S. residency together.

Sample Selection

The population of this study was defined as international students attending three major universities in Georgia. These three universities are University of Georgia (UGA), Georgia Institute of Technology (GATECH), and Georgia State University (GSU). International students included in the study were both graduate students and undergraduate students who enrolled at UGA, GATECH and GSU in the summer of 2000. These international students shared two major characteristics. First, they were permanent residents of a country other than the United States of America. Second, they had been in this country for no more than seven years, which well guarantees that the sampled students were not permanent residents of the U.S.

Once the target population was defined, the next step was to find a sampling frame for this study. There are three sources available to obtain a list of this population

at the three universities. First, each academic department at the three universities has its own student list. By pulling out international students from each departmental student list, international student lists of UGA, GATECH and GSU can be created. Second, both the graduate school and the undergraduate school at each university have their own lists of international students, which can be put together to form an overall international student list of the three universities. Third, International Student Education Offices (Names are slightly different among universities. It is called Office of International Education at GATECH and International Student Services and Programs at GSU) at the three universities revise lists of international students at the beginning of each semester. Comparatively, the lists from ISEOs are easier to get, more complete and reliable. Therefore, the lists from ISEOs were used as the population list in this study.

Having secured a sampling frame of the target population, the third step was to select the actual samples. The sampling method used in this study was a combination of a stratified random sampling and a systematic random sampling method. First, the population was divided into three strata, which were the three universities. Then, in each university, a systematic random sampling method was used to obtain samples. To use the systematic random sampling method, the number of subjects to be used in a study has to be determined in advance. Usually, a minimum sample size depends on how many independent variables are in a study. For this particular study that contains three independent variables, a minimum of 150 students should be included as the sample. However, considering that many students sampled might not have credit cards, the sample size was increased to 300 total students to make sure there were enough students who own and use credit cards. When the sample size was determined, the students were

sampled disproportionately from each stratum. That is, 100 international students were sampled from each of the three universities.

There are two reasons for this disproportionate sampling. First, because the Office of International Education at GATECH did not provide students' information to any third party, the exact number of international students enrolling at GATECH remained unknown throughout the study. Thus, it was impossible to compute proportional sample size of each stratum. Second, students studying at the three universities tend to have very different concentrations and unique characteristics. For instance, students at GATECH are more technologically oriented, students at UGA are more scientifically oriented, and most GSU students are more concentrated on practical oriented subjects such as MIS; E-commerce majors. Because different characteristics and credit card behaviors of students across the three universities were of primary interests, equal sample sizes guaranteed the comparison would be more effective.

The last job of selecting the samples was to compute sampling ratio $r_i = Ni/n$, where Ni is number of sampling units in stratum *i* and n is the sample size for each stratum. The list of international students in UGA summer school in the year of 2000 contained 2,433 students. Therefore, the ratio $r_1=2,433/100=24.33\approx24$. That is, after a starting number from the UGA international student list was randomly selected, every 24th individual student from the list was picked until 100 students were chosen to form a sample from the stratum of UGA. Similarly, there were 1,826 international students in the list provided by GSU, so the sampling ratio of GSU stratum was $r_2=N2/n=1826/100=18.26\approx18$. Thus, every 18th student was picked after the first student was randomly selected from the list until 100 GSU international students were obtained.

Different from the above two universities, Office of International Education at GATECH conducted the whole procedures of computing sampling ratio and selecting samples by themselves. Therefore, the population size and sampling ratio of GATECH stratum remain unknown. Office of International Education, however, guaranteed that the 100 GATECH international students were selected in an absolutely random manner.

Comparatively, the systematic random sampling method is superior to most other kinds of probability sampling methods with maximum external validity. In addition, it is very simple and quick to implement, and easy to analyze data and compute sampling errors. Stratified random sampling method assures representativenss of sample with respect to stratification variables. Furthermore, compared to the proportionate stratified random sampling method, the disproportionate stratified random sampling is believed to be more efficient when making comparison across strata (i.e. across the three universities in this study).

However, for the systematic random sampling method, there is always one potential problem involved. A periodical arrangement of elements in a sample list can make systematic random sampling unwise. In this particular study, the lists of the international students' last names were in alphabetical order. A possible problem could be that people from certain countries might not have some letters as surnames. For example, very rare do people from China have surnames starting with A or E, and most people, say from the Middle East, have surnames starting with A or E. It was very likely that most people with names starting with A or E were eliminated from the study by systematic random selection because of the small population of students from Middle East countries. Had this happened, the variety of country origins could have been

minimized, which could have directed to a negative effect on the external validity of this study. Fortunately, this did not happen in this study. Because, for security reasons, the sample lists provided by UGA and GSU were cut into small pages to eliminate students' social security numbers and were rearranged thereafter. In this case, though the periodical order existed in each page, between pages, there was no such kind of order. Consequently, country variety was large: 99 respondents came from 36 countries and regions (see the complete country list in Appendix C) and from all income levels. In other words, on average, every 2.75 respondents shared the same country origin. For data analysis purposes, the country of origin variable was eventually clasped into two groups --- countries with higher incomes (developed countries) and countries with lower incomes (developing countries). As 43 respondents fell into the higher income country group and another 55 respondents fell into the lower income country group, the number in each group was sufficiently large to represent international students coming from countries with various economic situations.

Measurement Development

This part describes how the dependent variables, independent variables and control variables were coded and measured. Consult Appendix A for a complete questionnaire and Appendix B for complete coding information.

The constructs that were the focus of this study were credit card ownership, number of credit cards students held, and the outstanding balance these students owed on all their credit cards. The variable of credit card ownership was a categorical variable. The variable of outstanding balance international students owe on all their credit cards

was treated as a continuous variable, measured in dollars. Students' number of credit cards held was as a continuous variable too, but it was measured in units instead.

To measure the dependent variables, a self-report method was used. The specific instrument that was employed in this study was a pencil and paper questionnaire. The questionnaire contained three categories. Questions in the first category asked if a student in the sample had credit cards. "Yes" answers were coded as 1 and "no" answers were coded as 0. If the student's answer was yes, then the student was asked how many cards s/he had and what kind(s). The answers to the question of how many credit cards they had were coded in one digit numbers. The second category contained questions concerning the outstanding balances international students owed on their credit cards, the amount of their monthly payments on their credit card debts, the frequency of their paying off credit card bills in full monthly, and their monthly income. The outstanding balances on credit cards respondents owed were coded in five digit numbers that were measured in dollars. Their monthly debt payments and monthly income were coded from 1 to 12 according to respondents' answers from A to L in the questionnaires. The frequency of paying off credit card bills in full was coded from 1 to 5, with 1 referring to "always pay off bills in full monthly" and 5 referring to "never pay off credit card bill in full monthly." Questions in the third categories asked about international students' criteria of obtaining their credit cards. "Yes" answers were coded as 1 and "No" answers were coded as 0.

Information about the independent variables of respondents' age, years of U.S. residency and country of origin was obtained by asking them questions like "what is your age in years?" " How many years have you been living in this country?" " What is your

home country?" Ages were coded as two digit numbers from 17 to 51. Years of U.S. residency was coded as 1 digit number from 1 to 7. Home countries were coded from 1 to 4: high-income countries (with an annual per capita income ranging from $45,440-$9,680), upper middle-income countries (with an annual per capita income ranging from $8,570-$3,130), lower middle-income countries (with an annual income ranging from $3,120-$800) and low-income countries (with an annual income ranging from $750-$0). This criterion was based on the World Bank Atlas GNP per capita annual income classification of 1999 (Appendix D).

Information on international students' previous knowledge of credit and credit cards was gathered by asking questions such as "When you last lived in your country, was credit available to purchase consumer goods like cars and furniture?" "Did you use credit cards?" "Yes" answers to the questions were coded as 1 and "No" answers were coded as 0. Questions about international students' attitudes towards using credit and credit cards also had "Yes" or "No" answers. Again, "Yes" answers were coded as 1 and "No" answers were coded as 0. Students' majors were categorized into three groups. Arts and science majors were coded as 1, engineering majors were coded as 2, and all other majors were coded as 3.

Data Collection

Data used for this study were collected by sending out questionnaires. Since human subjects were involved into this study, a pre-approval from the Human Subjects Office at the University of Georgia was required. To get such an approval, a thesis proposal and a draft of the questionnaire were sent to the office on April 2, 2000. An

approval form (Appendix E) was received on April 11, 2000. The form indicated that the data collection period should be from April 11, 2000 to June 30, 2000.

The International Student Education Office at UGA prepared a complete list of international students registered in summer school on May 5, 2000. To ensure a high response rate, the first 100 questionnaires were not sent out to UGA international students in the sample until May 15, 2000, the first day of summer school. Each package sent to students in the sample contained a questionnaire; a cover letter (Appendix A) and a postage-paid return envelope. The cover letter described the purpose of the study and instructed students how to fill out the questionnaire and return it properly. Meanwhile, it assured the confidentiality and emphasized the importance of the study and benefits it might bring to all international students studying in the U.S.A.

To obtain a complete list of international students enrolled in summer school at GSU, a request letter was sent on May 17 to Dr. Douglas Podoll who is in charge of International Student Services and Programs. The list was received on May 20 2000, and another 100 questionnaires and cover letters were mailed to the students in the sample on May 24, 2000.

As mentioned earlier in this chapter, the Office of International Education at GATECH did not disclose any information about their students even after they were shown a supporting letter from Dr. Godwin, supervisor of this study and the approval form from Human Subjects Office at UGA. In this case, some agreements were reached in order to continue the study. First, the office performed all the required sampling procedures by themselves. Second, in addition to a cover letter and a questionnaire, a letter from Ms. Linda Duckworth (Appendix F), the associate director of International

Education, was attached to each questionnaire package. The letter explained the reason and way that the 100 students were chosen to answer the questionnaire, and assured them of the confidentiality again. Third, the office provided students' on-campus addresses only. Envelopes were addressed in the office, and the packages were sent directly by Ms Linda Duckworth to the campus post office and delivered to students' mailboxes via campus mail. Based on these agreements, the last 100 questionnaires were finally sent to GATECH international students in the sample on May 24, 2000.

By August 31, 2000, a total of 135 questionnaires were returned. Among the returned questionnaires, 28 were returned undeliverable and 8 were from students who were not eligible for this study. The remaining 99 questionnaires were from international students eligible for this study. Subtracting the 36 unusable ones, the respond rate was 37.5%.

Data Analysis Techniques

The sample means, standard deviations, and frequency distributions for all variables were calculated by using the Statistical Analysis System (SAS). These descriptive statistics were obtained to answer the first research question. They provided general information such as the mean age, years of U.S. residency and country origin of the respondents, as well as their attitudes towards using credit cards and ownership of credit cards.

Logistic regression analysis was used to test the first set of three null hypotheses about credit card ownership, because the level of the measurement of the dependent variable was dichotomous. In the logistic regression analysis, Wald Chi-square, standardized estimate, odds ratio and p-values were calculated to determine the

significance of the effect of an independent variable on a dependent variable. If the p-value associated with a Wald Chi-square is less than or equal to 0.05, the null hypothesis is rejected and determined to be statistically significant. The standardized logistic estimate ranges from approximately -1 to 1, indicating not only the strength of the relationship between an independent variable and a dependent variable, but the direction of the relationship. A p-value of <0.05 indicates statistical significance of the relationship between an independent variable and the dependent variable. Odds ratio, χ^2, and the pseudo R^2 were calculated for the equations.

As a majority of respondents (92%) reported owning at least one card, multiple regression analysis was employed to test the second set of null hypotheses about number of credit cards students had. β-values, t-values, and b-values were calculated in this analysis. If the p-value associated with a t-value is less than or equal to 0.05, the null hypothesis is rejected. The unstandardized regression coefficient (b-value) indicates a positive or negative relationship between the dependent variable and an independent variable. The standardized regression coefficient (β) shows the relative strength of the relationships among the independent variables and the dependent variables. F-value, R^2 and adjusted R^2 were also examined to see if the dependent variable could be explained by the set of six independent variables, and if so, to what extend it could be explained.

Due to the fact that 43% of the respondents had $0 outstanding credit card balances, the distribution of the outstanding balances on credit cards was not a normal one. Therefore, a multiple regression model was not appropriate to test the third set of hypotheses, which was concerned with outstanding balances international students owed on all their credit cards. However, eliminating the group of people with 0 outstanding

balances would result in sample selection bias. In this case, Tobit analysis was considered as a proper data analysis technique used for this study, because "Tobit analysis treats models with censored error terms in which the censored dependent variable has a large proportion of values clustered at some limit" (Godwin & Marlowe, 1990, p33). In other words, Tobit uses all sample observations (in this study, the outstanding balance on credit cards from 0 to the maximum dollar amount) to estimate a model for the entire population.

In the Tobit analysis, the Tobit coefficients and t-values were examined to study the direction and strength of the relationship between the dependent variable and each independent variable. A negative value of the Tobit coefficient shows a negative relationship between the dependent variable and the independent variable, which can be interpreted as the dependent variable decreasing with an increase in the independent variable. Same as the other two analysis methods stated above, $p<0.05$ is considered as indicating statistical significance. Thus, the null hypotheses are rejected when the p-value associated with a Chi-square for each independent variable is at or below this level.

CHAPTER 4

RESULTS

This chapter presents and interprets results of the study. First, respondents' demographic information is summarized. Second, their financial situation in both their home countries and the U.S. is described. Third, the respondents' credit card ownership and their attitudes toward credit are reported. Finally, the results of hypothesis tests and relationships between dependent variables and independent variables are explained.

Demographic Information of the Respondents

Table 2 summarizes the demographic information of the respondents. As stated earlier, 107 out of 300 sampled international students who attended summer school at UGA, GSU and GATECH in the year 2000 returned the questionnaires. Excluding eight respondents who were not eligible for this study, the other 99 answers to the questionnaires were used as final data for this study. The mean age of the respondents was 27.5, with the youngest aged 17 and oldest respondent being age 51. Approximately 46% of respondents fell into the age group of 26-30 and about 28% of respondents were in the age group of 21-25. Among the 99 respondents, 39 students came from high-income countries (as coded by a World Bank criterion) and 44 students came from lower middle income countries. Among the other 16 students, four came from upper middle income countries and 12 others came from low-income countries. As the majority of students were either in the high-income country group (39.4%) or lower middle income group (44.5%), the four groups

Table 2

Description of the Sample (n=99)

Variable	f	%	Mean S.D.
Age (Years)			
17-20	7	7.1	27.5
21-25	27	27.6	5.1
26-30	45	45.9	
31-35	12	12.3	
36-40	6	6.1	
>40	1	1.0	
Missing value	1		
Country of Origin (World Bank grouping)			
High income countries	39	39.4	
Upper middle income countries	4	4.0	
Lower middle income countries	44	44.5	
Low income countries	12	12.1	
Number of years live in U.S. (Years)			
< 1	23	23.2	2.5
2-3	47	47.5	1.6
4-5	21	21.2	
6-7	8	8.1	
Gender			
Female	44	43.4	
Male	55	56.6	
Marital status			
Single	60	60.6	
Married for first time	37	37.4	
Remarried, not first time	0	0.0	
Divorced or widowed	1	2.0	
Missing value	1		
Major			
Arts and sciences	33	34.0	
Engineering	25	25.8	
Others	39	40.2	
Missing value	2		

Table 2

(Continued)

Variable	f	%	Mean S.D.
Degree			
BA/BS	16	16.2	
Masters	36	36.3	
Ph.D.	47	47.5	

were collapsed into two for data analysis. The group of high-income countries included both high-income countries and higher-middle income countries. Low- income countries included both lower-middle income countries and low-income countries.

The average number of years of U.S. residency was 2.5 with a range from 9 months to 7 years (the maximum for eligibility for this study). The majority of the respondents (68.7%) had been living in this country from 2 years to 5 years. Slightly over half (56.6%) of the respondents were male students and most of the respondents (60.6%) were single in terms of marital status. Respondents' majors were almost evenly spread, with 33 students being arts and science majors, 25 students being engineering majors and 39 students having other majors. Of the 99 respondents, 47 students were pursuing their Ph.D. degrees, 36 students were pursuing their masters' degrees, and another 16 respondents were undergraduate students

Financial Situation of the Respondents

The financial situation of the respondents is presented in Table 3 in two parts, in their home countries and in the U.S. An overwhelming percent (91%) of students reported that their personal financial situation in their home countries was middle or high status. Among those reporting middle or high status, 44 students (44.5%) reported that their incomes were in the high-income class and 46 students (46.5%) were in the middle-income class. Only nine students (9%) reported that they were in the low-income class in their home countries. However, contrary to these facts, only a small number of students reported owning houses or cars in their home countries. Around 23% of the students reported owning houses and 35% reported owning cars at home. When compared with

Table 3

Financial Situation of the Sample in Both Home Country and the U.S. (n=99)

Variable	f	%	Mean S.D.
Financial Situation in Home Country			
Personal financial situation in home country			
Low	9	9.0	3.4
Middle	46	46.5	0.8
High	44	44.5	
Ownership of a house			
Yes	23	23.2	
No	76	76.8	
Ownership of a car			
Yes	35	35.4	
No	64	64.6	
Financial situation in the U.S.			
Overall financial situation in the U.S.			
Worse	35	35.4	2.9
Almost the same	39	39.3	1.0
Much better	25	25.3	
Sources of income			
Scholarship/assistantship			
Yes	113	57.5	
No	85	42.5	
Jobs, working for pay			
Yes	22	22.2	
No	77	77.8	
Gifts from relatives			
Yes	22	22.2	
No	77	77.8	
Other sources of income			
Yes	28	29.3	
No	71	70.7	

Table 3

(Continued)

Variable	f	%	Mean S.D.
Total monthly income			
$0	3	3.1	$1475.0
$1-$250	5	5.1	733.9
$251-$650	9	9.3	
$651-$1500	56	57.8	
>$1501	24	24.7	
missing value	2		

their financial situation in the U.S., 39 students believed that their situation remained almost the same. Another 35 students felt that their financial situation in the U.S. was worse than it had been in their home countries. The remaining 25 students reported that their financial situation was improved when they came to the U.S. The majority of respondents had monthly income in the U.S. The average monthly income of students was $1,475 with a standard deviation of about $734. In term of sources of income, most students (57.5%) received money from either scholarships or assistantships. Small numbers of students also received income from jobs (22.2%), gifts from relatives (22.2%), or other sources, such as loans from their countries or from banks (29.3%).

Credit Card Ownership

Except for eight students who reported having no credit card, most students (92%) reported having at least one credit card. What's more, 38 students reported having two to three credit cards, 19 students reported having four to five credit cards and 11 students reported having six or more credit cards. The mean total number of credit cards that students had was 2.9 cards. Breaking these down into types of credit cards is revealing. Only ten students had no general bank card. Most (66.6%) students had one to two bank cards. Almost a fourth (23.3%) had 3 or more bank cards. Comparatively, other types of credit cards were not owed by so many students. About 36.4% of students reported that they had at least one travel and entertainment card, 24.2% of students reported having department store cards, 6.1% of students reported having gasoline cards, and 5.1% of students reported having some other type of credit cards. Studying the mean numbers of cards held by students, no type of credit card except bank cards had a mean number of cards held greater than one card. This showed that bank cards are the most popular credit cards

Table 4

Credit Card Ownership of the Sample (n=99)

Type of credit card	f	%	Mean S.D.
Ownership vs. not			
Ownership	91	91.9	
Not	8	8.1	
Total number of credit cards			
0	8	8.1	2.9
1	23	23.2	2.5
2-3	38	38.4	
4-5	19	19.2	
6-10	10	10.1	
>10	1	1.0	
Ownership of each type of credit card			
General card(s)			
0	10	10.1	1.9
1-2	66	66.6	2.3
3-4	16	16.2	
>4	7	7.1	
Travel and entertainment card (s)			
0	63	63.6	0.5
1-2	34	34.4	0.7
3-4	2	2.0	
Department store card (s)			
0	75	75.8	0.5
1-2	19	19.2	0.9
>=3	5	5.0	
Gasoline card (s)			
0	93	93.9	0.1
>=1	6	6.1	0.2
Other types of card			
0	94	94.9	0.1
>=1	5	5.1	0.2

among international cardholders, followed by travel & entertainment cards and department store cards.

Credit Card Experiences and Attitudes Toward Credit

Like the information on international students' financial situation, information on respondents' credit card experiences was also presented in two categories, their experiences in their home countries and in the U.S. (Table 5). Most respondents reported that they had some knowledge of or experience with credit and credit cards before they came to the U.S. About 57.6% of respondents reported that credit was available to purchase a home in their countries of origin. Approximately 70.4% of respondents reported that credit was available to purchase consumer goods such as cars and furniture in their home countries, and 82.8% of respondents reported that credit cards were available in their home countries.

However, although credit is generally available in their home countries, their direct experiences with credit and credit cards was relatively infrequent. Answering the questions concerning their own credit and credit card practices in home countries, only 4% of respondents reported having used credit for purchasing a home and only one-fifth of (20.2%) respondents reported having used credit to purchase cars. Less than half of these students (44.4%) reported that they used credit cards in their home countries.

Information on international students' credit and credit card experiences in the U.S. was obtained by asking questions about whether they were currently using any credit cards they owned to pay for their vacation trips, living expenses, cars, jewelry and educational expenses. Few respondents reported that they were using credit cards to finance educational expenses (24.2%), pay for living expenses (21.4%), finance a car (15.2%), or finance the

Table 5

Credit Card Experiences and Attitudes toward Credit Cards (n=99)

Variable	f	%
Credit experiences in home country		
Was credit available to purchase a home		
Yes	57	57.6
No	42	42.4
Was credit available to purchase consumer goods like cars?		
Yes	69	70.4
No	29	29.6
Missing value	1	
Were credit cards available?		
Yes	82	82.8
No	17	17.2
Did you use credit to purchase a home		
Yes	4	4.0
No	95	96.0
Did you use credit to purchase consumer goods like cars?		
Yes	20	20.2
No	79	79.8
Did you use credit cards		
Yes	44	44.4
No	55	55.6
Credit experiences in the U.S.		
Paying the expense of a vacation trip		
Yes	49	49.5
No	50	50.5
Paying living expense		
Yes	21	21.4
No	77	78.6
Missing value	1	

Table 5

(Continued)

Variable	f	%
Financing the purchase of a car		
Yes	15	15.2
No	84	84.8
Financing the purchase of fur coat or jewelry		
Yes	13	13.1
No	86	86.9
Financing educational expenses		
Yes	24	24.2
No	75	75.8
<u>Attitudes toward credit and credit cards</u>		
Feel Ok to pay the expense of a vacation Trip		
Yes	71	71.7
No	28	28.3
Feel Ok to cover living expense when income is cut		
Yes	55	55.6
No	44	44.4
Feel Ok to finance purchase of fur coat or jewelry		
Yes	43	43.4
No	56	56.6
Feel Ok to finance educational expenses		
Yes	86	86.9
No	13	13.1
Feel Ok to finance purchase of a car		
Yes	76	76.8
No	23	23.2
<u>Factors to consider when obtaining credit card (s)</u>		
Low-interests cost or APR on the card		
Yes	50	55.6
No	40	44.4
Missing value	9	
Low annual fee or no annual fee		
Yes	85	94.4
No	5	5.6
Missing value	9	

Table 5

(Continued)

Variable	f	%
Ease of getting the card with no credit History		
Yes	53	58.9
No	37	41.1
Missing value	9	

purchase of jewelry (13.1%). However, about 50% of respondents reported paying for their vacation trips by using credit cards.

International students answered questions concerning their attitudes toward using credit and credit cards. Most students responded that they felt it is acceptable to use credit cards to pay the expense of a vacation trip (71.7%) and to finance educational expenses (86.9%). Over half of the respondents (55.6%) felt it is acceptable to pay living expense when income is cut. Only a minority of respondents (43.6%) agreed with the idea of using credit or credit cards to finance the purchase of jewelry.

The responses regarding their personal financial situation may help illustrate their attitudes toward using credit and credit cards. As stated earlier, most international students studying in the U.S. have secure incomes; therefore, few of them need to use credit cards to finance their education and living expenses. Most students did not support the idea of financing jewelry by credit cards, which indicates their attitudes toward credit vary by the purpose to which the borrowing is directed.

When asked about the factors to consider when obtaining their credit card, most students (94.4%) expressed that they preferred credit cards with a lower annual fee or no annual fee. About 55.6% of students wanted to obtain cards with low-interest rates or annual percentage rate (APR). Over half of the students (58.9%) reported that the ease of getting credit cards with no credit history was very important to them.

In addition to the above information, in a final open-ended question, many students gave more information about their attitudes and concerns about credit cards. Ten students expressed that credit cards were useful, safe and convenient. Using credit cards could help to build up students' credit histories, which were necessary for living in this country.

Twelve students suggested that people should use credit cards carefully, wisely and responsibly. Eight other students believed that credit cards in the U.S. were unsafe. Credit cards in the U.S. were too easy to access for young people, and tended to put people into debt. Another seven students said that it was hard for international students to get credit cards because of their non-U.S. citizenship status. For detailed information about comments from students, see Appendix G.

Tests of Hypotheses

The focus of the study was on the effects of country of origin, age and years of U.S. residency on international students' credit card ownership, number of credit cards and credit card outstanding balance. Logistic regression analysis was used to study the effects of country of origin, age and years of U.S. residency on credit card ownership. Multiple regression analysis was employed to study the effects of the independent variables on number of credit cards international students owned. Tobit analysis was used to study the effects of the three independent variables on outstanding balances international students owe on all their credit cards. Each of these three types of analysis was done on two models. Each initial model included three independent variables only, results from which were used to answer the second research question. In the final models, three control variables were also included. They were international students' major, monthly income, and attitudes toward credit cards. Results derived from the final models were used to answer the third research question.

Table 6 summarizes the results of the logistic regression analysis of credit card ownership. None of the three independent variables was statistically significant in either model. Their chi-squares were very small and the associated p-values were very large.

Therefore, the first set of null hypotheses about credit card ownership was accepted. Neither students' age, country of origin, nor years of U.S. residency was related to their likelihood of owning a credit card. In the final model, the variable of monthly income, however, appeared statistically significant with a chi-square of 4.198 and the associated p-value of < 0.05. The coefficient (-0.002) suggests a negative relationship between monthly income and credit card ownership. The less monthly income a student has, the more likely it is that s/he owns one or more credit card(s). None of the other five variables was statistically significant. The pseudo-R^2 indicates there is about a 19% improvement in the efficacy of this model over a null model. This is a relatively large effect, given only one statistically significant independent variable.

Table 7 summarizes the results of tests of the effects of the three independent variables on the number of credit cards students owned, using multiple regression analysis. The initial model contained the three independent variables only. Years of U.S. residency showed a statistically significant relationship with the number of credit cards owned with a t-value of 2.83 and an associated p-value of <0.01. The unstandardized regression coefficient ($b=0.428$) indicates that there is a statistically significant positive relationship between years of U.S. residency and the number of credit cards international students own. This relationship is moderately strong, as confirmed by the standardized regression coefficient ($\beta=0.27$).

In the final model, besides the number of years of U.S. residency, students' age was also statistically significant with a t-value of 2.12 and an associated p-value of <0.05. The unstandardized regression coefficient ($b=0.087$) indicates that there is a statistically

Table 6

Results of Logistic Regression Hypotheses Test for Students' Credit Card Ownership (n=98)

Variables	Initial model			Final model		
	Coefficient	Wald Chi-square	Odds ratio	Coefficient	Wald Chi-square	Odds ratio
Age	-0.101	1.336	0.90	0.035	0.123	1.04
Country of Origin						
Higher income countries	0.242	0.106	1.27	-0.132	0.022	0.88
Lower income countries (omitted)						
Number of years of U.S. residency	0.010	0.002	1.01	0.136	0.264	1.15
Monthly income				-0.002	4.198*	0.10
Attitudes toward credit cards				0.371	0.993	1.45
Major						
Arts and sciences major				-1.979	2.337	0.14
Engineering major				-0.707	0.323	0.49
Other (omitted)						
Intercept	0.109			-2.716		
Model						
χ^2	1.623			9.433		
p-value	0.645			0.223		
Pseudo R^2	0.012			0.188		

***p<.001 **p<.01 *p<.05

Table 7

Results of Multiple Regression Hypotheses Test for Numbers of Credit Cards Students Owned (n=98)

Variables	Initial model			Final model		
	b-value	β-value	t-value	b-value	β-value	t-value
Age	0.086	0.18	1.83	0.087	0.20	2.12*
Country of origin						
Higher income country	-0.549	-0.11	-1.14	-0.121	-0.03	-0.28
Lower income country (omitted)						
Number of years of U.S. Residency	0.428	0.27	2.83**	0.321	0.24	2.50*
Monthly income				0.001	0.18	1.80
Attitude towards credit cards				0.024	0.01	0.15
Major						
Arts and sciences major				0.457	0.10	0.92
Engineering major				1.147	0.23	2.17*
Other (omitted)						
Intercept	-0.455			-1.755		
F-value	4.940**			3.820**		
R^2	0.136			0.223		
Adjusted R^2	0.109			0.172		

***p<.001 **p<.01 *p<.05

significant positive relationship between age and the number of credit cards students own. The older an international student is, the more credit cards s/he will have. This relationship is moderately strong, as confirmed by the standardized regression coefficient (β=0.20).

Another variable that was statistically significant was students' major (engineering major vs. other majors). Its t-value was 2.17 with an associated p-value of <0.05. The unstandardized regression coefficient (b=1.147) indicates there is a positive relationship between being an engineering major and the number of credit cards international students own. That is, engineering major students tend to have more credit cards than students with other majors do. The β-value (0.23) indicates that the relationship is moderately strong.

The F-value in the second model was statistically significant with an associated p-value of <0.01. This indicates that the independent variables together could explain a statistically significant proportion of the dependent variable - the number of cards international students have. The adjusted R^2 indicates that about 17 percent of the observed variability in international students' number of credit cards owned was explained by the six independent variables.

Table 8 summarizes the outstanding balances international students owed on credit cards. The frequency distribution of the total balance owed on all credit cards indicates that many students (almost 45%) had no outstanding balance. This suggests that a substantial number of international students may be convenience users of credit cards. Of the remaining students, who would be termed revolvers, the modal category of debt owed is between $201 and $800, a relatively modest amount of debt. Only about 10 percent of students owed more than $1,500 on their credit cards. Of these, about one-third (5 percent of the total sample) owed more than $4,000 on their credit cards. This amount of debt is a

substantial amount for students to owe on credit cards. The mean of total outstanding balances on all credit cards was $890.30, with $754.50 owed on bank cards, $79.60 on travel and entertainment cards, $31.30 on gasoline cards, $15.80 on department store cards and $9.10 on other types of cards. The average monthly payment on credit cards was $410.60.

Table 9 presents the results of the Tobit analysis to test the hypotheses about outstanding balances international students owed on all their credit cards. The initial model contained the three independent variables only. None of the independent variables in this model was statistically significant. However, in the final model, the variable of country of origin became statistically significant when controlling monthly income, major, and attitudes toward credit cards. The chi-square of country of origin was 11.03 with an associated p-value of < 0.001. Its Tobit coefficient is 0.002, which showed a positive relationship between students' country of origin and outstanding balances they owed on all their credit cards. That is, students coming from higher income countries are more likely to have credit card debt outstanding than students from lower-income countries. In addition, if they have credit card debt, they tend to carry higher outstanding balances than students coming from lower income countries do.

In the final model with the three additional control variables included, another two variables showed statistically significant effects on the dependent variable of outstanding balances international student owe on all their credit cards. Monthly income had a chi-square of 10.84 with p-value less than 0.001. The Tobit coefficient of -1.509E-6 showed a negative effect on outstanding balances on credit cards. The more monthly income an international student has, the less likely s/he is to have credit card debt outstanding. If

Table 8

Balances Owed on Credit Cards (n=99)

Variable	f	%	Mean S.D.
Balance on each type of credit card			
Bank Card(s)			
$0	47	47.5	$754.50
$1-$240	11	11.1	1574.10
$241-$500	17	17.2	
$501-$1,500	10	10.1	
$1,501-$4,000	9	9.0	
>$4,000	5	5.1	
Travel and entertainment cards(s)			
$0	85	85.9	$79.60
$1-$100	4	4.0	342.20
$101-$400	4	4.0	
>$400	5	6.1	
missing value	1		
Department store card(s)			
$0	91	91.9	$15.80
$1-$60	3	3.0	102.30
$61-$100	3	3.0	
>$100	2	2.1	
Gasoline card(s)			
$0	97	98.0	$31.30
$1-$600	1	1.0	257.80
>$600	1	1.0	
Other type of card(s)			
$0	98	99.0	$9.10
>$0	1	1.0	90.50
Total outstanding balances on all credit card(s)			
$0	44	44.4	$890.30
$1-$200	10	10.1	1857.10
$201-$800	18	18.2	
$801-$1,500	12	11.1	
$1,501-$4,000	10	10.1	
>$4,000	5	5.1	

Table 8

(Continued)

Variable	f	%	Mean S.D.
Total monthly payment on credit card(s)			
$0	25	25.8	$410.60
$1-$199	26	26.8	554.60
$200-$750	27	27.8	
>$750	19	19.6	
missing value	2		

Table 9

Results of Tobit Regression Analysis Hypotheses Tests for Outstanding Balances International Students Owe on All Their Credit Cards (n=99)

Variable	Initial model		Final model	
	Tobit coefficient	Chi-square	Tobit coefficient	Chi-square
Age	7.08E-6	0.10	3.34E-5	0.49
Country of origin				
Higher income countries	7.60E-5	0.08	2.11E-3	11.03***
Lower income countries (omitted)				
Number of Years of U.S residency	-1.07E-4	1.65	3.40E-4	3.57
Monthly income			-1.51E-6	10.84***
Attitudes towards credit cards			3.50E-4	2.86
Major				
Arts and sciences major			3.27E-3	17.57***
Engineering major			3.51E-3	19.43***
Other (omitted)				
Intercept	1.81E-4		1.89E-3	

***p<.001 **p<.01 *p<.05

students have credit card debt, high income students tend to carry lower outstanding balances on credit cards than students with lower monthly income do.

The students' major was another variable that had a statistically significant effect on outstanding balances international students owed on all their credit cards. The chi-squares of arts and sciences majors and engineering majors were, respectively, 17.57 and 19.43 with associated p-value of <0.001. The relationships between major and outstanding balances international students owed on all their credit cards were positive. More specifically, students with arts and sciences majors and engineering majors are more likely to have credit card debts than students of other majors do. Furthermore, if they have credit card debt, they tend to owe more money than students of other majors do. Table 10 summarizes the findings reported in this chapter. Among the null hypotheses, three were rejected and six others were accepted. International students' age had a significant positive effect on number of credit cards international students own. However, it did not show any statistically significant effect on either credit card ownership or outstanding credit card balances. Students' country of origin had a positive effect on outstanding balances on credit cards (students from higher income countries carried higher balances than other students), but did not show any statistically significant effect on the other dependent variables. Years of U.S. residency showed a statistically significant positive effect on number of credit cards international students owned, but did not show any statistically significant effect on the other two dependent variables.

Along with these major independent variables, three other control variables were also tested in terms of their effects on the dependent variables. Monthly income showed significantly negative effects on credit card ownership and outstanding balances owed on

Table 10

Summary of Factors Affecting International Students' Credit Card Ownership, Numbers of Credit Cards and Outstanding Credit Card Balances

Independent variables	Credit card ownership	Numbers of credit cards	Outstanding credit card balances
Age	0	+	0
Country of origin			
Higher income countries	0	0	+
Lower income countries (omitted)			
Years of U.S. residency	0	+	0
Monthly income	-	0	-
Major			
Arts and sciences majors	0	0	+
Engineering major	0	0	+
Others (omitted)			
Attitudes toward credit	0	0	0

O = no statistically significant effect of independent variable on dependent variable
+ = significantly positive effect of independent variable on dependent variable
- = significantly negative effect of independent variable on dependent variable

credit cards. Students' major had positive significant effects on outstanding balances on credit cards as well as number of credit cards international students own. Compared to other students, arts and sciences and engineering students were more likely to carry an outstanding balance (versus being convenience users) and carried higher outstanding balances on their credit cards.

CHAPTER 5

SUMMARY, CONCLUSIONS AND IMPLICATIONS

The purpose of this study was to examine the effects of three independent variables, international students' age, country or origin, and years of U.S. residency, on international student's ownership of credit cards, number of credit cards they have, and outstanding balances they owe on all their credit cards. Results from statistical analyses were used to answer research questions like: to what extent do international students own and use credit cards? Can the three dependent variables be explained by the three independent variables, and if yes, to what extent? Controlling for students' monthly income, major, and attitudes toward credit, will those three independent variables be significant in terms of effects on the dependent variables?

Data used for this study were collected from a sampling frame of 300 international students studying at the University of Georgia, The Georgia State University and the Georgia Institute of Technology in summer school 2000. There were 135 returned questionnaires with 99 usable ones. The response rate was 37.5%. The Statistical Analysis System (SAS) was used to conduct the statistical analysis of the data. Logistic regression analysis, multiple regression analysis and Tobit regression analysis were used to test the hypotheses and examine the data.

The international students in this study ranged in age from 17 to 51 with a mean age of about 28 years old. About 43 percent came to the U.S. from high- income countries, as classified by World Bank Gross National Product per capita (such as Canada, Japan

and Germany) and 45% from middle-income countries (such as P.R. China, India, and Colombia), and 12% from the low-income countries (e.g. Armenia, Kenya, and Nigeria). The students had been in this country from less than one year up to seven years with an average of 2.5 years.

Most international students in this study (92%) had at least one credit card. Among them 38 students had two to three credit cards, 19 students had four to five credit cards and 11 students had six or more credit cards. About half of the students in this study (45%) did not have an outstanding balance on credit card. Of the remaining students, 10 of them had credit card debt between $1-$200, 18 of them had credit card debt between $201 and $800. Only about 15% of students owed more than $1,500 on their credit cards. The mean of total outstanding balances international students owed on all their credit cards was $980.30.

The majority of students in this study had secure sources of income. Most students (57.5%) received their monthly income from scholarships and/or assistantships. There were also some students who received income from jobs (22.2%), gifts from relatives (22.2%), or loans from banks or their countries (29.3%). About 34% of the students in this study were arts and sciences majors (such as mathematics, statistics, and linguistics), 25.8% of the students were engineering majors (such as electronic engineering, industrial engineering, and bioengineering), and 40.2% of the students were other majors (such as consumer economics, marketing, and Management of Information System/Computer Information System). Attitudes toward credit varied among international students in this study. About 72% of students felt it is acceptable to use credit to finance a vacation trip, and about 87% of students felt it is appropriate to use credit to finance educational

expenses. Slightly over half of students (55.6%) agreed that it is all right to use to pay living expenses when income decreases. The majority of students (57%) disapproved of using credit to finance the purchase of fur coats or jewelry.

Conclusion

On the basis of the findings, the following conclusions were derived:

1. Age does not have a significant effect on international students' ownership of credit cards, nor does it have any significant effect on outstanding balances international students owe on all their credit cards. However, it does have a significant effect on the number of credit cards international students have. The effect was positive; thus, the relationship between age and number of credit cards international students have suggests that the older an international student is, the more credit cards s/he tends to have. This is true even when number of years of U.S. residency and monthly income are statistically controlled. This relationship might reflect the additional experience with credit or the additional credit worthiness that comes with age. Usually, a credit card company would be willing to offer cards to people more responsible. And the increasing of age is often believed associated with an increase in maturity and sense of responsibility. This may explain why it is easier for an older international student to get credit cards than for a younger international student. Also, more yes here mean a student knows more about applying for credit – may have a credit history (e.g. from a car loan) or simply paying bills such as utilities and housing rent). The student may have more work history.

2. Students' country of origin does not have any significant effect on neither international students' credit card ownership nor number of credit cards international students have. However, it does have a significant effect on outstanding balances

international students owe on all their credit cards. Comparatively, students from higher income countries tend to carry higher outstanding balances on credit cards than students from lower income countries. Again, this relationship is significant when age, years of U.S. residency and monthly income are controlled. Students who come from countries where they have likely been exposed to more developed financial markets appear to be more willing to revolve debt and to revolve higher balances on their credit cards. Students from more developed countries with more credit and credit card experiences will have more knowledge of debt repayment. Therefore, they will tend to carry more debts on credit cards than students from developing countries do. Students with more knowledge of credit and credit card may be more confident in dealing with credit card debts. Thus, they are not as afraid of carrying some debts on credit cards as those students with less related knowledge. Also, they may be accustomed to higher standard of living and have desire to buy more. For example, their set of preferences for certain goods is different from students from lower developed countries.

3. Years of U.S. residency has a positive effect on number of credit cards international students have, but not on whether or not they own any cards or the outstanding balances they owe. Their relationship could be interpreted as the longer an international student resides in this country, the more credit cards s/he will have. This is because students who have been in the U.S. for a longer time will have more credit history, which is very helpful when they apply credit cards. As addressed earlier, a longer and better credit history in the U.S. is the primary thing that a credit card company considers when it offers cards. In this case, an international student with a longer U.S.

residency will be much easier to get credit cards than one who has been residing in this country for a shorter period of time.

Experience with credit and credit cards either through advancing age, living in this country for a longer time or having been exposed in home countries does make a difference. When an individual grows older and/or has been staying in the U.S. longer, s/he will become more experienced with credit and credit cards. Therefore, s/he will tend to have more credit cards than a student who is younger and/or has been staying in this country a shorter amount of time. Besides the three focal independent variables, monthly income has significant negative effects on both credit card ownership and outstanding credit card balances international students owe. The more monthly income an international student has, the less likely s/he will have credit cards. Moreover, the more monthly income an international student has, the less likely s/he will carry credit card outstanding balances. If ever s/he has outstanding balances on credit cards, his or her balances will be less than a student with lower income. This phenomenon could be explained by speculation that an international student with lower income has more need to borrow money from credit cards than an international student with a higher income. For example, an international student without or with only very limited income would be more likely to borrow money by using credit cards for his or her tuition fees and everyday necessities.

A student's major has a significant effect on outstanding balances international students carry on their credit cards. The statistics show that students who are Arts and Sciences majors and Engineering majors are more likely to have outstanding balances on credit cards than students with other majors. Furthermore, they tend to carry higher

outstanding balances, if ever they revolve credit card debt, than students with other majors. It could be explained as that students who are Arts and Sciences majors and Engineering majors have higher expectations to their future than students with other majors.

Implications and Recommendations

This study has several implications for international students, their advisers, financial aid officers, and consumer credit counselors. Information and results provided by this study may be used to develop educational and counseling efforts focused on the particular needs of international students who come to study in the United States.

Educational programs could focus on two different international student audiences. First, those students from lesser-developed countries who may never have encountered credit or credit cards may need basic education about the existence and appropriate use of credit cards. In this study, about 30 percent of students indicated that credit (in any form) was not available in their home countries to purchase consumer goods such as cars, and about 17 percent of students reported that credit cards were not available in their home countries. Over half of these international students (55.5%) indicated that they had not ever used credit cards in their home countries. For these students, education on basic features and terminology of credit cards and mathematics of interest rates and compounding interest would be appropriate. Workshops on the criteria one should use in evaluating and selecting credit cards, as well as developing a credit history to become eligible for owning a credit card, would appear to be helpful.

Second, there appears to be a small group of international students who own a large number of credit cards (i.e. about 11% own six or more cards) or who revolve

relatively large balances on their credit cards (i.e. about 15% owe more than $1,500 on all their cards). For these students, debt repayment difficulty may be an issue and educational programs might focus on debt repayment strategies and the legal consequences of overindebtedness. From the results on number of cards and outstanding card balances, these educational programs might focus on older students, those from higher income countries, those with lower monthly incomes, and those majoring in arts and sciences and engineering majors.

There are also several implications for future researchers that can be drawn. First, a similar study could be done by enlarging the sample size and by selecting international students from a wider geographical area. This study focused on 99 students from Georgia universities. While the conclusions may be generalizable to students from these three universities, they may not apply to students from, say, northeastern U.S. universities. Also, more steps could be taken to follow up nonrespondents with additional mailings in order to increase the response rate.

Second, this study was exploratory in nature and only examined six independent variables, focusing on students' experience with credit (related to age, country of origin, and number of years of residence in U.S.) and students' income, attitudes toward credit and major. Additional variables might be selected and studied in future research. This study also did not specifically examine the problems or dissatisfaction students may have experienced with attempting to use or using credit in the U.S. Future research on this issue would be illuminating.

Credit and credit card' usage among college students is a serious problem. Upon graduating, many students find themselves facing large amount of debt payments. As

part of college students, international students may be exposed to the same or even greater risk, since they have more difficulties in adjusting to U.S. economic systems as compared to domestic college students. Thus, this topic is one that should be investigated further.

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APPENDIX A

COVER LETTER AND QUESTIONNAIRE

The University of Georgia

Department of Housing and Consumer Economics

May, 2000

Dear international students at Georgia universities:

We are doing a study on aspects of international students' use of credit. You have been randomly selected to represent international students enrolled in spring semester 2000 at the University of Georgia (UGA), Georgia State University (GSU), and the Georgia Institute of Technology (GATECH). Because we have selected relatively few international students from each university, it is important that you participate so that both your university and your home country can be represented in the study.

If (a) you are NOT an international students enrolled in Spring, 2000 at UGA, GSU, or GATECH, OR (b) you have been staying in the United States continuously for more than seven years, then you do NOT need to complete this study. If you are not eligible, please write your reason on the quesitonnaire and return it in the envolope enclosed.

If you are eligible (an international student at one of the three universities who has been in this country for seven or fewer years), then we would like for you to participate in this study. All you have to do is fill out the questionnaire and return it in the envolope provided. Your answers to the questions will be anonymous and used only for research purposes. Your answers will not be associated with you because we will combine your answers with those of all the other international students in the study. There are no risks involved in your participation and any stress that you may feel in answering the questions should be minimal.

We hope you have time to help us with our study. We hope that the results of our study will help international students now and in the future, as well as University personnel who work with students. If you have questions about the study, please call either of us at UGA between 9:00 and 5:00 or e-mail. We will be glad to answer any questions about the research, either now or during the course of the study.

Sincerely,

Tianshu Li
Graduate Student
Phone: (706) 542-2935
E-mail: tianshu@arches.uga.edu

Deborah D. Godwin

Deborah D. Godwin, Ph.D.
Professor
Phone: (706) 542-4870
E-mail: dgodwin@fcs.uga.edu

Research at the University of Georgia that involves human participants is overseen by the Institutional Review Board. Questions or problems regarding your rights as a participant should be addressed to Julia D. Alexander, M. A., Institutional Review Board, Office of the Vice President for Research, University of Georgia 606A Boyd Graduate Studies, Athens, GA 30602-7411; Telephone (706) 542-6514; E-mail Address: IRB@uga.edu

Study of International Students in Georgia

The University of Georgia

Department of Housing and Consumer Economics
Athens, GA 30602

I. First, we would like to know some things about you and your background.

1. What is your home country? _____

2. What is your age in years? _____

3. What is your gender? Male _____ Female _____

4. What is your current marital status?
   Single, never married _____
   Married for first time _____
   Remarried, not first time _____
   Divorced or widowed _____

5. What degree are you now pursuing in the U.S.? _____

6. What major or concentration are you studying? _____

7. How many years have you been living in this country? _____

8. How many years have you been studying in this country? _____

9. What sources of income do you have now? (Please check all that apply.)
   Scholarship(s) _____
   Assistantship _____
   Job, working for pay _____
   Gifts from relatives _____
   Other (Please specify) _____

10. If you have a job, do you work on campus? YES _____ NO _____

11. If you have a job, what is the usual number of hours per week that you work? _____

II. Please tell us a few things about your home country and your life there. Circle the response that best reflects your thinking or actions.

1. How prosperous do you rate your country's economic situation?

Very poor				Very prosperous
1	2	3	4	5

2. How was your personal financial situation back in your home country?

Lowest				Highest
1	2	3	4	5

3. Compared to the financial situation in your home country before coming to the U.S., how do you rate your financial situation in this country?

Much worse				Much better
1	2	3	4	5

4. What was your occupation in your home country? _____
(If you had more than one, please tell us the last one.)

5. Did you own a house in your home country?	YES	NO
6. Did you own a car in your home country?	YES	NO
7. When you last lived in your country,		
a. was credit available to purchase a home?	YES	NO
b. was credit available to purchase consumer goods like cars and furniture?	YES	NO
c. were credit cards available?	YES	NO
8. When you last lived in your country,		
a. did you use credit to purchase a home?	YES	NO
b. did you use credit to purchase consumer goods like cars and furniture?	YES	NO
c. did you use credit cards?	YES	NO

III. Now, we'd like to know about what you think and do about credit.

1. People have many reasons for using credit. For each of the following reasons, please tell us (a) whether you feel it is all right for someone like yourself to borrow money and (b) whether you have ever used credit for each reason.

	FEEL IT IS OK?		HAVE DONE?	
a. to pay the expenses of a vacation trip?	YES	NO	YES	NO
b. to cover living expenses when income is cut?	YES	NO	YES	NO
c. to finance the purchase of a fur coat or jewelry?	YES	NO	YES	NO
d. to finance the purchase of a car?	YES	NO	YES	NO
e. to finance educational expenses?	YES	NO	YES	NO

2. Are you currently using installment credit or a loan from a bank or credit union in the U.S.

a. to finance the purchase of a home?	YES	NO
b. to finance the purchase of a car?	YES	NO
c. to finance the purchase of other goods like furniture, stereo, television, computer, etc.?	YES	NO

3. Do you currently own a credit card? YES NO

(IF NO, skip to Q. 8 below.)

4. **IF YES,** how many of each type of credit card do you currently own and how much do your currently owe on each type (the amount you would pay today to completely pay off the card or cards)?

	NUMBER OF CARDS	AMOUNT YOU OWE
a. General (Mastercard, Visa, Discover, etc.)	_____	$_____
b. Travel & entertainment (American Express, etc.)	_____	$_____
c. Department store (Belks, Sears, Penney's, etc.)	_____	$_____
d. Gasoline (Exxon, Texaco, Shell, etc.)	_____	$_____
e. Other type of credit card (What?)_____	_____	$_____

5. How frequently do you pay off your credit card bills in full monthly?

Always	Most of the time	Sometimes	Rarely	Never
1	2	3	4	5

6. How much are your current monthly payments on your debt? Please circle one letter that includes all of your monthly debt payments.

A	$0	G	$300 - $399
B	$1 - $49	H	$400 - $499
C	$50 - $100	I	$500 - $749
D	$100 - $149	J	$750 - $999
E	$150 - $199	K	$1,000 - 1,999
F	$200 - $299	L	$2,000 or more

7. When you applied for or obtained your credit card(s), did you consider...

a. the low interest cost or APR on the card(s)?	YES	NO
b. the low annual fee or no annual fee?	YES	NO
c. the ease of getting the card(s) with no credit history?	YES	NO

8. What is the current monthly gross income of your household? Remember that we just need this information for our research and it will be kept confidential!

A	$0	G	$300 - $399
B	$1 - $49	H	$400 - $499
C	$50 - $100	I	$500 - $749
D	$100 - $149	J	$750 - $999
E	$150 - $199	K	$1,000 - 1,999
F	$200 - $299	L	$2,000 or more

9. Is there anything else you'd like to tell us about credit cards and your feelings about them or use of them?

THANK YOU VERY MUCH FOR YOUR COOPERATION IN THIS STUDY!

APPENDIX B

CODE BOOK

I. First, we would like to know some things about you and your background

Var 01 Number:	3 digits
Var 02 Home country:	1. High income countries 2. Upper middle income countries 3. Lower middle income countries 4. Low income countries
Var 03 Age **	
Var 04 Gender:	1. Female 0. Male
Var 05 Marital status:	1. Single 2. Married for first time 3. Remarried, not first time 4. Divorced or widowed
Var 06 Degree:	1. BA/BS 2. Masters 3. Ph.D
Var 07 Major:	1. Social science 2. Applied science 3. Engineering
Var 08 Years been living in this country	(1 digit)
Var 09 Years been studying in this country	(1 digit)
Sources of income	
Var 10 Scholarship:	1. Yes 0. No
Var 11 Assistantship:	1. Yes 0. No
Var 12 Jobs, working for pay:	1. Yes 0. No
Var 13 Gifts from relatives:	1. Yes 0. No

Var 14 Other sources of income:
0. No
1. Bank loan
2. Personal savings
3. From spouse
4. Parents

Var 15 Work on campus:
1. Yes
0. No

Var 16 Usual number of hours per week that you work (2 digits)

II. Please tell us a few things about your home country and your life here

Var 17 Prosperous of your country's economic 1-5 (very poor- very prosperous)

Var 18 Personal financial situation back in your country 1-5 (lowest- highest)

Var 19 Your financial situation in this country 1-5 much (much worse- much better)

Var 20 Your occupation in your home country : open

Var 21 Did you own a house in your home country?
1. Yes
0. No

Var 22 Did you own a car in your home country?
1. Yes
0. No

Var 23. When you last lived in your country, was credit available to purchase a home?
1. Yes
0. No

Var 24. Was credit available to purchase consumer goods like cars and furniture?
1. Yes
0. No

Var 25. Were credit cards available?
1. Yes
0. No

Var 26. When you last lived in your country, did you use credit to purchase a home?
1. Yes
0. No

Var 27. Did you use credit to purchase consumer goods like cars and furniture?
1. Yes

0. No

Var 28. Did you use credit cards? 1. Yes
0. No

III. Now, we'd like to know about what you think and do about credit

Feel ok to

Var 29. Pay the expense of a vacation trip? 1. Yes
0. No

Var 30. To cover living expense when income is cut? 1. Yes
0. No

Var 31. To finance the purchase of a fur coat or jewelry? 1. Yes
0. No

Var 32. To finance the purchase of a car? 1. Yes
0. No

Var 33. To finance educational expenses? 1. Yes
0. No

Have done

Var 34. Pay the expense of a vacation trip? 1. Yes
0. No

Var 35. To cover living expense when income is cut? 1. Yes
0. No

Var 36. To finance the purchase of a fur coat or jewelry? 1. Yes
0. No

Var 37. To finance the purchase of a car? 1. Yes
0. No

Var 38. To finance educational expenses? 1. Yes
0. No

Are you currently using installment credit or a loan from a bank or credit union in the U.S.

Var 39. To finance the purchase of a home? 1. Yes
0. No

Var 40. To finance the purchase of a car? 1. Yes
0. No

Var 41. To finance the purchase of other goods like furniture, stereo, television, computer?
1. Yes
0. No

Var 42. Do you currently own a credit card? 1. Yes
0. No

Var 43 If yes, how many General cards (1 digit)

Var 44. How many travel and entertainment cards (1 digit)

Var 45. Department stores (1 digit)

Var 46. Gasoline (1 digit)

Var 47. Other type of card (1 digit)

Var 48. The amount you owed on general cards (5 digits)

Var 49. The amount you owed on travel and entertainment cards (5 digits)

Var 50. The amount you owed on department store cards (5 digits)

Var 51. The amount you owed on gasoline (5 digits)

Var 52. The amount you owed on other types of cards (5 digits)

Var 53. How frequently do you pay off your credit card bills in full monthly? 1-5 (always - never)

Var 54. How much are your current monthly payment on your debt?

01 $0
02 $1-$49
03 $50- $100
04 $100-$149
05 $150- $199
06 $200-$299
07 $300- $399
08 $400-$499
09 $500- $799

10 $750- $999
11 $1000-$1999
12 $2000 OR MORE

Var 55. When you applied for or obtained your credit cards(s), did you consider the low-Interests cost or APR on the card? 1. Yes
0. No

Var 56. Do you consider the low annual fee or no annual fee? 1. Yes
0. No

Var 57. Do you consider the ease of getting the card with no credit history? 1. Yes
0. No

Var 58. What is the current monthly gross income of your household?

01 $0
02 $1-$ 49
03 $50- $100
04 $100-$149
05 $150 -$199
06 $200-$299
07 $300-$399
08 $400-$499
09 $500-$749
10 $750-$999
11 $1000-$1999
12 $2000- MORE

APPENDIX C

COUNTRY LIST

001 CANADA
002 GAMBIA
003 CANADA
004 JAPAN
005 S. KOREA
006 P.R.CHINA
007 COLOMBIA
008 P.R. CHINA
009 ARMENIA
010 HONG KONG
011COSTA RICA
012 THAILAND
013 KOREA
014 NIGERIA
015 INDIA
016 SWEDEN
017 BOLIVIA
018 COLOMBIA
019 TAIWAN
020 CANADA
021 GERMANY
022 INDIA
023 S. KOREA
024 GUATEMALA
025 S. KOREA
026 S. KOREA
027 P.R. CHINA
028 FRANCE
029 JAPAN
030 INDIA
031 P.R. CHINA
032 P.R. CHINA
033 TAIWAN
034 P.R. CHINA
035 P.R. CHINA
036 P.R.CHINA
037 THAILAND
038 INDIA
039 ITALY
040 P.R.CHINA
041 S. KOREA
042 KENIA
043 FRANCE
044 JAPAN
045 THAILAN046 P.R.CHINA
047 P.R.CHINA
048 P.R.CHINA
049 SPAIN
050 P.R.CHINA
051 JAPAN
052 P.R.CHINA
053 DOMINICAN REPUBLIC
054 BULGORIA
055 GERMANY

056 S. KOREA
057 PAKISTAN
058 S. KOREA
059 P.R.CHINA
060 UKRAINE
061 P.R.CHINA
062 OMAN
063 P.R.CHINA
064 P.R.CHINA
065 P.R. CHINA
066 INDIA
067 COLIMBIA
068 TURKEY
069 S. KOREA
070 BRAZIL
071 U.K.
072 P.R. CHINA
073 P.R.CHINA
074 CANADA
075 BRITIAN
076 AUSTRALIA
077 JAPAN
078 TAIWAN
079 GERMANY
080 POLAND
081 P.R.CHINA
082 COSTA RICA
083 P.R.CHINA
084 CAMEROON
085 AUSTRALIA
086 P.R.CHINA
089 GERMANY
090 VENEEVELA
091 GERMANY
092 P.R.CHINA
093 GREECE
094 GERMANY
095 MOROCCO
096 P.R. CHINA
097 P.R. CHINA
098 P.R. CHINA
099 P.R. CHINA

APPENDIX D

GNP PER CAPITA 1999, ATLAS METHOD AND PPP

GNP per capita 1999, Atlas method and PPP

Ranking	Economy	Atlas methodology (US dollars)	Ranking	Economy	Purchasing power parity (international dollars)
1	Luxembourg	44,640	1	Luxembourg	38,247
2	Liechtenstein	.. a	4	United States	30,600
3	Switzerland	38,350	6	Switzerland	27,486
4	Bermuda	*35,590* a	7	Singapore	27,024
5	Norway	32,880	8	Norway	26,522
6	Japan	32,230	9	Iceland	26,283
7	Denmark	32,030	12	Denmark	24,280
8	United States	30,600	13	Belgium	24,200
9	Singapore	29,610	14	Japan	24,041
10	Cayman Islands	.. a	15	Austria	23,808
11	Iceland	29,280	16	Canada	23,725
12	Austria	25,970	17	Netherlands	23,052
13	Germany	25,350	20	Australia	22,448
14	Monaco	.. a	21	Germany	22,404
15	Sweden	25,040	24	France /b	21,897
16	Belgium	24,510	25	Finland	21,209
17	Brunei	*24,630* a	26	Hong Kong, China /c	20,939
18	Netherlands	24,320	27	United Kingdom	20,883
19	Finland	23,780	28	Sweden	20,824
20	Hong Kong, China /c	23,520	29	Italy	20,751
21	France /b	23,480	34	Ireland	19,180
22	United Kingdom	22,640	35	Cyprus	18,395
26	Australia	20,050	41	Spain	16,730
28	Italy	19,710	42	New Zealand	16,566
29	Canada	19,320	45	Portugal	15,147
30	Ireland	19,160	46	Malta	15,066
40	Spain	14,000	47	Slovenia	15,062
41	New Zealand	13,780	49	Korea, Rep.	14,637
44	Cyprus	11,960	50	Greece	14,595
45	Greece	11,770	52	Czech Republic	12,289
47	Portugal	10,600	56	Argentina	11,324
49	Slovenia	9,890	60	Hungary	10,479
50	Malta	9,210	63	Seychelles	10,381
51	Korea, Rep.	8,490	64	Slovak Republic	9,811
55	Argentina	7,600	65	St. Kitts and Nevis	9,801
61	Seychelles	6,540	67	Mauritius	8,652
62	St. Kitts and Nevis	6,420	68	Chile	8,370
63	Uruguay	5,900	69	South Africa	8,318
65	Czech Republic	5,060	70	Uruguay	8,280
67	Chile	4,740	72	Malaysia	7,963
68	Hungary	4,650	73	Poland	7,894
69	Croatia	4,580	74	Estonia	7,826
70	Brazil	4,420	75	Mexico	7,719
71	Mexico	4,400	76	Trinidad and Tobago	7,262
72	Trinidad and Tobago	4,390	78	Croatia	6,915
73	Poland	3,960	79	Belarus	6,518
75	St. Lucia	3,770	80	Russian Federation	6,339
76	Lebanon	3,700	81	Brazil	6,317
77	Venezuela, RB	3,670	82	Turkey	6,126
78	Mauritius	3,590	83	Lithuania	6,093
78	Slovak Republic	3,590	84	Botswana	6,032
80	Estonia	3,480	85	Latvia	5,938
81	Grenada	3,450	86	Grenada	5,847
82	Malaysia	3,400	87	Costa Rica	5,770
83	Gabon	3,350	88	Colombia	5,709
84	Botswana	3,240	89	Romania	5,647
85	Dominica	3,170	90	Thailand	5,599
86	South Africa	3,160	91	Tunisia	5,478
87	Panama	3,070	92	Namibia	5,369
88	Turkey	2,900	93	Gabon	5,325
89	Costa Rica	2,740	94	Venezuela, RB	5,268
90	Belize	2,730	95	Iran, Islamic Rep.	5,163

World Development Indicators database, World Bank, 8/2/2000

GNP per capita 1999, Atlas method and PPP

Ranking	Economy	Atlas methodology (US dollars)	Ranking	Economy	Purchasing power parity (international dollars)
91	St. Vincent and the Grenadines	2,700	97	St. Lucia	5,022
92	Belarus	2,630	98	Panama	5,016
93	Lithuania	2,620	99	Bulgaria	4,914
94	Latvia	2,470	100	Dominica	4,825
95	Peru	2,390	101	Algeria	4,753
97	Jamaica	2,330	102	St. Vincent and the Grenadines	4,667
98	Russian Federation	2,270	103	Dominican Republic	4,653
99	Colombia	2,250	104	Fiji	4,536
100	Fiji	2,210	105	Belize	4,492
101	Tunisia	2,100	106	Kazakhstan	4,408
102	Thailand	1,960	107	Peru	4,387
103	Dominican Republic	1,910	108	Macedonia, FYR	4,339
104	El Salvador	1,900	109	Tonga	4,281
105	Namibia	1,890	110	Swaziland	4,200
106	Micronesia, Fed. Sts.	1,810	111	Paraguay	4,193
107	Iran, Islamic Rep.	1,760	113	Lebanon	4,129
108	Tonga	1,720	114	El Salvador	4,048
109	Macedonia, FYR	1,690	115	Samoa	3,915
110	Guatemala	1,660	118	Philippines	3,815
112	West Bank and Gaza	1,610	122	Georgia	3,606
113	Paraguay	1,580	123	Maldives	3,545
114	Marshall Islands	1,560	124	Jordan	3,542
115	Algeria	1,550	125	Guatemala	3,517
117	Romania	1,520	126	Cape Verde	3,497
119	Jordan	1,500	127	Egypt, Arab Rep.	3,303
120	Egypt, Arab Rep.	1,400	128	China	3,291
121	Bulgaria	1,380	129	Jamaica	3,276
122	Swaziland	1,360	130	Guyana	3,242
123	Cape Verde	1,330	131	Morocco	3,190
124	Ecuador	1,310	132	Kiribati	3,186
125	Kazakhstan	1,230	133	Ukraine	3,142
126	Morocco	1,200	134	Turkmenistan	3,099
127	Vanuatu	1,170	136	Sri Lanka	3,056
127	Equatorial Guinea	1,170	137	Albania	2,892
129	Maldives	1,160	138	Vanuatu	2,771
130	Samoa	1,060	139	Syrian Arab Republic	2,761
131	Philippines	1,020	141	Ecuador	2,605
132	Bolivia	1,010	142	Zimbabwe	2,470
134	Syrian Arab Republic	970	143	Indonesia	2,439
135	Kiribati	910	144	Moldova	2,358
136	Albania	870	146	Azerbaijan	2,322
137	Sri Lanka	820	147	Papua New Guinea	2,263
138	Papua New Guinea	800	148	Honduras	2,254
139	Djibouti	790	149	Kyrgyz Republic	2,223
140	China	780	150	Armenia	2,210
141	Guyana	760	151	Bolivia	2,193
141	Honduras	760	152	Nicaragua	2,154
143	Ukraine	750	153	India	2,149
143	Solomon Islands	750	154	Uzbekistan	2,092
145	Uzbekistan	720	155	Lesotho	2,058
146	Cote d'Ivoire	710	156	Solomon Islands	1,949
147	Congo, Rep.	670	157	Ghana	1,793
148	Turkmenistan	660	158	Guinea	1,761
149	Georgia	620	159	Pakistan	1,757
150	Indonesia	580	160	Vietnam	1,755
150	Cameroon	580	161	Lao PDR	1,726
152	Lesotho	550	163	Cote d'Ivoire	1,546
152	Azerbaijan	550	164	Mauritania	1,522
154	Zimbabwe	520	165	Bhutan	1,496
155	Guinea	510	166	Mongolia	1,496
155	Senegal	510	167	Gambia, The	1,492
155	Bhutan	510	168	Bangladesh	1,475

GNP per capita 1999, Atlas method and PPP

Ranking	Economy	Atlas methodology (US dollars)		Ranking	Economy	Purchasing power parity (international dollars)
158	Armenia	490		169	Cameroon	1,444
160	Pakistan	470		170	Haiti	1,407
161	Haiti	460		171	Comoros	1,360
162	India	450		172	Togo	1,346
163	Nicaragua	430		173	Senegal	1,341
164	Ghana	390		174	Sao Tome and Principe	1,335
165	Mauritania	380		175	Sudan	1,298
165	Benin	380		176	Cambodia	1,286
167	Moldova	370		177	Nepal	1,219
167	Bangladesh	370		179	Uganda	1,136
167	Vietnam	370		180	Central African Republic	1,131
170	Kenya	360		183	Eritrea	1,012
171	Mongolia	350		184	Tajikistan	981
171	Comoros	350		185	Kenya	975
171	Yemen, Rep.	350		187	Burkina Faso	898
174	Gambia, The	340		188	Congo, Rep.	897
175	Sudan	330		189	Benin	886
176	Togo	320		190	Chad	816
176	Zambia	320		191	Mozambique	797
176	Uganda	320		192	Madagascar	766
179	Nigeria	310		193	Nigeria	744
180	Kyrgyz Republic	300		194	Niger	727
181	Tajikistan	290		196	Mali	693
181	Central African Republic	290		197	Yemen, Rep.	688
184	Lao PDR	280		198	Zambia	686
185	Sao Tome and Principe	270		199	Angola	632
186	Cambodia	260		200	Ethiopia	599
187	Madagascar	250		202	Guinea-Bissau	595
187	Rwanda	250		203	Malawi	581
190	Mali	240		204	Burundi	553
190	Burkina Faso	240		205	Tanzania /e	478
190	Tanzania /e	240		206	Sierra Leone	414
193	Mozambique	230				
194	Angola	220			Afghanistan	..
194	Nepal	220			American Samoa	..
196	Chad	200			Andorra	..
196	Eritrea	200			Antigua and Barbuda	*8,959*
199	Malawi	190			Aruba	..
199	Niger	190			Bahamas, The	*13,955*
201	Guinea-Bissau	160			Bahrain	*11,527*
203	Sierra Leone	130			Barbados	..
204	Burundi	120			Bermuda	*23,302*
206	Ethiopia	100			Bosnia and Herzegovina	..
					Brunei	*24,824*
	Afghanistan	..	i		Cayman Islands	..
	American Samoa	..			Channel Islands	..
	Andorra	..	f		Congo, Dem. Rep.	*731*
	Antigua and Barbuda	*8,520*			Cuba	..
	Aruba	..	f		Djibouti	..
	Bahamas, The	..	f		Equatorial Guinea	..
	Bahrain	*7,640*			Faeroe Islands	..
	Barbados	..			French Polynesia	*20,586*
	Bosnia and Herzegovina	..			Greenland	..
	Channel Islands	..	f		Guam	..
	Congo, Dem. Rep.	*110*			Iraq	..
	Cuba	..			Isle of Man	..
	Faeroe Islands	..	f		Israel	*16,867*
	French Polynesia	*18,050*			Korea, Dem. Rep.	..
	Greenland	..	f		Kuwait	..
	Guam	..	f		Liberia	..
	Iraq	..			Libya	..
	Isle of Man	..			Liechtenstein	..

GNP per capita 1999, Atlas method and PPP

Ranking	Economy	Atlas methodology (US dollars)		Ranking	Economy	Purchasing power parity (international dollars)
	Israel	*17,450*			Macao, China	..
	Korea, Dem. Rep.	..	i		Marshall Islands	..
	Kuwait	..	f		Mayotte	..
	Liberia	..	i		Micronesia, Fed. Sts.	..
	Libya	..			Monaco	..
	Macao, China	..	f		Myanmar	..
	Mayotte	..			Netherlands Antilles	..
	Myanmar	..	i		New Caledonia	..
	Netherlands Antilles	..	f		Northern Mariana Islands	..
	New Caledonia	..	f		Oman	..
	Northern Mariana Islands	..	f		Palau	..
	Oman	..			Puerto Rico	..
	Palau	..			Qatar	..
	Puerto Rico	*8,200*			Rwanda	..
	Qatar	..	f		Saudi Arabia	*10,472*
	Saudi Arabia	*6,910*			Somalia	..
	Somalia	..	i		Suriname	..
	Suriname	*1,660*			United Arab Emirates	*18,825*
	United Arab Emirates	*17,870*			Virgin Islands (U.S.)	..
	Virgin Islands (U.S.)	..	f		West Bank and Gaza	..
	Yugoslavia, FR (Serbia/Montenegro)	..			Yugoslavia, FR (Serbia/M	..
	World	**4,890**			**World**	**6,490**
	Low income	410			Low income	1,790
	Middle income	2,000			Middle income	4,880
	Lower middle income	1,200			Lower middle income	3,960
	Upper middle income	4,900			Upper middle income	8,320
	Low & middle income	1,240			Low & middle income	3,410
	East Asia & Pacific	1,000			East Asia & Pacific	3,500
	Europe & Central Asia	2,150			Europe & Central Asia	5,580
	Latin America & Caribbean	3,840			Latin America & Caribbean	6,280
	Middle East & North Africa	2,060			Middle East & North Africa	4,600
	South Asia	440			South Asia	2,030
	Sub-Saharan Africa	500			Sub-Saharan Africa	1,450
	High income	25,730			High income	24,430
	European Monetary Union	21,680			European Monetary Union	20,990

.. N

Note: Rankings include all 206 Atlas economies, but only those with confirmed 1999 Atlas GNP per capita estimates or those that rank among the top twenty are shown in rank order. Figures in italics are the most recent estimate from 1997 or 1998. a. 1999 data not available; ranking is approximate. b. Data include the French overseas departments of French Guiana, Guadeloupe, Martinique, and Réunion. c. GNP data refer to GDP. d. Estimate is based on regression; other PPP figures are extrapolated from the latest International Comparison Programme benchmark estimates. e. Data refer to mainland Tanzania only. f. Estimated to be high income ($9,266 or more). g. Estimated to be upper middle income ($2,996 to $9,265). h. Estimated to be lower middle income ($756 to $2,995). i. Estimated to be low income ($755 or less).

APPENDIX E

APPROVAL FORM

The University of Georgia
Office of The Vice President for Research
DHHS Assurance ID No. : M1047

Institutional Review Board
Human Subjects Office
606A Graduate Studies Research Center
Athens, Georgia 30602-7411
(706) 542-6514; 542-3199
Fax No. (706) 542-3638

APPROVAL FORM

Date Proposal Received: 2000-04-03 **Project Number:** H2000-10543-0

Name	Title	SS Number	Dept/Phone	Address	Email
Ms. Tianshu Li	MI	671012692	Housing & Consumer Economics Dawson Hall		tianshu@arches.uga.edu
Dr. Deborah D. Godwin	CO	245769521	Housing & Consumer Economics Housing Res Center +3622		dgodwin@fcs.uga.edu

Title of Study: EFFECTS OF AGE, HOME COUNTRY, AND YEARS OF U.S. RESIDENCY ON OUTSTANDING BALANCES INTERNATIONAL STUDENTS OWED ON ALL CREDIT CARDS

45 CFR 46 Category: Exempt 2 Modifications Required for Approval and Date Completed:

Approved : 2000-04-11 Begin date : 2000-04-11 Expiration date : 2000-06-30

NOTE: Any research conducted before the approval date or after the end data collection date shown above is not covered by IRB approval, and cannot be retroactively approv

Number Assigned by Sponsored Program: **Funding Agency:**

Form 310 Provided: No

Your human subjects study has been approved as indicated under IRB action above.

Please be aware that it is your responsibility to inform the IRB . . .
. . . of any significant changes or additions to your study and obtain approval of them before they are put into effect; . . .
. . . that you need to extend the approval period beyond the expiration date shown above; . . .
or, . . .
. . . that you have completed your data collection as approved, within the approval period shown above, so that your file may be closed.

For your convenience in obtaining approval of changes, extending the approval period, or closing your file, we are providing you with a blue Researcher Request form. Detach this blue form, complete it as appropriate, sign and date it, then return it to the IRB office. Keep this original approval form for your records.

Copy:
Dr. Brenda J. Cude

Julia Alexander, M.
Chairperson, Institutional Review Bo

APPENDIX F

LETTER FROM GEORGIA TECH

Georgia Institute of Technology

Office of International Education
654 Cherry Street
Atlanta, Georgia 30332-0284 U.S.A.
PHONE 404-894-7475
FAX 404-894-9682
http://www.intprog.gatech.edu

May 16, 2000

TO: Randomly selected international students

FROM: Linda Duckworth, Associate Director, International Education

SUBJECT: Need your assistance with a graduate student's research project

Tianshu Li, a fellow international student, is conducting a research project involving international student use of credit cards. She is a graduate student pursuing her master's degree in the Department of Housing and Consumer Economics at a nearby research university in Athens, Ga.

I generated the list of all international students registered this summer semester at Georgia Tech and then randomly selected 100 students out of the total number. YOU are one of the lucky 100 students. It would be greatly appreciated by Tianshu, if you would respond to her survey and return the completed survey in the enclosed pre-paid envelope. She hopes to publish the results of her findings in this area of research involving international students. Please note, Tianshu is not aware of your identity and your participation in this research project, if you choose to do so, will be kept strictly confidential.

Please contact me via email at Linda.duckworth@intprog.gatech.edu if you have any questions about your participation in this research project. Thank you.

APPENDIX G

COMMENTS FROM SOME OF THE RESPONDENTS

Credit cards are useful, safe and convenient. In addition, using credit cards can help to build up credit history, which is necessary for living in this country. (n=11)

From respondent 005
"I like to use credit card in the U.S.A. I feel more secure when I use credit cards than using personal checks. Also, it is more convenient and saves times. It gives me the lists of my expense. "

From respondent 006
"I use credit card, because of its convenience. It is also safer than charge card. I think it is ridiculous to pay very high interest rate to credit card company, unless I have no way to survive, I won't do it."

From respondent 010
"Convenience!"

From respondent 030
"I use the credit card as a convenience because I don't carry cash often. And I do not accumulate balances because I don't believe it is healthy to get into debt."

From respondent 047
"They are very convenient!"

From respondent 050
"It is very useful when you have no income."

From respondent 62
"They should help out international students by going easy on credit history."

From respondent 070
"It was a little bit difficult to get the 1st CC Bank of America/Visa was the 1st to trust me. I could not live without them: it is easy to use and practical."

From respondent 077
*"*Very convenient; but you can get in serious trouble if you don't know how to use them wisely."

From respondent 089
"I do not particular like credit cards. I prefer Debit cards because the money comes out of my acct. immediately. However, I realize that I need to built up my credits if I want to stay here, for house, car and etc."

From respondent 098
"Convenient."

Use credit cards carefully, wisely, and be responsible. (n=12)

From respondent 014
"Use them wisely. It is very easy to charge but hard to pay off when you don't have the money. Credit history is very hard to fix so don't mess up yours."

From respondent 024
"In my case, I used debit card mostly but sometimes, specially cases, I have used credit cards. When I have need I use it but it doesn't exceed the account of the debit card."

From respondent 031
"Always pay your bills in full."

From the respondent 037
"The APR is normally varied. If there is a promotion for low APR, I would willing to use the credits. If the APR is going up, I'll try to clean the debt as soon as I can."

From respondent 039
"I never use them in case I know that I don't have enough money on the account."

From respondent 045
"Personally, I found that using credit cards for student (Amex, Citibank, Discover and AT&T) is safer than using those provided by other companies. In the former, I have not found many mistakes in my statements. However, there are a lot of unauthorized charges to my account in GM master card. They took so long to correct it. It seems tome that the charges were appeared on purpose. The claim process is too complicated. Thus, I strongly recommend an international student to use credit card for student only. Finally, when you use a credit card, you should keep track of your balance. One can easily use money more than he/she really have in a bank. The more the credit limit is, the more you will be using the credit card. And you will be paying interest for what you use. "Be careful".

From respondent 053
"If you are responsible and use them only when necessary or when you know that you can deal with your debt, you'll never have problem with your credit."

From respondent 080
"I think that credit cards should be completely paid off every month, unless something unforseen happens. I think that one should not over use credit cards."

From respondent 085
"I believe you should only have access to credit cards of you can afford to pay the bills in full monthly - I have a phobia about getting into debt, or owing anyone money."

From respondent 088
"The customer service is very important to a cardholder."

From respondent 095
"Be responsible and don't get carried away."

From respondent 097
"I see international students are on average more responsible in managing their money. Maybe it's because many of you come from less affluent countries. On average, US kids are seen as "special nobody tell them the difference between 'want' and 'need'."

It is hard to get a credit card for an international student because of the citizenship (n=7)

From respondent 007
"The university should help international students to get the UGA visa card, so that they can build credit history."

From respondent 025
"It is bad to let foreign students not have credit cards only because they are non-resident. Their responsibility for payment belong not to their county but to their personality.
Credit cards would be more useful when they are used for proper purposes."

From respondent 026
"Not easy to get a credit card without credit history."

From respondent 038
"We cannot apply to many good credit card deals because we're not US citizens."

From respondent 067
"Most credit card companies require U.S. citizenship for it …. And I think that is unfair because some of us are just trying to get a credit history for the future."

From respondent 078
Since I am an international student, I do not have SSN and it's hard for me to apply a credit card. In fact, I've already been denied by 2-3 credit card companies.

From respondent 090
"As a foreign national, obtaining a credit card is not a matter of credit history, but of cc. Company policy. In most of my cc applications on campus, the interviewer told me to put us-resident or I would not get it."

Credit cards in U.S. are unsafe. They are too easy to access for young people, and tend to put people into debts. (n=8)

From respondent 004
"I am afraid that today many credit card companies are giving cards so easily to people (especially students). I feel like they want people to get in a debt. So they can collect more money (with high interest). Sometimes I get preaproved by some credit card company with 10,000 credit limit. How could they offer that to a student who has only couple thousand dollars in bank?"

From respondent 015
"Sometimes, they are unsafe to use especially in restaurants. In general, I try to avoid using them unless absolutely essential."

From respondent 016
"Too easy to access for young people. Just look at the personal bankruptcy rate. It is ridiculous."

From respondent 017
"I think they are a great help in case of emergencies, or when you really need to pay off something like school. However, it could be very tempting to use when you don't really need the product you purchase. If I could go back in time, I would not have used my credit cards as much as I did."

From respondent 056
"Credit card is apt to encourage me and my wife to purchase something we do not need to buy. After all, it would be my debt I have to pay. As an international student, I have been trying to avoid using it. So I do not worry about my debt used by credit card. It is safer not to have credit card in the states for me."

From respondent 068
"1. The credit card limit is very low in U.S. for students with assistantships.
2. Using credit cards in my home country was more secure than in U.S., since it was obligatory to show a valid ID with photo while using a credit card in Turkey."

From respondent 082
"Due to some delays in the delivery of the money coming from our loan and a couple of inconveniences we had to delay payment on our credit card in currying in debts for first time.

From respondent 087
"They are bad things students from all over the world (if they remain at school) just be allowed low interest loans instead of credit cards."

More information about credit cards is needed (n=1)

From respondent 001

"I think it would have been helpful had I had more information about credit cards so I would have used them more responsibly and I would not be in the debt I am in now."