Pathways to financial success: Determinants of financial literacy and financial well-being among young adults

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Pathways to financial success: Determinants of financial literacy and financial well-being among young adults

by

Mohamad Fazli Sabri

A dissertation submitted to the graduate faculty

in partial fulfillment of the requirements for the degree of

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DEDICATION

In the name of Allah, the Most Gracious, the Most Merciful. Thank you ALLAH for all your blessing. This dissertation is lovingly dedicated to my parents, wife, children, and all family members. I give my deepest expression of love and appreciation for the encouragement that you gave and the sacrifices you made during this graduate program. Your support, encouragement, and constant love have sustained me throughout my life
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CHAPTER 1: GENERAL INTRODUCTION

Introduction

College students are at a decisive time in their lives as they move from financial dependence to financial independence. For a majority of students, the first year of college is viewed as an important transitional stage in which parental supervision and oversight are reduced and students begin to achieve some degree of financial autonomy. When they go to college, many students are confronted with financial responsibilities such as paying bills, creating a budget, and using credit for the first time in their lives. How well they cope with these challenges depends in part on the financial knowledge and behaviors they acquired prior to arriving at college (Lyons, Scherpf, & Roberts, 2006). Previous studies in the United States and other countries have shown that college students are inadequately prepared for these new burdens and that they often poorly manage their finances (Markovich & DeVaney, 1997; Chen & Volpe, 1998; Beal & Delpachitra, 2003; Murphy, 2005). Colleges and universities have a unique opportunity to encourage the development of sound financial practices among students through coursework, workshops, and other education experiences (Xiao, Shim, Barber, & Lyons, 2007). Increasingly, researchers are beginning to examine students’ knowledge about finances to determine how they acquire financial management skills and to identify the best methods for teaching these skills, with the goal of helping them achieve financial well-being (Shim, Xiao, Barber, & Lyons, 2009).

Today’s college students have had more money to spend than students in past generations, but conversely they have been shown to have low levels of financial literacy and to be impulsive buyers (Hira & Brinkman 1992; Danes, Huddleston, & Boyce, 1999; Henry, Weber & Yarbrough, 2001). Inadequate comprehension of personal finance, such as
budgeting and tracking expenses, can lead to increased conspicuous consumption behaviors (i.e., lavish spending on goods and services for the purpose of impressing others) among young adults. Although many studies have identified parents as the most important sources for teaching children about money, it is reasonable to expect that, once away from home and family, peers and the media may become more important factors in forming college students' financial knowledge and behavior. The role of influences outside the family on financial knowledge and behaviors of college students has had limited attention.

Another topic of current research examines the association between financial behavior and financial well-being (Xiao, Tang, & Shim, 2009; Shim et al., 2009). For the most part, however, these previous investigations have not considered the association between financial literacy and financial well-being. Furthermore, the investigations that have measured financial well-being have not always been consistent in how they define it. For example, Shim et al. (2009) define financial well-being as satisfaction with one’s current financial status (subjective measure) and level of debt (objective measure). Others define financial well-being as overall satisfaction with one’s financial situation (Van Praag, Frijters, & Ferer-i-Carbonell, 2003; Joo, 2008). A recent study by Shim et al. (2009) on financial well-being among young adults found that there are direct links between financial knowledge, financial attitude, and financial behavior, but did not find a direct relationship between financial knowledge and financial well-being. There is obviously more to be uncovered regarding the influence of financial literacy on financial well-being among college students.

This dissertation research was designed to examine several unanswered questions about college students’ financial knowledge and how it is derived, and about the financial
literacy and financial well-being of young adults. The data employed in this study were collected from students in public and private colleges in Malaysia. The data allow for examination of the effects of personal and family background, academic ability, and childhood consumer experience on college students’ financial literacy and provide a unique opportunity to investigate the determinants of financial literacy and financial well-being among college students. Improved understanding of the acquisition of financial knowledge was intended to provide additional insight into the relationship between financial knowledge and financial well-being. Two articles were prepared for publication in this dissertation; each with the overarching goal of contributing to the literature on college students’ financial well-being.

Dissertation Organization

The organization of this dissertation follows the journal paper format. Chapter 2 contains the first research article, “Childhood Consumer Experience and The Financial Literacy of College Students in Malaysia,” published in 2010. A second research article follows in Chapter 3 and is titled, “A Conceptual Model of Perceived Financial Well-Being: Early Childhood Consumer Experience, Financial Socialization, and Financial Knowledge Pathways”.

The first article, Chapter 2, addresses the effects of childhood consumer experience on financial literacy. Prior research suggests that college students lack sufficient knowledge in personal finance (Chen & Volpe, 1998; Jorgensen, 2007; Mandell, 2008). In addition, current literature suggests that learning personal finance at an early age is important; perhaps more important than previously hypothesized (Martin & Oliva, 2001; Koonce, Mimura, Mauldin, Rupured, & Jordan, 2008). Thus, what college students have learned and experienced in the
past could affect their knowledge of personal finance much more than is currently understood. This study investigates the impact of personal and family background, academic ability, and childhood consumer experience on financial literacy among Malaysian college students. Malaysian students typically come from one of three ethnic backgrounds: Malay, Chinese, or Indian. This investigation is among the first to examine the role that ethnicity plays in the relationship between childhood consumer experience and in explaining financial knowledge. Three hypotheses were tested: 1) Financial literacy is associated with ethnicity, gender, student’s residence, type of college, place of origin, and parents’ education, 2) Students with greater academic achievement and more schooling completed have greater financial literacy, and 3) Childhood consumer experience is positively related to financial literacy; the earlier the experience, the greater the financial literacy.

The second article, Chapter 3, takes the next step, moving from understanding financial literacy, as depicted in Chapter 2, to examining how various factors (personal and family background, academic ability, early childhood consumer experience, financial socialization, and financial knowledge) predict students’ perceived financial well-being. Structural equation modeling was utilized to examine the hypothesis that the effect on perceived financial well-being is mediated by financial socialization and financial knowledge. In turn, having earlier childhood experiences and greater financial knowledge were hypothesized to have a positive impact on college students’ perceived financial well-being. Six hypotheses were tested: 1) Students’ personal and family backgrounds have a significant direct impact on perceived financial well-being, 2) Students with higher GPAs and those with more years at university have higher scores on perceived financial well-being, 3) The influence of early childhood consumer experience on perceived financial well-being is
mediated by financial socialization and financial knowledge, 4) Financial knowledge directly and positively impacts perceived financial well-being, 5) Parents have greater influence than peers, school, religion, and media on college students’ financial knowledge, and 6) The influence of financial socialization on perceived financial well-being is mediated by financial knowledge. Few previous studies have employed a structural equation model (SEM) to examine the relationships between and among personal and family background, academic ability, early childhood consumer experience, financial socialization, financial knowledge, and financial well-being. Thus, the present study will contribute to existing literature by providing a methodologically rigorous (i.e., using SEM) approach to modeling and predicting college students’ perceived financial well-being.

Finally, Chapter 4 of this dissertation contains a general discussion of both articles, beginning with an overall summary of the main findings from both studies. General conclusions that can be drawn from both studies are included and discussed as they pertain to future research investigations to be undertaken. Recommendations are also provided for public policies, educational programs, and intervention strategies that will help college students achieve financial success in their campus life. Finally, the limitations of each research study are discussed.

Theoretical Underpinnings of the Dissertation Research

Social Learning Theory and the theory of consumer socialization guided the development of the hypotheses in this investigation. Social learning theory explains how people learn behavior by observing that of others'. If individuals observe positive outcomes resulting from a behavior, they are more likely to imitate that behavior; if they observe
negative outcomes they are less likely to do so (Bandura, 1969). Social Learning Theory has been applied to a variety of topics including compulsive behavior (Fabien & Joliceour, 1993), financial behavior (Hira, 1997; Martin & Bush, 2000), and children’s socialization (Chan & McNeal, 2006; Hsieh, Chiu, & Lin, 2006). People learn behavior through the process of socialization; similarly consumer research suggests that consumer socialization is the process “by which young people acquire skills, knowledge and attitudes relevant to their functioning in the marketplace” (Ward, 1974, p.2). Another definition refers to it as the process by which individuals acquire knowledge, skills, and value dispositions that enable them become participating members of society (McNeal, 1987; Moschis, 1987). The definition has been extended beyond general consumer behavior to include values, attitudes, norms, skills, behaviors, motives, and knowledge that contribute to financial skills and understanding (Danes, 1994; Fox, Bartholomae, & Gutter, 2000; Gutter, Copur, & Selena, 2009). Several researchers have applied consumer socialization theory to the study of college students’ financial knowledge, behavior, and well-being (Shim et al., 2009; Shim, Barber, Card, Xiao, & Serido, 2010; Gutter, Garrison, & Copur, 2010). Along with social learning theory, consumer socialization provides the theoretical underpinning for this research. Additional information is provided in each of the articles (see chapters 2 and 3).

Supporting Literature

Definition of Financial Literacy

The terms financial literacy, financial knowledge, and financial education often have been used interchangeably both in the academic literature and in the popular media (Huston, 2010). One definition of financial literacy can be defined as the ability to effectively evaluate and manage one’s finances in order to make frugal decisions in order to reach life goals and
achieve financial well-being (American Institute of Certified Public Accountants, 2003). Garman and Forgue (2000) define financial literacy as knowing the facts and vocabulary necessary to manage one’s personal finances successfully. According to Kim (2001) financial literacy is basic knowledge that people need in order to survive in modern society. Financial literacy involves knowing and understanding the often complex principles of spending, saving, and investing. Financial literacy also is the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being (U.S. Financial Literacy and Education Commission, 2007). It is an essential skill, increasingly seen as important to the long-term well-being of individuals and communities (Greenspan, 2001).

Huston (2010) analyzed seventy-one individual studies published between 1996 and 2008. These studies were based on fifty-two different data sets for which a broad range of financial literacy/financial knowledge measures were developed over the last decade. She examined the definitions of financial literacy used in these earlier literatures and found that majority (72%), did not include a definition of financial literacy. Forty-seven percent of the studies analyzed used the terms “financial literacy” and “financial knowledge” synonymously. Huston (2010) identified four main categories that emerged from these studies’ definitions of financial literacy and knowledge: personal finance basics, borrowing, saving/investing, and protection. Huston proposed that financial literacy could be conceptualized as having two dimensions: understanding personal finance knowledge (theory) and using personal finance knowledge (application). Financial literacy, therefore, should be defined as measuring how well an individual can understand and use personal finance-related information.
Financial knowledge is an integral component of financial literacy, but not identical to financial literacy (Huston, 2010). Recently, Remund (2010) reviewed the conceptual definitions of financial literacy and determined that definitions fell into five categories: (1) knowledge of financial concepts, (2) ability to communicate about financial concepts, (3) aptitude in managing personal finances, (4) skill in making appropriate financial decisions, and (5) confidence in planning effectively for future financial needs. Like Huston, Remund concluded that financial literacy is more than simply a measure of knowledge and offered this definition of financial literacy: “a measure of the degree to which one understands key financial concepts and possesses the ability and confidence to manage personal finances through appropriate, short-term decision making and sound, long-range financial planning, while mindful of life events and changing economic conditions” (p. 284).

An Overview of Studies Conducted on the Financial Knowledge and Financial Literacy of College Students

Most previous studies on financial literacy and or financial knowledge have focused on high school students or adults (Danes et al., 1999; Hilgert, Hogarth, & Beverly, 2003; Mandell, 2008). Seventeen empirical studies on the financial literacy or financial knowledge of college students were found in the reviewed literature conducted either in the U.S. or outside the U.S. between 1987 and 2010. The first reported study (Danes & Hira, 1987) investigated 323 Iowa State University students’ knowledge about credit cards, insurance, personal loans, financial record keeping, and overall financial management. The study indicated that in general college students had limited financial knowledge but that males, upper classmen, and married students were more knowledgeable than females, lower classmen, and single students in two areas of personal finance (insurance and personal loans).
A second study conducted in 1996 examined the personal investment literacy of 454 students at Youngstown State University (Volpe, Chen, & Pavlicko, 1996). The study explored the relationship between level of investment literacy and gender, academic discipline, and experience. Students’ knowledge of investing was measured using a questionnaire developed by John Markese, president of the American Association of Individual Investors, and adapted from the Money Forecast Issue of *Money* magazine (1993). The survey contained ten questions on personal investment topics including risk, diversification, financial advisor qualifications, tax planning, business math, interest rates, stocks, bonds, mutual funds, and global investing. Each correct answer was worth 10 points and respondents who received a score of 70 or higher were considered knowledgeable about the basics of personal investment. The mean score was 44, which indicated that students’ had inadequate knowledge of personal investment. The results revealed that female students and non-business majors were less knowledgeable about personal investment than were males and business majors.

A third study by Markovich and DeVaney (1997) surveyed 500 college seniors at a large Midwestern university on personal finance knowledge and practices. This survey asked a total of 21 multiple choice questions concerning credit use, loan payments, emergency funds, and insurance use to measure students’ financial literacy. One point was given for each correct answer. The scores ranged from zero to 21 with a mean of 9.31 (SD=3.67), again suggesting that college seniors lack sufficient personal finance knowledge. Male seniors and seniors in the school of management tended to have higher knowledge scores; seniors with three or fewer credit cards tended to have less outstanding credit card debt than those with
four or more cards; and, college seniors were more satisfied with their financial management skills (ability to manage finances) than with their financial knowledge.

Chen and Volpe (1998) conducted a personal financial literacy study among 924 students from 13 college campuses, including both public and private schools in California, Florida, Kentucky, Massachusetts, Ohio, and Pennsylvania. This study examined the relationship between financial literacy and several students’ characteristics, and the impact of financial literacy on students’ opinions and decisions related to financial issues. The survey consisted of 52 questions, including 36 multiple-choice questions testing financial knowledge and eight questions about opinions and financial decisions. As is typical of research on financial literacy, financial knowledge was assessed based on general knowledge and knowledge of savings and borrowing, insurance, and investments. The mean percentage of correct scores was 52.9%, indicating the students answered only about half the survey questions correctly. The results suggest that students have inadequate knowledge of personal finance. Results also revealed that non-business majors, women, students in lower class rank, less than age 30, and those with little working experience have lower levels of financial knowledge. Students with less financial knowledge tended to make incorrect financial decisions in the areas of general knowledge, savings and borrowing, and investments. Using the same data set to study gender differences in knowledge of personal finance, Chen and Volpe (2002) found women to be less knowledgeable about personal finance than their male counterparts. Financial literacy was related to education (academic discipline and class rank) and experience-related factors (years of work experience and age). The results also revealed that men had a higher level of enthusiasm for and confidence in personal finance issues. The majority of students reported that they obtained financial knowledge through their parents.
Other studies conducted in the early 2000s continued to find that college students did not have a high level of financial knowledge, both within the United States (Jones, 2005; Murphy, 2005; Avard, Manton, English, & Walker, 2005) and outside it (Beal & Delpachitra, 2003). Studies used the terms “financial literacy” and “financial knowledge” interchangeably and reported common variables associated with financial knowledge/literacy such as gender. Typically males scored better but were also more likely to be in academic fields that emphasized financial knowledge skills. Avard et al. (2005), however, found little difference between males and females in their examination of college students’ financial knowledge.

Several studies have used the Jump$tart survey to explore financial literacy (e.g. Norvilitis, Osberg, Young, Merwin, Roehling, & Kamas, 2006; Eitel & Martin, 2008; Robb & Sharpe, 2009; Lalonde & Schimdt, 2009). Jump$tart is a “national coalition of organizations dedicated to improving the financial literacy of pre-kindergarten through college-age youth by providing advocacy, research, standards and educational resources” (www.jumpstart.org). The study of financial knowledge/literacy has often been coupled with examination of credit card behaviors. Norvilitis et al. (2006) explored three sets of risk factors (financial knowledge and attitudes, personality factors, and demographic factors) which they believed would predict students’ debt and factors predicting the effects of debt. The results showed that lack of financial knowledge, greater student age, greater number of credit cards, lower ability to delay gratification, and positive attitudes toward credit card use were significantly related to debt. They also found that higher debt significantly contributes to lower financial well-being, higher stress, and longer projected repayment of college loans. Later, Eitel and Martin (2008) studied 204 female first-generation college students and found that Caucasian and older students scored higher on financial literacy than Black or Hispanic
and younger age students. Robb and Sharpe (2009) studied the relationship between personal financial knowledge and credit card behavior among 6,250 college students at a large Midwestern university. The results indicated that the relationship between financial knowledge and actual behavior was not clear. For example, they found that students with higher financial knowledge also had significantly higher credit card balances. Some possible explanations for this unexpected result include differences between students who completed the survey and those who did not, inability of measures financial need or financial attitudes to capture why students carry a higher balance, and the fact that the measure of personal financial knowledge used in the study was experimental (validity was not tested for multiple samples). Lalonde and Schmidt (2009) examined factors that contributed to financial literacy among 192 college students at a small liberal arts college in the Northeastern United States. The number of credit cards and degree of interest in personal finance were the most significant predictors of financial literacy and, contradicting previous findings, women showed a higher level of financial literacy than men.

Like the Jump$tart studies, research on financial knowledge/literacy has often been coupled with examination of credit card behaviors, but sometimes investigators have used tools other than JumpStart to measure financial literacy (Robb, 2008; Xiao, Serido, & Shim, 2010). Robb (2008) explored the relationship between personal financial knowledge and credit card behaviors among 1,354 college students at a larger, public university in the southeast. Personal financial knowledge was measured using a six-question scale designed to capture general financial information. The results showed that financial knowledge influenced whether students reported having credit cards at the maximum limit, used one credit card to pay off another, always paid off balances at the end of the month, frequency of
making only the minimum payment, delinquency, exceeding their credit card limit, and taking cash advances on their cards. In general, the above studies showed mixed results on the relationship between financial literacy/knowledge and credit card behaviors.

A recent study on financial knowledge was conducted by Xiao et al. (2010) to examine the associations among financial education, financial knowledge, and risky credit behavior of college students. Financial knowledge was measured using both subjective and objective instruments. Subjective knowledge referred to students’ self-assessment of their financial knowledge on a five-point scale from one (very low) to five (very high). Objective knowledge was measured using eight true-false questions developed by Hilgert et al. (2003). The results showed that personal finance courses may contribute to the subjective knowledge of students, which in turn may contribute to a lower likelihood of engaging in credit paying behavior. The results also revealed that objective credit knowledge reduces risky paying and borrowing behaviors.

Other studies used different measures and scales of financial knowledge/literacy but did not examine credit card behaviors exclusively (Borden, Lee, Serido, & Collins, 2008; Heckman, 2009). Borden et al. (2008) examined the influence of a financial education seminar (Credit Wise Cats) on the financial knowledge, attitudes, and behavior of 93 college students. The financial knowledge score was computed to detect good financial management practices, with items such as paying off store and other credit cards each month and having a high APR credit card. The study found that students had significantly higher financial knowledge at post-test than pre-test, and that male students showed more financial knowledge than female students. Heckman (2009) evaluated the determinants of personal finance knowledge among college students and how this knowledge affects their perceived
self-efficacy in dealing with financial issues. A 20-item personal finance index from Avard et al. (2005) was used to measure personal financial knowledge. Holding age and gender constant, the study found that financial knowledge was significantly and positively associated with self-efficacy, which suggests that more knowledgeable students should be more effective and confident in financial matters.

In summary, there is as yet no single standard measurement of financial literacy and/or financial knowledge of college students. Nevertheless, previous studies agree that a lack of financial knowledge is a growing problem in the U.S. and other countries. The literature overview also shows that the terms “financial literacy” and “financial knowledge” often have been used interchangeably, but the current literature suggests that the two terms are not equivalent. To be considered financially literate, one must be able to use knowledge of personal finance to make sound financial decisions.


Personal financial wellness is a complex concept with multiple dimensions distributed along a continuum (Prawitz, Garman, Sorhaindo, O’Neill, Kim, & Drentea, 2006; Joo, 2008; Rutherford & Fox, 2010). Financial wellness has been studied extensively by consumer scholars in various topical areas such as credit management, net worth, savings amounts, attitudes, and satisfaction (Rutherford & Fox, 2010). Joo and Grable (2003) defined financial wellness as an active state of financial health evidenced by low debt level, active savings and/or retirement plan(s), and a good spending plan. More recently, Joo (2008) broke down
financial wellness into four sub-concepts: objective status, financial satisfaction, financial behavior, and subjective perception.

Financial satisfaction has been defined as satisfaction with one’s income, ability to handle financial emergencies, amount of debt, level of savings, and money for future needs (Hira & Mugenda, 1998). The ability to manage financial resources effectively is an important component of financial satisfaction. Satisfaction is achieved when a need or desire is fulfilled, financial satisfaction therefore can be defined as the difference between desired and actual financial situation. Financial satisfaction is measured both objectively by factors such as income and wealth, and subjectively by comparison to a standard or reference point (Lown & Ju, 1992).

Rutherford and Fox (2010) found that financial satisfaction should be measured using several items to capture respondents’ feelings regarding their financial situation. Previous researchers (Berger, Powell, & Cook, 1988; Krannich, Riley, & Leffler, 1988; Lown & Ju, 1992) have suggested that the most economical and reliable measure of financial satisfaction appears to be a six-item index measuring one’s satisfaction with level of income, level of savings, amount of money owed, money for family necessities, money for future needs of the family, and ability to handle financial emergencies. Hira and Mugenda (1999a; 1999b) measured financial satisfaction with multiple items including satisfaction with (a) money saved, (b) amount of money owed, (c) current financial situation, (d) ability to meet long-term goals, (e) preparedness to meet emergencies, and (f) financial management skills. Joo and Grable (2004) however suggested that a single-item measure of financial satisfaction can be as effective as a multi-item measure; a one-item 10-point stair-step question asked respondents to choose how satisfied they were with their present financial situation. Financial
satisfaction was measured on a five-point scale (1-very unsatisfied, 5-very satisfied) by Xiao et al. (2009) when they studied financial behavior and life satisfaction of college students.

Since financial satisfaction is not tied to having a specific amount of money, two people may feel different degrees of satisfaction when experiencing the same financial situation. That is, one person may feel very satisfied while another may not, despite having similar financial resources (Rutherford & Fox, 2010). Regardless of this element of subjectivity, satisfaction with personal financial affairs generally has been shown to contribute to life satisfaction (Kapoor, Dlabay, & Hughes, 2007; Xiao et al., 2009).

Joo & Grable (2004) noted that learning how to manage money wisely is likely to lead to financial satisfaction, as well as to financial wellness. Further research by Joo (2008) found financial satisfaction to be a significant predictor of financial wellness. Well-being or a good quality of life is an ongoing goal for individuals and a major criterion for evaluating governments and societies. The variety of methods for assessing well-being has increased in recent years (Kahn & Juster, 2002). According to Kahn and Juster (2002), scales of satisfaction-dissatisfaction and happiness-unhappiness still predominate and subjective well-being is most commonly assessed using self-reports of satisfaction and dissatisfaction. Results suggest that young people who “feel lucky” in their financial affairs (i.e., are satisfied with the state of their finances) are more likely to indicate financial wellness compared to those who were felt unlucky (Rutherford & Fox, 2010). Financial well-being is defined as “a state of being financially healthy, happy, and free from worry” and is based on subjective appraisals of one’s financial situation (Joo, 2008, p. 22). Porter (1990) defined perceived attributes as “an individual’s subjective evaluation of his/her own financial situation” (p. 24). She used satisfaction with income, level of living, net worth, general financial management,
cash management, credit management, risk management, capital accumulation, and retirement/estate management as the perceived indicators of financial well-being. Overall satisfaction with one’s financial situation is often used as a measure of financial well-being (Joo, 2008). Conversely, financial well-being often arises from overall satisfaction with one’s financial situation (Van Praag et al., 2003). In a recent study by Malone, Stewart, Wilson, and Korsching (2010), financial well-being was measured in four domains: buying behavior, perception of current finances, perception of financial future, and attitude toward long-term care insurance.

Prawitz et al. (2006) developed the Incharge financial distress/financial well-being scale (IFDFW) to measure the level of stress and well-being resulting from one’s personal financial condition. The IFDFW scale is an eight-item self-report, a subjective measure of financial distress/financial well-being. This scale has been used to study various groups of people including adults (Garman, Sorhaindo, Prawitz, O’Neill, Osteen, Kim, Drentea, Haynes, & Weisman, 2005; Garman & Sorhaindo, 2005) and college students (Copur, Gutter, Eisen, & Way, 2008). Copur et al. (2008) used the IFDFW scale to measure college students’ financial well-being. They found that average financial well-being scores differed significantly by race, marital status, class rank, monthly income from work, work hours, and type of financial aid received.

Recent studies on college students’ financial behavior have found that credit card debt is negatively correlated with academic achievement and health (Lyons, 2004; Adams & Moore, 2007) and positively correlated with decreased financial well-being (Norvilitis et al., 2006). Financial circumstances such as mismanagement of credit cards and/or accumulated credit card debt may also have a negative effect on students’ psychological well-being,
interpersonal and family relationships, and chances of being successful in adulthood (Shim et al., 2009). Little is known about the links between young adults’ financial behavior and their financial well-being (Shim et al., 2010).

There is significant overlap in the definition and measurement of financial wellness, financial satisfaction, and financial well-being. No single definition or measurement tool has yet emerged from the literature, making it difficult for researchers, educators, and policy makers to draw conclusions or make recommendations about the financial circumstances of various population subgroups. Additional attention to college students’ financial attitudes and conditions is clearly warranted.

*Consumer and financial socialization*

According to Lachance and Choquette-Bernier (2004), many students learn basic financial knowledge through observation, parental communication, and/or through trial and error. Consumer socialization research suggests that much of the consumer knowledge and behavior in adults was learned during pre-adult years through the influence of socialization agents such as parents, family members, peers, media, school, and religion (Churchill & Moschis, 1979; Moschis & Moore, 1984). These agents (parents, peers, and media) influence the knowledge, attitudes, and behavioral development of young people as they become consumers in the marketplace (Moore, Raymond, Mittelstaedt, & Tanner, 2002). Martin and Oliva (2001) determined that financial decisions made early in life will affect students’ ability to become financially secure adults. Thus, what college students learn and experience as children and youth may affect both their knowledge and management of personal finances. As many studies have found, family, peers, school, and the media are typical sources of financial information (Fox et al., 2000; Pinto, Parente, & Mansfield, 2005; Koonce et al.,
Financial socialization, according to Danes (1994) is “much more inclusive than learning to effectively function in the marketplace. It is the process of acquiring and developing values, attitudes, standards, norms, knowledge, and behaviors that contribute to the financial viability and well-being of the individual” (p.128).

Pinto et al. (2005) found that college students learned more information about credit cards from their parents than from any other socialization agent (peers, school, or media). Lachance and Legault (2007) found that parents are the only significant social sources of consumer knowledge. It appears that most previous studies have focused on the influence of parents rather than the influence of peers, school, and the media in predicting college students’ financial knowledge. In addition, few studies have focused on the role of ethnic differences in understanding college students’ financial socialization and financial literacy. Perhaps students from different ethnic or cultural backgrounds are socialized differently and these differences affect their acquisition of knowledge in personal finance. Additional attention to family and cultural influences on college students’ financial knowledge and well-being is needed to illuminate this question.

References


CHAPTER 2: CHILDHOOD CONSUMER EXPERIENCE AND THE FINANCIAL LITERACY OF COLLEGE STUDENTS IN MALAYSIA

A paper published in the *Family & Consumer Sciences Research Journal*

Mohamad Fazli Sabri, Maurice MacDonald, Tahira K. Hira, and Jariah Masud

Abstract

The purpose of this study was to investigate the impact of personal and family background, academic ability, and childhood consumer experiences on the financial literacy of college students in Malaysia. The sample comprised 2,519 students in 11 public and private colleges in Malaysia. Financial literacy was measured with a 25-item test of financial knowledge. On average, students answered less than half of the questions correctly. Methods of analysis included bivariate t-tests, analysis of variance, and multiple regression analysis. The childhood consumer experience of discussing family finances with parents has a substantial positive relationship with financial literacy. Students of Chinese ethnicity, who live on campus, and who attend private colleges are less likely to be financially literate.

Keywords: Childhood consumer experience, Financial literacy, Malaysian college students

Introduction

This study of college students’ financial literacy is motivated by concern about how young Malaysians obtain knowledge to handle credit and other important aspects of personal finances as the Malaysian economy develops. Malaysians have a variety of cultural and ethnic backgrounds that may affect the process for acquiring financial knowledge from their families, schools, and through diverse childhood consumer experiences. Obtaining better knowledge about specific influences on college students’ financial literacy is necessary to design more effective financial education programs. Hence, the main objective is to investigate the impact of personal and family background, academic ability, and childhood consumer experience on financial literacy.
Rapid economic development, since independence in 1957, has brought drastic changes for young Malaysians, including increased income (Economic Planning Unit, 2006) and expansion of consumer markets (Department of Statistics Malaysia, 2005). However, the expansion of consumer credit and recent economic troubles suggest the need for better household financial management. Consumer credit card use increased from Malaysian Ringgit (MR) 10.2 million in 2003 to MR 12.8 million in 2006 (Central Bank of Malaysia, 2009a). Data from the Central Bank of Malaysia (2009b) indicated that the numbers of individuals who declared bankruptcy increased from 11,685 in 2001 to 16,251 in 2004.

Malaysian college students became a lucrative consumer market segment as the number of students enrolled in tertiary education tripled between 1999 and 2005 (Department of Statistics Malaysia, 2008). As the standard of living among Malaysians has improved significantly and stimulated changing lifestyles, college students today are granted greater freedom from their parents to make their own shopping and consumption decisions (Kamaruddin & Mokhlis, 2003). Inadequate knowledge of personal finance may increase conspicuous consumption and lead to poor financial management. According to Bodvarsson and Walker (2004), and Lyons (2003; 2004) poor financial management can affect students’ academic performance, mental and physical well-being, and even their ability to find employment after graduation. Previous studies in the United States and other countries have shown that college students had inadequate financial knowledge and might have been poor managers of their finances (Markovich & DeVaney, 1997; Chen & Volpe, 1998; Murphy, 2005).

Because the Malaysian consumer market has changed tremendously, the role of parents for monitoring their children’s consumption habits has become more critical and
parents’ characteristics may also be related to the development of their children’s financial knowledge and behavior (Clarke, Heaton, Israelsen, & Egget, 2009). Consumer socialization research suggests that much of the consumer behavior among adults is learned during preadult years through the influence of socialization agents (Moschis & Moore, 1984). Thus, what college students have learned and experienced in the past could affect their knowledge of personal finance much more than is currently understood. Furthermore, Malaysia’s ethnic diversity and potentially related differences in family experiences suggest a need to understand the impact of ethnic background on college students’ financial literacy. A considerable amount of previous research on young Malaysians has been devoted to the impact of ethnicity on academic achievement (Hashim, O’Neil, & Hocevar, 2002; Ismail & Awang, 2008), consumer socialization (Kamaruddin & Mokhlis, 2003), and financial knowledge concerning educational loans (Abu Bakar, Masud, & Md. Jusoh, 2006).

Consumer Socialization Framework

Previous research has emphasized that parents, peers, printed media, television commercials, and in-school education are the most important agents of consumer socialization (Moschis, 1987; O’Guin, & Farber, 1989; Chan & McNeal, 2006). Therefore, personal and family background, childhood consumer experience (savings account experience, and discussion of family financial matters with parents), and student characteristics may have significant impacts on financial literacy as an outcome among college students in Malaysia. Presumably, the earlier the students’ involvement in financial activities, the better the impact for their financial knowledge. The student characteristics in this study include academic achievement (grade point average [GPA]) and year in college, which indicate cognitive ability and are expected to be positively related to financial literacy.
scores because that ability may improve test performance. Personal and family background includes gender, ethnicity, and place of origin, type of college, students’ residence, and parents’ education.

Literature Review

Not much is known about financial knowledge and behaviors among young Malaysians. Therefore, this discussion focuses on literature about college students’ financial literacy elsewhere and what has been learned from two studies of Malaysian adolescent consumers.

*Childhood Consumer Experience*

Danes (1994) investigated parental perceptions of children’s financial socialization. Parents were asked at which age they would share information or become involved with the child in several financial activities. For complex financial activities (such as knowing about insurance, and having their own checking account) most parents believed that children should be engaged at the age of 15 to 17. More than half of the parents thought children at age 18 or older were ready to be responsible for their own checking account, credit cards, and other personal loans. Hira (1997) studied financial attitudes, beliefs, and behavior of college students from three personal finance classes, supplemented by a state-wide sample for Iowa in the United States. Hira found that individuals express different money behaviors and beliefs because of the different ways in which money was handled in their family. The majority of students indicated that their mother and father were the most important source of influence on money beliefs and attitudes. About one third of the students identified their friends as a strong influence on their money behavior. In terms of family money
communication, about two thirds of the students said that finances were never discussed with children in their families.

*Personal and Family Background.*

Past research has commonly found that male college students had higher levels of financial literacy than their female counterparts (Markovich & DeVaney, 1997; Chen & Volpe, 1998, 2002). Murphy (2005) found that undergraduate business majors were more financially literate than nonbusiness majors and that those who were from more educated families scored better than those from less educated backgrounds. The JumpStart College Survey (Mandell, 2008) also found that financial literacy was monotonically related to parents’ education levels. Other research has demonstrated the importance of controlling for class year (Avard, Manton, English, & Walker, 2005) and the impact of academic abilities to understand how financial literacy varies (Chen & Volpe, 1998; Murphy, 2005).

Abu Bakar et al. (2006) examined students’ knowledge and attitudes regarding educational loans in Malaysia. They found that Chinese students and students from a rural area, and those in their senior year tended to have higher mean scores about educational loan knowledge. Kamaruddin and Mokhlis (2003) conducted a study of 934 adolescents in Malaysia on the topic of consumer socialization, sociostructural factors, and decision-making styles. They found that compared to Malays, Chinese youngsters were less likely to interact with parents and peers. Their findings also suggest that Chinese adolescents were less brand-conscious, fashion-conscious, and recreational-oriented toward shopping activities than their Malay counterparts. Adolescents who lived in suburban and urban areas were more likely to be brand-conscious and fashion conscious. Hence, college students in more urbanized areas
and from Malay ethnicity background may be less concerned about financial knowledge for
goals such as saving, versus consumption for brand and fashion purposes.

Hypotheses

Some general hypotheses are appropriate for this exploratory study:

Hypothesis 1: Financial literacy will be associated with ethnicity, gender, students’ residence,
type of college, place of origin, and parents’ education.

Hypothesis 2: Students with greater academic achievement and more class years completed
will have greater financial literacy.

Hypothesis 3: Financial literacy will be positively related to childhood consumer experience,
and the earlier the experience the greater financial literacy.

Ethnicity is a predictor variable in the list for hypothesis testing because that
characteristic may represent different family cultural practices and market orientations that
influence financial knowledge. Including ethnicity helps to control for other unobservable
characteristics that are associated with aspects of family background or experience prior to
and during college. For example, Grable and Joo (2006) discussed racial differences in
exposure to wealth accumulation and structural barriers in education for African-Americans
as reasons why that ethnic group of college students differs from non-Hispanic whites with
respect to credit card debt and related financial behaviors. Although there is one study that
found ethnicity differences with respect to college students’ knowledge about student loans
(Abu Bakar et al., 2006), the reasons for that are unclear.
Methods

Sample

After receiving permission to conduct the study, a list of all public and private colleges in Malaysia was obtained. From the list, five public colleges and five private colleges were selected at random. In addition to the 10 randomly selected colleges, University Putra Malaysia included in the study to assist the authors for planning educational programs. The survey consisted of 25 true and false questions concerning financial goals, financial records, saving, investment, retirement, banking system, time value of money, wills, insurance, educational loan, and general knowledge on personal finance. The questions are shown in the Appendix 1.

For each college, 350 students were selected randomly using the list of names obtained from the student affairs office. The number of questionnaires distributed to the 11 colleges was 3,850. A total of 2,519 completed and usable questionnaires were returned by the students resulting in a 65% response rate. The average responses rates were: for the six public colleges, 72.8%, and for the five private colleges, 56.6%.

The main sources of missing data that caused reduction from the 2,519 respondents to an analysis sample size of 1,865 were analyzed. The results show that the most important reason for missing data is the dependent variable; 473 respondents did not answer all of the 25 questions about financial knowledge. Other variables which had high frequencies of missing data include childhood consumer experience reports. For example, 204 cases have missing data about discussing finances with parents.
Participants

Of the 2,519 students who responded to the survey, 40.4% are male and 59.6% are female students. The ethnic composition is Malay (67.2%), Chinese (21.6%), Indian (5.0%), and others (5.3%). The mean age of the respondents is 20.9 years with standard deviation of 2.99. A majority of the students live on campus (71.7%). Most of the students report that they are in a public college (60.7%), and from a rural area (51.3%). About one third of the sample was sophomores. The average GPA is 3.00. More than half of the students in the sample are not employed (59%) and nearly all of them are not married (98.4%). The students report that 78% of their fathers and 70% of their mothers have a secondary education, or better (28% of fathers are college educated, and 22% of mothers). Regarding parental marital status, 55% of students report that their parents are married and living together, 21% report their parents are divorced, and 12% report their sole parent is a widow or widower.

Measurement of Variables

The measurements of all variables are defined in Table 1, which also provides descriptive statistics. The dependent variable, financial literacy, is measured by testing for correct answers on 25 questions concerning financial goals, financial records, saving, investment, retirement, banking system, time value of money, wills, insurance, education loan, and general knowledge on personal finance. The average score is 11.77, with a standard deviation of 3.66. The Cronbach’s alpha statistic from reliability analysis of the financial literacy score is .70. Because most of the independent variables are qualitative characteristics, all of them were specified as categorical variables for ease of comparing their effects as predictors. Thus, the descriptive statistics for the independent variables are shown as category percentages.
Respondents were asked at what age they became involved in financial activities, which included having their own saving account, and discussing financial matters with parents. Response categories about when each of these financially-related activities began were: < 7, 7-12, 13-15, 16-17, > 18 years, and “never”. For both childhood consumer experience variables, two dummy variables were created to measure the timing of each experience relative to the age at which the most respondents began that experience. The reference group and most frequent category for when saving accounts began was age 7-12 years. The most frequent category for discussing finances was “never”.

**Analysis Procedures**

T-tests were used to examine the significance of mean differences in financial literacy for predictors with two categories (e.g., gender) and analysis of variance to test for literacy mean differences with multiple category variables. Test of hypotheses were obtained from ordinary least squares multiple regressions in a step-wise procedure. First, the personal and family background variables were used to predict financial literacy. Second, the academic abilities variables were added as predictors while continuing to control for personal and family background. In the final stage the childhood consumer experience variables were added.

**Results**

The average score on the 25-item test of financial knowledge is 11.77, that is, less than half of the questions were answered correctly. Tables 2 and 3, respectively, show the results of bivariate $t$ tests and analysis of variance for financial literacy scores. Students of Chinese ethnicity have lower mean scores than Malay, Indian, and the other ethnic groups, which is not consistent with a previous finding that Chinese students were more likely to
have greater knowledge about educational loans (Abu Bakar et al., 2006) and were also better in mathematics achievement (Ismail & Awang, 2008). The bivariate results also demonstrate that students from private colleges have a lower mean score for financial literacy than students from public colleges. First year students and those students who never had an experience discussing finances with parents are also more likely to have lower financial knowledge scores. To summarize, the bivariate tests reveal that Chinese students, those from private colleges, freshmen, and those who had never discussed finances with parents have less financial knowledge. Financial literacy is not different with respect to gender, place of origin, students’ GPA, residence (on- or off-campus), parents’ education, and savings account experience.

Table 4 shows the results from the three multiple regressions. The first model included only personal and family background. In the second model, academic ability was added, and in the third model, childhood consumer experience was added. The table reports the results for standardized regression coefficients ($\beta$s). As shown in column 1, the regression model for personal and family background influences is significant, explaining 2.7% of the total variance in financial literacy ($R^2 = .027$, $F=3.438$, $p<.001$). Financial literacy is significantly associated with: ethnicity, students’ residence, and type of college. Chinese ethnicity has a greater effect size than for living on campus and public college. However, the negative coefficient indicates that Chinese ethnicity is associated with lower financial literacy. Students who lived on campus are more likely to have a low level of financial literacy. Public college students have greater financial literacy than students from private colleges. Gender, parents’ education, and rural versus urban place of origin are not significant (and that remained the case in subsequent regressions).
The second regression focusing on academic ability to explained 3.1% of the total variance in financial literacy ($R^2 = .031$, $F=2.988$, $p<.001$). Four variables are significant ($p<.05$) or marginally significant ($p<.10$). The significant variables are ethnicity, students’ residence, type of college, and year in college. The academic ability variables do not improve explanatory power very much, but year in college (i.e., freshman) is marginally significant indicating that freshman students have lower financial literacy compared to sophomores. There is no effect of GPA on financial knowledge. Type of college is marginally significant, but the effects of ethnicity and campus residence are very similar to the first regression estimates for those variables.

The final regression that includes childhood consumer experience is significant overall, explaining 4.0% of the total variance in the financial literacy scores ($R^2 = .040$, $F=3.160$, $p<.001$). Significant and marginally significant predictors of variance in financial literacy include ethnicity, students’ residence, and type of college, saving account experience, and having experience discussing finances with parents. Adding childhood consumer experience predictor variables does improve explanatory power for financial literacy. However, none of the academic ability variables are significant in this final stage regression. Students who have experience discussing finances with parents are associated with greater financial knowledge than those who never had that experience. The estimated effect size of discussing finances with parents at a later age (> 18 years, $\beta = .093$) is third in rank order of magnitude, after Chinese ethnicity ($\beta = -.163$) and nearly as large as for staying on campus ($\beta = -.097$). Students who never had their own saving account and began to save with an account after age 13 have less financial knowledge ($\beta = -.045, p<.10$) than those who began saving between the ages 7-12. Ethnicity is a strong predictor of financial literacy with
a negative coefficient indicating that Chinese students are associated with lower financial
knowledge. Students’ residence was significant demonstrating that students who stay on
campus have less financial knowledge. Type of college is marginally significant indicating
that public college students in Malaysia have greater financial knowledge.

Discussion

The descriptive analysis of financial literacy of Malaysian students reveals that
students of Chinese ethnicity, students in private colleges, freshmen, and students who never
discussed finances with parents in their childhood have less financial knowledge. The final
regression provides confirmation for Chinese ethnicity, college type, and discussing finances
with parents. An additional multivariate finding is that on-campus students have less
financial knowledge. There is no multivariate evidence of gender, place of origin, or
socioeconomic disadvantage for financial literacy.

The results for type and timing of childhood consumer experience demonstrate that
discussing family finances with parents is a positive influence on financial literacy, which
suggests that more involvement with important aspects of family finance could provide better
knowledge and experience about money management among Malaysian college students. A
study by Peng, Bartholomae, Fox, and Cravener (2007) found that an investment knowledge
score improved if the respondents held a bank account before age 18. This study’s
multivariate results are somewhat similar. Those who began a savings account between the
ages of seven and 12 have greater financial knowledge than those who began that practice
after age 13 or have not yet opened a savings account (a marginally significant result).

The estimated effect of Chinese ethnicity is negative and greater in absolute
magnitude than any of the other predictor variables. It was not expected that ethnicity would
be as important as it is, nor that the effect for Chinese ethnicity would be negative because Chinese students in Malaysia have been found to have higher mathematical achievement (Ismail & Awang, 2008), and they were also found to know more about educational loans (Abu Bakar et al., 2006).

College students who lived off-campus are more likely to have greater financial knowledge. It is reasonable to suggest that this association occurs because off-campus students probably have more financial responsibilities and liabilities. For example, costs associated with on-campus living (rent and utilities) are typically deducted from their educational loans or scholarships.

Students from public colleges are more likely to have greater financial knowledge. Under Malaysia’s New Economic Policy, public universities are required to reserve an ethnic quota of at least 60% of university places for Malays and others of indigenous origins which accounts in part for the fact that the majority of students in public college came from low or middle-income families (Joseph, 2008). Perhaps students from those less well-off families have greater financial literacy because financial strain led their parents to emphasize the importance of finances for a happy life. In contrast, most of the private college students came from upper-income families who provide for more of their typical expenditures so that the private college students may not be as motivated to learn about financial management. That stratification of college type according to family income may also explain why parents’ education is not a significant predictor of financial literacy.
Conclusion

Policy Significance

This study provides evidence that financial illiteracy is a problem among college students in Malaysia. The average score on the 25-item test of financial knowledge is < 12, that is, less than half of the questions were answered correctly. Multivariate analysis demonstrated that financial illiteracy is concentrated among Chinese students, those who live on campus, and students at private colleges. Those results may help to identify student population subgroups that would benefit the most from educational programs about money management. These are important findings because a typical assumption would be that socioeconomic advantage would be associated with greater financial socialization. Thus, Malaysian private, as well as public, college administrators and faculty leaders should consider how to monitor and improve financial knowledge for their students. Clearly, the main educational policy implication for Malaysia is that all kinds of college students have deficits in their financial knowledge and need better financial education.

The results may also be beneficial to financial counselors who work with students on a one-to-one basis at various stages of a student’s study program. Malaysian colleges could take a more holistic approach when addressing the financial needs of their students. For example, student organizations and parents could contribute to students’ financial knowledge, along with on-campus residence managers and campus service offices such as student affairs and financial aid.

The focus here on childhood consumer experience also has implications for Malaysian family life educators and parents. Continuous education from parents could be important for newly affluent young adults in Malaysia even though they are entering a life
stage that brings more financial independence. Although the reasons why Chinese college students tend to have less financial knowledge are unknown, that result indicates Chinese parents and youth educators should be informed that they need to encourage their children to learn more about personal financial management. In support of this recommendation, it is noteworthy that Kamaruddin and Mokhlis (2003) found that Chinese adolescents were less likely to interact with their parents and peers than Malay youngsters.

Study Limitations

The financial literacy instrument was developed primarily for Malaysian students, which makes it difficult to compare results directly to other tests of financial knowledge. Information about childhood consumer experience was self-reported. Thus, there is a need for corroborative evidence from parents and other educators in future studies. The explanatory power of the financial literacy regressions is statistically significant but quite low—explaining < 5% of the variance in total scores. Hence, additional information is needed to provide a better description of how students learn about finances for more specific guidance for educators and policy makers. It may be particularly useful to include the work experience and sources and amounts of the students’ current incomes (Chen & Volpe, 1998). Specific information about whether the students have had formalized consumer or financial education would also be valuable (Bernheim, Garret, & Maki, 2001; Peng et al., 2007). Finally, studies of college student and young adult financial behavior (e.g., Xiao, Noring, & Anderson, 1995) have shown that questions about experience with consumer debt can serve as good indicators of informal learning. Conducting studies with Malaysian adolescents to learn about their consumer financial experiences could be more informative than college students’ retrospective reports about childhood experience. Because there is substantial
variation in the age at which Malaysia’s college students obtained consumer experience, further research is also needed to learn more about how that timing affects financial literacy.

References


Lyons, A. (2003). *Credit practices and financial education needs of Midwest college students*. Champaign, IL: Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign.


Figure 1. Theoretical Framework

- Personal and Family Background
  - Gender
  - Ethnicity
  - Place of origin
  - Type of college
  - Student residence
  - Parents education

- Academic Ability
  - GPA
  - Year in college

- Childhood Consumer Experience
  - Owned savings account
  - Received an allowance
  - Discussed finances with parents

- Financial Literacy
Table 1. Measurement and Descriptive Statistics of College Students in Malaysia  
(N = 2,519)

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variables (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial literacy</td>
<td>Correct answers for 25 financial knowledge questions: ( M = 11.77, \ SD = 3.66 )</td>
</tr>
<tr>
<td>Personal and Family Background</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Female =1, otherwise 0 59.6</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Malay = 1, otherwise 0 67.2</td>
</tr>
<tr>
<td></td>
<td>Chinese = 1, otherwise 0 21.6</td>
</tr>
<tr>
<td></td>
<td>Indian = 1, otherwise 0 5.0</td>
</tr>
<tr>
<td></td>
<td>Other (reference group) 6.2</td>
</tr>
<tr>
<td>Place of origin</td>
<td>Rural =1, otherwise 0 51.3</td>
</tr>
<tr>
<td>Type of college</td>
<td>Public university = 1, otherwise 0 60.7</td>
</tr>
<tr>
<td>Student’s residence</td>
<td>Stay on campus = 1, otherwise 0 71.7</td>
</tr>
<tr>
<td>Father’s education level</td>
<td>Elementary = 1, otherwise 0 19.7</td>
</tr>
<tr>
<td></td>
<td>Secondary =1, otherwise 0 43.9</td>
</tr>
<tr>
<td></td>
<td>College degree =1, otherwise 0 28.2</td>
</tr>
<tr>
<td></td>
<td>Graduate = 1, otherwise 0 5.7</td>
</tr>
<tr>
<td></td>
<td>No formal education (reference group) 2.5</td>
</tr>
<tr>
<td>Mother’s education level</td>
<td>Elementary = 1, otherwise 0 23.5</td>
</tr>
<tr>
<td></td>
<td>Secondary =1, otherwise 0 48.4</td>
</tr>
<tr>
<td></td>
<td>College degree = 1, otherwise 0 20.0</td>
</tr>
<tr>
<td></td>
<td>Graduate = 1, otherwise 0 1.5</td>
</tr>
<tr>
<td></td>
<td>No formal education (reference group) 6.6</td>
</tr>
<tr>
<td>Academic ability</td>
<td>Grade Point Average &lt; 2.50 (reference group) 24.0</td>
</tr>
<tr>
<td></td>
<td>Grade Point Average 2.50 – 3.00 = 1, otherwise 0 72.4</td>
</tr>
<tr>
<td></td>
<td>Grade Point Average &gt;3.00, = 1, otherwise 0 3.6</td>
</tr>
<tr>
<td>Year in college</td>
<td>Freshman = 1, otherwise 0 29.5</td>
</tr>
<tr>
<td></td>
<td>Sophomore (reference group) 32.9</td>
</tr>
<tr>
<td></td>
<td>Junior = 1, otherwise 0 26.2</td>
</tr>
<tr>
<td></td>
<td>Senior =1, otherwise 0 11.4</td>
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<tr>
<td>Childhood Consumer Experience</td>
<td>Own saving account &lt; 7 years = 1, otherwise 0 23.2</td>
</tr>
<tr>
<td></td>
<td>Own saving account 7-12 years (reference group) 37.0</td>
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<td></td>
<td>Own saving account &gt; 13 years or never =1, otherwise 0 39.8</td>
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<td>Discuss finances with parents &lt; 7 to 17 =1, otherwise 0 38.0</td>
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<td></td>
<td>Discuss finances with parents &gt; 18 = 1, otherwise 0 32.5</td>
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<tr>
<td></td>
<td>Discuss finances with parents never (reference group) 29.5</td>
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Table 2. T-tests of Differences in Financial Literacy Scores of College Students in Malaysia (N = 2,519)

<table>
<thead>
<tr>
<th>Personal and Family Background</th>
<th>Variables</th>
<th>$p$ value</th>
<th>$T$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
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</tr>
<tr>
<td></td>
<td>Female</td>
<td>11.87</td>
<td></td>
</tr>
<tr>
<td>Place of origin</td>
<td>Rural</td>
<td>11.89</td>
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<td></td>
<td>Urban</td>
<td>11.65</td>
<td></td>
</tr>
<tr>
<td>Type of college</td>
<td>Public</td>
<td>11.96</td>
<td>.00**</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>11.47</td>
<td></td>
</tr>
<tr>
<td>Student’s residence</td>
<td>On campus</td>
<td>11.78</td>
<td>.86</td>
</tr>
<tr>
<td></td>
<td>Off campus</td>
<td>11.74</td>
<td></td>
</tr>
</tbody>
</table>

** $p < .01$. 


Table 3. Analysis of Variance for Financial Literacy Scores of College Students in Malaysia (N = 2,519)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean differences</th>
<th>p value</th>
<th>F value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal and family background</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>aMalay</td>
<td>11.98</td>
<td>.00***</td>
<td>10.55</td>
</tr>
<tr>
<td>bChinese</td>
<td>10.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cIndian</td>
<td>12.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dOther</td>
<td>12.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father’s education level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>11.96</td>
<td>.99</td>
<td>.07</td>
</tr>
<tr>
<td>Elementary</td>
<td>11.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>11.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College degree</td>
<td>11.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate degree</td>
<td>11.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother’s education level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>11.88</td>
<td>.99</td>
<td>.06</td>
</tr>
<tr>
<td>Elementary</td>
<td>11.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>11.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College degree</td>
<td>11.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate degree</td>
<td>11.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic ability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>aGrade Point Average &lt; 2.50</td>
<td>11.71</td>
<td>.06*</td>
<td>2.76</td>
</tr>
<tr>
<td>bGrade Point Average 2.50 – 3.00</td>
<td>11.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cGrade Point Average &gt; 3.0</td>
<td>10.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year in college</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>aFreshman</td>
<td>11.43</td>
<td>.05*</td>
<td>2.62</td>
</tr>
<tr>
<td>bSophomore</td>
<td>11.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cJunior</td>
<td>11.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dSenior</td>
<td>11.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Childhood consumer experience</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own savings account</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 7 years</td>
<td>11.75</td>
<td>.13</td>
<td>2.04</td>
</tr>
<tr>
<td>7 -12 years</td>
<td>11.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never and &gt; 13 years</td>
<td>11.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discuss finances with parents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a&lt;7 to 17</td>
<td>11.88</td>
<td>.00***</td>
<td>9.38</td>
</tr>
<tr>
<td>b&gt; 18 years</td>
<td>12.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cNever</td>
<td>11.28</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: The different pairs of letters represent the means of the groups (e.g., aMalay, bChinese, cIndian, dOther) that were significantly different from each other. For example, the letters ab show that the average for Malaysian students was significantly different from the average score for Chinese students.

+ p <.10. * p < .05. ** p < .01. *** p < .001.
Table 4. The Effect of Personal and Family Background, Academic Ability, and Childhood Consumer Experience on Financial Literacy Scores of College Students in Malaysia (N = 1,865)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
<th>Model 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>β</td>
<td>b</td>
<td>β</td>
<td>b</td>
<td>B</td>
</tr>
<tr>
<td>Personal and family background</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malay ethnicity</td>
<td>-.02</td>
<td>-.37</td>
<td>-.01</td>
<td>-.24</td>
<td>-.02</td>
<td>-.34</td>
</tr>
<tr>
<td>Chinese ethnicity</td>
<td>-.17</td>
<td>-3.60***</td>
<td>-.16</td>
<td>-3.43***</td>
<td>-.16</td>
<td>-3.44***</td>
</tr>
<tr>
<td>Indian ethnicity</td>
<td>-.00</td>
<td>-.07</td>
<td>-.00</td>
<td>-.02</td>
<td>-.00</td>
<td>-.09</td>
</tr>
<tr>
<td>Stay on campus</td>
<td>-.09</td>
<td>-3.27***</td>
<td>-.09</td>
<td>-3.21***</td>
<td>-.10</td>
<td>-3.44***</td>
</tr>
<tr>
<td>Public college (vs. private)</td>
<td>.06</td>
<td>2.34***</td>
<td>.05</td>
<td>1.83+</td>
<td>.05</td>
<td>1.74+</td>
</tr>
<tr>
<td>Academic Ability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade point average (&gt;3.0)</td>
<td></td>
<td></td>
<td>-.02</td>
<td>-.64</td>
<td>-.02</td>
<td>-.77</td>
</tr>
<tr>
<td>Grade point average (2.5-2.99)</td>
<td>.02</td>
<td>.75</td>
<td>.02</td>
<td>.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference group: &lt;2.50</td>
<td></td>
<td></td>
<td>-.05</td>
<td>-1.81+</td>
<td>-.04</td>
<td>-1.47</td>
</tr>
<tr>
<td>Freshman</td>
<td></td>
<td></td>
<td>-.01</td>
<td>-.40</td>
<td>-.01</td>
<td>-.40</td>
</tr>
<tr>
<td>Junior</td>
<td></td>
<td></td>
<td>-.03</td>
<td>-1.34</td>
<td>-.04</td>
<td>-1.40</td>
</tr>
<tr>
<td>Reference group: Sophomore</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Childhood Consumer Experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own saving account (&lt;7 years)</td>
<td>-.02</td>
<td>-.67</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own saving account (&gt;13 years or never)</td>
<td></td>
<td></td>
<td>-.05</td>
<td>-1.74+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference group: 7-12 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discuss finances with parents (&lt;7 to 16-17 years)</td>
<td>.07</td>
<td>2.46*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discuss finances with parents (&gt;18 years)</td>
<td>.09</td>
<td>3.37***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference group: never</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>.03</td>
<td>.03</td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.02</td>
<td>.02</td>
<td>.03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F value</td>
<td>3.44***</td>
<td>2.99***</td>
<td>3.16***</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: Other (nonsignificant) predictors included parents’ education, gender, and place of origin.

+ p < .10. *p < .05. **p < .01. ***p < .001.
Appendix 1. Financial Literacy Test True-False Questions

<table>
<thead>
<tr>
<th>Statement</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Buying goods on credit will reduce purchasing power in future</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. The increase of the price of goods will reduce buying power</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Balance sheet shows your financial status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Credit card holder can spend without limit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. We overspend when using savings to buy daily necessities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. The value of money can double after 10 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Savings is extra income after deducted expenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Interest will influence the future value of savings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Income statement shows income and the expenses of a family in a specific period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Will is unnecessary for a family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Buying insurance is the best investment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Savings account interest exceeds fixed deposit interest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Life insurance protects policy holder from financial burden</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. The longer the education loan is due the greater cost of financing it</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Unregistered business needs to pay income tax</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Owning a credit card will increase one’s purchasing power</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. One can spend more than 20% of their monthly income for installments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Using credit card to get cash has the lowest finance charge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. All types of investments are profitable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. We can borrow to invest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Motorcyclist do not need insurance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Employment Provident Fund (EPF) contribution are sufficient for retirement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. All Muslims must pay zakat$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. In Malaysia we only have a conventional banking system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. Family needs to save 3-month income for emergencies</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: $a$ The Malaysian Employees Provident Fund (EPF) Act of 1991 grants employees’ retirement benefits that are managed via a body that is intended to manage their savings. $b$ Paying a small percentage of one's surplus wealth to charity for poor and needy Muslims.
CHAPTER 3: A CONCEPTUAL MODEL OF PERCEIVED FINANCIAL WELL-BEING: EARLY CHILDHOOD CONSUMER EXPERIENCE, FINANCIAL SOCIALIZATION, AND FINANCIAL KNOWLEDGE PATHWAYS

A paper to be submitted to the *Journal of Financial Counseling and Planning*

Mohamad Fazli Sabri, Christine C. Cook, Mack Shelley, Tahira K. Hira, Steve Garasky, and Pat Swanson

Abstract

The issue of financial well-being among college students has received increasing attention. The purpose of this study is to examine the relationships between personal and family backgrounds, academic ability, early childhood consumer experience, financial socialization, financial knowledge and perceived financial well-being of college students. Data were collected from eleven public and private universities across Malaysia and the sample consists of 2,219 college students. Structural equation modeling indicated that early childhood consumer experiences such as savings habits contribute to students’ financial well-being (money saved, current financial situation, and financial management skills). Financial socialization agents, for example, through parents and religion sources could increase college students’ financial well-being. Financial knowledge was related to financial well-being. Overall, implications and recommendations for future research, teaching, and public policy are also provided for parents, college administrators, counselors, and educators.

Keywords: Financial well-being, early childhood consumer experience, financial socialization, financial knowledge

Introduction

College students are often considered a high-risk group when it comes to financial stability. Students often borrow to fund their college education, meaning that recent college graduates often carry a considerable debt load at a time when they are earning entry level salaries (Leach, Hayhoe, & Turner, 1999). Besides student loans, college students sometimes accumulate considerable credit card balances along with car loans and other forms of debt. Previous studies have shown that many college students have low levels of financial knowledge (Chen & Volpe, 1998; Henry, Weber, & Yarbrough, 2001; Murphy, 2005;
A low knowledge of personal finance among college students is expected to be associated with ineffective financial behaviors, including a lack of savings (Sabri & MacDonald, 2010), not keeping financial records (Chen & Volpe, 1998), and greater credit card debts (Norvilitis, Osberg, Young, Merwin, Roehling, & Kamas, 2006). According to Varcoe, Martin, Devitto, and Go (2005), poor financial habits acquired at a young age may carry on into adulthood and cause financial problems, in some cases serious ones, without some type of effective educational intervention. Norvilitis and Santa Maria (2002) confirmed that many students enter college with no experience with budgeting or personal finances, and are liable to use credit unwisely. This combination of high debt, low income, and low levels of financial knowledge may adversely affect college students’ financial well-being (Leach et al., 1999).

Quality of college life is a sub-domain of quality of life, and refers to the overall feeling of satisfaction students experience in college (Sirgy, Grezeskowiak, & Rahtz, 2007). An individual's feelings about his or her financial security and capability have appeared in previous studies as a threat to life satisfaction or an important contributor to life satisfaction (Xiao, Tang, & Shim, 2009; Shim, Xiao, Barber, & Lyons, 2009). Chow (2005) conducted a study on life satisfaction among university students in Canada and found that the five areas with which students were least satisfied were financial security, job situation, school performance, leisure and recreational activities, and spiritual life. Several other studies have shown that satisfaction with personal financial affairs is an important component in overall life satisfaction (Hira, 1997; Joo & Grable, 2005; Shim et al., 2009). Often financial satisfaction and financial well-being have been used interchangeably to mean a person's feeling about his or her current financial situation or condition; more recently the term
"financial well-being" has become preferred among investigators (Joo, 2008; Shim et al., 2009).

Studies show that poor financial management can affect more than students’ finances. Poor financial management can also impact academic performance, mental and physical well-being, and even the ability to find a job after graduation (Lyons, 2003; 2004). Current literature in consumer socialization has consistently found that children first learn about money at home, and that their parents are the primary source of financial knowledge and skills (Bowen, 2002; Chen & Volpe, 2002; JumpStart Coalition, 2006; Koonce, Mimura, Mauldin, Rupured, & Jordan, 2008). Consumer socialization is defined as the process “by which young people acquire skills, knowledge and attitudes relevant to their functioning in the marketplace” (Ward, 1974, p.2). However, there is little research about the influence of peers, school, religion, and media specifically on students’ financial knowledge because most of the research has focused more on the influence of parents. Because college students may bring their heavy debt and financial insecurity with them into adulthood, understanding financial well-being among college students can help educational loan providers, financial counselors, college administrator, and parents to better understand students' current and future financial challenges and needs (Leach, Hayhoe, & Turner, 1999). Few previous studies have examined the associations between early childhood consumer experiences, financial socialization, and financial well-being among college students. This study fills this research gap by testing a conceptual model of perceived financial well-being among college students in Malaysia. A better understanding of the financial development process from childhood through college life will, we hope, yield a better explanation and comprehension of the factors that influence students’ financial well-being.
Theoretical Framework

Social Learning Theory emphasizes the role of both cognitive and environmental influences in human development. This theory explains how individuals learn behavior. Bandura (1969) says that children learn by observing the behaviors of others and imitating and modeling their behavior. Authors in consumer-related fields have employed Social Learning Theory in their investigations to explain compulsive behavior (Valence, D’Astous, & Fourtier, 1988), financial behavior (Hira, 1997; Martin & Bush, 2000; Gutter, Garrison, & Copur, 2010), and children’s’ consumer socialization (Chan & McNeal, 2006). Consumer socialization draws heavily from Social Learning Theory to understand the development of consumer behavior. According to McNeal (1987) and Moschis (1987), socialization refers to the process by which individuals acquire the knowledge, skills, and value sets that enable them to become contributing members of groups and of society. Socialization begins in childhood and continues, to some extent, throughout one’s lifetime (Moschis, 1987; McNeal, 1987).

Previous research has identified parents, peers, printed media, television commercials, and in-school education as the most important agents of consumer socialization (Ward, 1974; Moschis & Churchill, 1978; Moschis, 1987; O’Guin & Farber, 1989). Personal and family background, academic ability, early childhood consumer experience, financial socialization, and financial knowledge may also influence a student’s perceived financial well-being. The predicted determinants of perceived financial well-being are illustrated in Figure 1. The model portrays direct effects between personal and family background variables (gender, ethnicity, type of college, student’s residence, and parent’s education) and perceived financial well-being. In addition, academic ability variables (grade point average
[GPA] and class rank), and childhood consumer variables (opened a savings account, received an allowance, and discussed finances with parents) are predicted to have direct effects on perceived financial well-being. Financial socialization and financial knowledge also are expected to have direct effects on financial well-being (Cude, Lawrence, Lyons, Metzger, LeJune, Marks, & Machtmes, 2006). Figure 1 also illustrates indirect effects from these variables.

Hypotheses

1. Students’ personal and family backgrounds have a significant direct effect on perceived financial well-being.

2. Those students with higher GPAs and with more years at university (related to academic ability) score higher on perceived financial well-being.

3. The influence of early childhood consumer experience on perceived financial well-being is mediated by financial socialization and financial knowledge.

4. Financial knowledge directly and positively impacts perceived financial well-being.

5. Parents have a greater influence than peers, school, religion, and media on college students’ financial knowledge.

6. The influence of financial socialization on perceived financial well-being is mediated by financial knowledge.

Literature Review

Researchers have reported that a number of variables appear to influence financial well-being or financial satisfaction. Among the most common are demographic and socioeconomic characteristics such as gender, ethnicity, age, income, education, and marital status (Hira & Mugenda, 1999a, 1999b; Leach, Hayhoe, & Turner, 1999; Joo & Grable,
For example, it has been suggested that financial well-being is positively related to age, income, and education. Research indicates that other variables such as financial behavior (Hira & Mugenda, 1999b, Joo & Grable, 2004), financial attitudes (Grable & Lytton, 1998), and financial knowledge (Joo & Grable, 2004; Shim et al., 2009) can also affect financial well-being. Recent studies on the financial well-being and satisfaction of college students found gender, age, ethnicity, and parental income (Xiao et al., 2009; Shim, Barber, Card, Xiao, & Serido, 2010) were all positively related to financial well-being or financial satisfaction.

Academic ability is defined as the degree of competence to perform scholastic or educational activities (http://www.education.com/, n.d). Prior studies suggest that students’ academic abilities have a positive impact on their life satisfaction and success (Chow, 2005). The most common indicators of academic ability (GPA and class rank) have been used to predict financial knowledge/literacy (Chen & Volpe, 1998, 2002; Xiao, Serido, & Shim, 2010; Sabri, MacDonald, Hira, & Masud, 2010) and financial satisfaction/well-being (Xiao et al., 2009; Shim et al., 2009).

**Early Childhood Consumer Experience**

The results for type and timing of early childhood consumer experience demonstrate that discussing family finances with parents is a positive influence on financial knowledge. Recently published research showed that involvement with important aspects of family finance improved knowledge and experience about money management among Malaysian college students (Sabri et al., 2010). The results confirmed previous findings which reported that the more parents talked about money matters with their children, the more knowledgeable the children felt about personal finance as college students (Shim et al.,
2009). Peng, Bartholomae, Fox, and Cravener (2007) examined the impact of personal financial education delivered in high school and college on students’ investment knowledge and savings rate. They found that if respondents held a bank account before age 18 they were more likely to have greater investment knowledge. Sabri et al. (2010) found that financial knowledge scores improved if respondents began a savings account between the ages of seven and 12 compared to those who did so after age 13 or had not yet opened a savings account. Another study by Kotlikoff and Bernheim (2001) found that individuals who had an allowance, bank account, or investment when they were children saved more of their income as adults.

**Financial Socialization**

Ward (1974) defined financial socialization as the “process by which young people acquire skills, knowledge, and attitudes relevant to their effective functioning as consumers in the marketplace” (p. 2). However, Danes (1994) gives a broader definition, as “the process of acquiring and developing values, attitudes, standards, norms, knowledge, and behaviors that contribute to the financial viability and well-being of the individual” (p. 128). Previous research has acknowledged that parents, peers, printed media, television commercials, and in-school education are the most important agents of consumer socialization (Moschis & Churchill, 1978; Moschis, 1987).

**Parents**

The most significant influence on children as they learn consumer behavior patterns is the parents (Caruana & Vasallo, 2003; Lachance & Legault, 2007; Hayta, 2008). Parents have been shown to be the primary source of financial information for
teens and college students (Pinto, Parente, & Mansfield, 2005; Lyons, Scherpf, & Roberts, 2006; Peng et al., 2007). Lyons et al. (2006) found that the majority of college students (76.7%) indicated that they had gone to their parents for financial information. Bowen (2002), in a study of financial knowledge of teens and their parents, found the way young people learn about financial matters is likely to be a combination of intentional and unintentional strategies by parents and other key adults in their lives. Furthermore, parents play a significant role in shaping a child’s financial habits and values (Pinto et al., 2005).

*Peers*

Peers become increasingly important during adolescence as children begin to wean themselves from parents and become independent beings. The influence of peer groups and friendships in childhood have long been known to be important in both emotional and cognitive development (Pressley & McCormick, 2007), but studies have also shown that peer groups contribute to effective learning about monetary values and social motivation (Moschis & Churchill, 1978; Hayta, 2008). Interaction with peers of course makes adolescents aware of fads and fashions that is, new goods and services in the marketplace and new buying patterns. This greater awareness of the consumer environment may in turn contribute to active peer interactions about consumption matters, forming a cyclical or pattern. Lachance and Legault (2007) found that normative (accepted by a reference group) and informative (source of information) peer influences were significantly related to students’ attitudes and behaviors towards consumption.
School

Children spend more time in school than they do with their parents, starting in preschool and continuing into their later school years (Hayta, 2008). School as a social institution by and large reflects the requirements and objectives of society and provides young people with necessary knowledge and skills in many areas including consumption. Teachers play as important a role as parents in shaping children’s consumption behaviors (Ozgen, 1995). Particularly during adolescence, children spend more time at school with teachers and friends than they do with family. According to Varcoe, Petersen, Gabertt, Martin, and Costello (2001), information provided at school regarding economics has an important effect on the child in terms of acquiring and shaping skills, and behaviors related to consumption.

Mass Media

Mass media such as television, radio, newspaper, and the Internet -- plays an important role in the socialization of adolescents (Koonce et al., 2008; Varcoe, Peterson, Swanson, & Johns, 2010) and adults as consumers (Hayta, 2008). Lachance and Legault (2007) revealed that media (television, Internet, magazines, and newspapers) were the second most important socialization influence on college students’ attitudes towards consumption (defined as credit, advertising, and commercial practices). Koonce et al. (2008) confirmed that students learned a “good amount” or “a lot” from the media, which included television, radio, newspapers, and magazines (18.1%), and the Internet (13.5%).
Religion

Although not yet identified as one of the most important agents of consumer socialization in current research, religion probably should be included, at least in some cultures. According to Shweder (1991), religion is one of the most universal and influential social institutions and has a significant influence on people’s attitudes, values, and behaviors at both the individual and societal levels. Religious values and beliefs are known to affect ritualistic and symbolic human behavior (Mokhlis, 2009). Bailey and Sood (1993) examined the effects of religious affiliation on consumer behavior and found variations in consumerism among different religious groups. For example, Catholics were less likely to be informed shoppers, Hindus were likely to be rational shoppers, and Muslims were least likely to be risky shoppers. There is considerable literature focused on culture and its influence on various aspects of consumer behavior (Mokhlis, 2009). However, little research has examined the effect of religion specifically on financial behavior, financial knowledge, or financial well-being. Religion and its associated practices often play a pivotal role in influencing how individuals cope with important life transitions. This study hopes to fill this research gap by examining the effect of religion on the financial knowledge and financial well-being of college students.

Financial Knowledge

Financial illiteracy is a growing problem. A review of the literature on financial literacy, also referred to as financial knowledge, suggests that a majority of college students lack sufficient knowledge to effectively manage their personal finances (Chen & Volpe, 1998; Avard, Manton, English, & Walker, 2005; Murphy, 2005; Norvilitis et al., 2006). Most
previous and current studies tried to establish a relationship between financial knowledge and financial behavior (Chen & Volpe, 1998; Hilgert, Hogarth, & Beverly, 2003; Cude et al., 2006; Robb & Sharpe, 2009). However, there is little previous or current research that links financial knowledge and financial well-being among college students, and the extent to which financial knowledge (or literacy) affects financial well-being has had very limited attention. Shim et al. (2009) were the first to try to establish a link between financial knowledge and financial well-being among college students. Financial well-being in their study was defined as satisfaction with one's current financial status, including the level of debt. Shim et al. did not find a significant relationship between these two variables. Joo and Grable (2004) investigated the determinants of financial satisfaction (rather than financial well-being) among white-collar clerical workers. They defined financial satisfaction as a person’s satisfaction with his or her current financial situation. Results indicated that financial knowledge had both a direct and an indirect effect on financial satisfaction. The limited research on this topic and the mixed results make it difficult to draw conclusions about the relationship between financial knowledge and financial well-being or financial satisfaction.

Financial Well-Being

Financial well-being is defined as “a state of being financially healthy, happy, and free from worry” and is typically based on a subjective appraisal of one’s financial situation (Joo, 2008, p.22). Financial well-being has often been measured by overall satisfaction with one’s financial situation (Van Praag, Frijters, & Ferer-i-Carbonell, 2003). Malone, Stewart, Wilson, & Korschning (2010) posited four domains of financial well-being: buying behaviors,
perception of current finances, perception of the financial future, and attitudes toward long-term care insurance. According to Joo (2008), overall satisfaction with one’s financial situation is often used as a measure of financial well-being. Few examinations of the determinants of financial well-being have incorporated objective, subjective, and behavioral measures into a single empirical test of individual financial satisfaction (Joo & Grable, 2004). Furthermore, most previous studies on financial well-being have been conducted among adults or employees; few studies involved college students (Van Pragg et al., 2003; Joo & Grable, 2004; Joo, 2008; Malone, et al., 2010). To date, no definitive measure of college students’ financial well-being has been advanced. For example, Shim et al. (2009) used both objective (amount of debt) and subjective (financial satisfaction and coping with financial strain) measures in assessing financial well-being. Leach, Hayhoe, and Turner (1999) measured students’ perceived economic well-being by asking them to describe how they felt about their level of income, debt and savings, ability to handle financial emergencies, and amount of money available for necessities and future needs (subjective measures).

In conclusion, the literature supports the idea that college students lack sufficient knowledge in personal finance and that financial behaviors are established at an early age. These financial habits carry on to adulthood and can cause life-long financial difficulties absent effective educational intervention. The mechanism by which financial well-being among college students is achieved is not clear. In order to identify potential strategies, additional research is needed to examine systematically the extent to which personal and family background, academic ability, early childhood consumer experience, financial socialization, and financial knowledge affect students’ financial well-being. An important
goal of this study is to increase understanding about the role of parents, peers, media, school, and religion on financial knowledge and financial well-being among college students. This study also offers specific cultural insights that allow comparisons between Malaysian college students and U.S. college students. To date there have been few studies of college students’ financial experiences, knowledge, and well-being outside of the U.S.

Methods

Procedure

This study of financial knowledge, attitudes, and practices was conducted in 2005-2006 among college students in Malaysia. The study sample is comprised of students in public and private colleges. Eleven colleges were selected for the study using a multi-stage sampling technique (six public and five private colleges). For the first stage, a list of all public and private colleges was obtained, from which five public and five private colleges were selected at random. In addition to the ten randomly selected colleges, University Putra Malaysia was included in the study to assist the researchers in planning educational programs. At each college, 350 students were selected randomly using a list of names obtained from the student affairs office. The number of questionnaires distributed to the 11 colleges was 3,850. A total of 2,519 questionnaires were completed and usable producing a 65% response rate. The average response rate for the six public colleges was 72.8% and 56.6% for the five private colleges. The response rates for public colleges ranged from 46.3% to 95.1%. The private colleges’ response rates ranged from 13.1% to 83.4%. Thus, although there is variation in response rates across colleges, the overall response rate seems adequate to represent the population of interest.
Students were given two weeks to complete the self-administered survey and return it to their faculty. Prior to the study, students were informed that participation was voluntary and that they were free to skip questions or withdraw from the study if they were uncomfortable answering. The survey was written in the Malay language and had twelve sections: Section A: Student Characteristics, Section B: Family Characteristics, Section C: Early Childhood Consumer Experience, Section D: Sources of Money/Income, Section E: Spending Pattern, Section F: Financial Behaviors, Section G: Financial Literacy/Knowledge, Section H: Attitudes towards Money, Section I: Financial Experience, Section J: Financial Socialization, Section K: Perceived Financial Well-Being, and Section L: Self Skills. Those students who completed and returned the survey were given a book on “College Students’ Financial Planning” as a token of appreciation. For the purpose of the current study, only data from seven of the 12 sections were analyzed and reported: A, B, C, G, I, J, and K Sample

According to national statistics (Malaysian Ninth Plan, 2006a) the Malaysian population consists of Malay (65.9%), Chinese (25.3%), Indian (7.5%), and others (1.3%). Similarly, the study sample has a majority of Malay students (75.6%) and about one in four were Chinese (24.4%). The sample for this study consisted of 59.1% female and 40.9% male students. Respondents were on average 20.9 years old (standard deviation of 2.99). More than half of the respondents (51.7%) were from a rural area. The sample consists of somewhat more students attending public than private colleges (60.9%). A majority of students lived on campus (72.5%). Sophomores accounted for 32.4%, 29.4% freshmen, 26.5% juniors, and 11.7% seniors. The sample average grade point average (GPA) is 3.00 on a 4.00 scale. A majority of students reported a 2.50-2.99 GPA range (72.4%). More than half
of the students in the sample reported they are not employed (59%) and nearly all of them are single (98.4%). The students report that more than two-third of their fathers (78.5%) have a secondary education (i.e. high school), or better; 28.8% of fathers are college educated. Fifty-five percent of students report that their parents are married and living together, 21% of parents are divorced, and 12% of students had a parent who is a widow or widower. Table 1 shows the demographic data.

In the present study, all the observations were eliminated for any of the variables used in the structural equation model that had missing data. This strategy for handling missing data was established to ensure a rectangular dataset in which there were no instances of missing data. Doing so makes it possible for AMOS software to estimate modification index values that indicate the extent to which additional model components would reduce the lack of fit between the sample covariance matrix and the reproduced covariance matrix in the model. Results of the chi-square goodness of fit tests, comparing the proportions of omitted and non-omitted observations for the categorical variables included in the model, show that there were no significant differences. Therefore, it is reasonable and valid to generalize from model results for the non-omitted data. For example, 44.4% of students not included in the model were male, compared to 39.9% of observations included in the model ($\chi^2 (1, N=2,199) = 3.10, p = .08$). Also, 29.2% of students not included in the model lived on-campus, compared to 27.0% of those included in the model ($\chi^2 (1, N=2,185) = .88, p = .35$).

Measures

Personal and family background.

Personal and family background variables included gender, ethnicity, place of origin, student residence, type of college, and father’s education level. Gender information was
obtained from a single question asking students to identify themselves as female (1) or male (0). Chinese ethnicity was coded as 1 and Malay ethnicity, as the reference group, was coded as 0. Place of origin was coded 1 for those who were from an urban and 0 for those from rural area. Students who lived on campus were coded as 1; 0 for those who stayed off-campus. Type of college was coded 1 for those from public colleges and 0 for private colleges. Respondents were asked their father’s highest education level; responses were coded as no formal education (0), elementary (1), secondary (2), college degree (3), and graduate education (4).

*Academic Ability.*

Academic ability consists of two variables; student academic achievement (GPA) and class rank. Self-reported (continuous) GPA was used to measure academic success. The number of a student’s semesters in college was used to measure class rank.

*Early Childhood Consumer Experience.*

Respondents were asked at what age they became involved in financial activities, which included a) having their own saving account, b) receiving an allowance, and c) discussing financial matters with parents. This early childhood consumer experience measure was based on an instrument developed by Danes (1994). Response categories about when each of these financially-related activities began were coded: never (0), less than 7 years to 12 years (1), and greater than 13 years (2). Responses to these financially-related activities were then recoded into two categories: never (0) and yes (1). Those who reported they began these activities either less than 7 years ago, 7 to 12 years ago, or greater than 13 years ago were combined to represent the “experienced” childhood consumer, coded as 1. Only those
who said they had never had a savings account, an allowance or financial discussions with parents were coded as 0.

*Financial Socialization.*

Financial socialization was measured by asking students to indicate how much socialization agents (i.e. parents, peers, school, media, and religion) influenced the way they learned about and how they behave with money management while at college (current life). A single item was used for each of these socialization agents. Responses were made on a nine point scale (0=no influence to 9= very much influence). For example, “Based on a scale from zero (no influence) to nine (very much influence), how much do parents influence your personal finances and money management while you are in college?”

*Financial Knowledge.*

Financial knowledge was measured by testing for correct answers on 25 questions concerning financial goals, financial records, savings, investments, retirement, banking systems, time value of money, wills, insurance, education loans, and general knowledge of personal finance. The financial knowledge test (instrument) was developed primarily for Malaysian college students in two stages. First, it was developed based on an extensive review of literature (e.g., Chen & Volpe, 1998, 2002). Second, to test for face and content validity of the developed instrument, researchers received input from experts and practitioners in the personal and family finance area, including Central Bank Malaysia, Malaysian Banking Institute, Federation of Malaysian Unit Trust Manager, Malaysian Security Commission, Financial Planning Association of Malaysia, Malaysian Insurance Institute, Employment Provident Fund Social Security Training Institute, Selangor Education Foundation, National Higher Education Fund Corporation, and Hijrah Strategic Advisory
Group. The financial knowledge index possessed adequate internal consistency ($\alpha = 0.70$). The average score among respondents was 11.77, with a standard deviation of 3.66 suggesting that less than half of the questions were answered correctly.

**Perceived Financial Well-Being.**

Perceived financial well-being was measured using three items adapted from Hira and Mugenda’s measure of financial satisfaction (1999a, 1999b): money saved, current financial situation, and financial management skills. Each item was measured by asking the respondents to indicate their level of satisfaction on a nine point scale (0 = completely dissatisfied to 9 = completely satisfied). For example, one question was “Based on a scale from zero (completely dissatisfied) to nine (completely satisfied), please indicate your satisfaction with your current financial situation.” Exploratory factor analysis in SPSS was used to verify which items might load together. The indicators of perceived financial well-being loaded on single factor. The indicators of perceived financial well-being in the exploratory factor analysis included money saved, current financial situation, amount of money owed, preparedness to meet emergencies, financial management skills, and ability to meet long-term goals. The Kaiser-Meyer-Olkin measure of sampling adequacy was .87, indicating that the present data were suitable for principal component analysis. Similarly, Bartlett’s test of sphericity was significant ($p < .001$). Only three out of six items (money saved, current financial situation, and financial management skills) with the higher value of communalities were chosen as manifest (observed) variables and these variables served as indicators of the underlying construct (perceived financial well-being). Communalities were high for each of the three items, ranging from .73 to .85. The alpha reliability for perceived financial well-being indicators (three items) was .80.
Results

Correlations among Observed Variables

Table 2 presents the zero order correlations among observed variables. The results were consistent with many of the associations predicted in the conceptual model. For example, financial knowledge was significantly correlated with money saved \((r = .07)\), current financial situation \((r = .06)\), and financial management skills \((r = .09)\). The highest correlations were found between items that were used to indicate the same latent variable (perceived financial well-being). For example, there was a stronger correlation between the money saved and current financial situation \((r = .72)\). Taken together, the pattern and strength of the correlations among the observed variables provide a good basis for conducting additional tests related to the theoretical model.

Structural Model Testing

Statistical testing of the initially proposed structural model yielded the following indicators of the overall model: \(\chi^2 (43) = 742.140, p < 0.001, \text{CFI} = .824; \text{IFI} = .826; \text{RMSEA} = .086\) suggesting that the model could be improved. During data analyses, the modification indices pointed to adding the path between parents’ residual and religion’s residual. It is reasonable to expect this relationship because parents and religion may have significant influence on each other. Among other things for example, parents use religion to teach values and exert social control. Myers (1996) found parental religiosity to be the strongest influence on the religiosity of their children. Smith, Faris, and Lundquist (2003) also reported that parental religiosity has a significant impact on their adolescent’s religious attachment. Such findings suggest a relationship between parental religiosity and adolescent religiosity.
After adding this path, the fit of the adjusted model was better and deemed an acceptable fit ($\chi^2_{(42)} = 135.506, p < 0.001, \text{CFI} = .972; \text{IFI} = .972; \text{RMSEA} = .036$).

Compared to the initial model, the overall fit of the adjusted model was improved as indicated by a significant reduction in Chi-Square ($\Delta \chi^2 = 608.634, \Delta df = 1, p < 0.001$). Consequently, this version was accepted as the final model. There are two significant paths in the initial model (i.e., gender--religion; GPA--parents) that become insignificant in the final model: religion was not a significant predictor of financial socialization for male or female students, and parents were not significant in the financial socialization of students’ with lower or higher academic achievement. The results also indicated that one path, insignificant in the initial model, became significant in the final model (i.e., savings--perceived financial well-being).

The paths that were significant in predicting the influence of religion on financial socialization were ethnicity and students’ residence. The negative and larger coefficient for ethnicity indicates that Chinese students ($\beta = -.28$) were less likely to report having gained financial knowledge from religious sources. However, students who lived on campus were more likely to report having learned financial knowledge from religious sources than students who lived off campus. Ethnicity was found to be positive and significant in predicting parental influence on financial socialization. The results suggest that parents were a more significant source of financial information among Chinese students compared to their Malay counterparts.

Ethnicity and GPA were significant in predicting the influence of peers on financial socialization. The negative coefficient for Chinese ethnicity indicated that they were less likely to learn financial knowledge from peers compared to Malay respondents. Since
Chinese students were more likely to learn financial knowledge from their parents, perhaps this explains why they learned less from peers compared to their Malay counterparts. It seems that when it comes to financial matters, Chinese students were more likely to learn from their parents than friends. Those students who had greater academic achievement (higher GPAs) were more likely to have gained financial knowledge from peers than students with lower GPAs.

Ethnicity and students’ residence were linked directly and negatively to financial knowledge (β = -.17 for Chinese and β = -.08 for on campus). The results indicated that Chinese students and those students who stayed on campus were less knowledgeable about personal finance. Chinese ethnicity had twice the effect of students’ residence on financial knowledge. However, none of the financial socialization agents had direct effects on financial knowledge.

The paths in the model that are significant in predicting perceived financial well-being are financial knowledge, parents, religion, savings, gender, ethnicity, place of origin, and students’ residence. The direct effect of financial knowledge (β = .08) on perceived financial well-being suggests that those students who had greater knowledge in personal finance were more likely to report satisfaction with their perceived financial well-being. The significant positive relationship between parent and religion as socialization agents suggest that the more students learned about finances (financial knowledge) from their parents and from religious sources, the more likely students were to report they were satisfied with their perceived financial well-being. The influence of religion (β = .13) suggests that religion could be a more important source of learning about personal finance than parents (β = .08). Those who had savings accounts as children were more satisfied with their current perceived
financial well-being compared to those who did not have that early experience. The results also indicate that having earlier experience in managing money could result in higher current perceived financial well-being. Among the significant personal and family background variables, students’ residence had the strongest and largest effect on perceived financial well-being ($\beta = .12$) compared to ethnicity ($\beta = .03$). The results suggest that on-campus students tended to report they were more satisfied with their perceived financial well-being compared to off-campus students. Other significant paths revealed that being a female, of Chinese ethnicity, and a student from the city positively affected perceived financial well-being.

**Discussion**

The most revealing findings of our study are that those students of Chinese ethnicity had a unique process of financial socialization as compared to those of Malay ethnicity. For example, students of Chinese ethnicity reported that their parents were more influential than peers or religion as financial socialization agents, regardless of the fact that previous research showed Chinese students (secondary school) were less likely to interact with their parents and peers compared to their counterparts (Kamaruddin & Mokhlis, 2003). One possible explanation is that most of the Chinese students come from financially well-off families and study at private colleges. Thus, they are more dependent on their parents for financial support and information. The results also imply that peers become a significant source of financial information among those students who have better academic records. There is no obvious reason to explain this relationship. It might be that these students spent most of their time with friends compared to other socialization agents; consequently, their peers become a more important source of help with financial decision making. Xiao, Shim, Barber, and Lyons
(2007) suggested that college peers may play an important role in students’ financial practices. They found that students were more likely to engage in positive financial practices (e.g., cash management, credit management, and saving behavior) if the behaviors were approved by their peers.

The results of this investigation shed light on the influence of students’ residence and ethnicity on financial knowledge. It is apparent that Chinese students had a low level of financial knowledge compared to their Malay counterparts. The result was unexpected because previous studies have shown that Chinese students have higher mathematical achievement (Ismail & Awang, 2008) and that they know more about educational loans (Abu Bakar, Masud, & Md. Jusoh, 2006). On the other hand, those students who lived on-campus had less financial knowledge than those who lived off-campus. One possible explanation is that on-campus students have less financial responsibilities and liabilities compared to those who live off-campus.

It appears that gender, ethnicity, students’ residence, and place of origin were associated with students’ perceived financial well-being. Our findings show that female students were more likely to report satisfaction with their perceived financial well-being. Perhaps different socialization or personal expectations regarding money saved, current financial situation, and financial management skills explain the differences between male and female students in their reports of perceived financial well-being. Gender differences in attitudes about money may occur because parents socialize sons and daughters differently (Edwards, Allen, & Hayhoe, 2007). Edwards et al. (2007) indicated that daughters were more open with their parents about their spending behaviors, more dependent on their parents for support, and more likely to talk with parents about their own financial situation. They
suggested that parents may socialize daughters to be more dependent in two ways: (1) parents may provide more real financial support to daughters than sons and (2) parents may provide social support by listening to daughters who are more open with them about their financial situation, compared to sons. Past research supports the theory that the differences between college men and women in perceived economic well-being may be due to gender role socialization (Leach, Hayhoe, & Turner, 1999).

Chinese students were more likely to report feeling good about their perceived financial well-being compared to Malay students. One possible explanation is that most Chinese students were children of fairly well-off parents. Census data confirm that the mean monthly gross household income of Chinese Malaysians ($1,387) is slightly higher than Indian ($1,080), and Bumiputera including Malays ($847) (Malaysian Ninth Plan, 2006b). Lai, Chong, Sia, and Ooi (2010) examined culture and consumer behaviors of Malays and Chinese students in Malaysia using Hofstede’s Cultural Dimension Index. Their findings revealed that Chinese students were more concerned with social status and personal well-being than were their Malay counterparts. Perhaps this explains why Chinese students tended to report they were satisfied with current perceived financial well-being in this investigation.

College students who lived on-campus were more satisfied with their perceived financial well-being then their off-campus counterparts. It is reasonable to suggest that this is because on-campus students probably have fewer financial responsibilities and liabilities than students living off-campus. For example, the costs associated with on-campus living (rent and utilities) are typically deducted from students’ educational loans or scholarships whereas students living off-campus pay rent and utilities each month. A prior study by Masud, Abdul Rahim, Paim, and Britt (2004) found that students living off-campus spent more money on
living expenses such as rent, utilities, and gas compared to students on campus. The study also found that a higher percentage of students who live off campus reported experiencing greater financial problems compared to on-campus students.

Those students who come to college from the city also reported they were more satisfied with their perceived financial well-being than those students from rural areas. One possible explanation could be that those students are from families that are more financially well-off. Well-off parents may provide their children with more financial support compared to less well-off parents. Past research shows that individual well-being is interdependent within a family; well-being reported by children, for example, is strongly correlated with parents’ well-being (Winkelman, 2005).

Contrary to our initial expectation, GPA and class rank had no direct effect on students’ perceived financial well-being. This fits with the current literature, which has shown that GPA and class rank were not significant predictors of college students’ financial well-being (Shim et al., 2009; Xiao et al., 2009). The results suggest that one’s academic ability does not necessarily determine satisfaction with one’s financial situation. Other factors such as behavioral/cognitive biases, level of self-control, and financial socialization influences (e.g., peer, family, economic, community, and institutional) also can affect financial behaviors and financial well-being (Huston, 2010).

The influence of early childhood consumer experience on perceived financial well-being is not mediated by financial socialization and financial knowledge. As shown in Figure 2, there is no direct effect of savings on either financial socialization (parents, peers, and religion) or financial knowledge. However, savings did positively and significantly impact college students’ perceived financial well-being (direct effect). In this study, there is
evidence that experiences in managing money at a young age contributes to perceived financial well-being later in life. The results suggest that students’ should start getting involved in financial activities early, and the earlier the better. This fits with the literature, which has shown that having financial experiences such as bank accounts and investment accounts had a positive effect on saving behavior (Kotlikoff & Bernheim, 2001). High school students with more financial experiences had higher savings rates than those with less experience (Peng et al., 2007).

Religion and parents were significant financial socialization agents for college students. Religion was a very important source of financial information or financial knowledge for college students. The present study adds credence to the notion that financial well-being can be improved or increased through social institutions such as churches. This is consistent with Shweder’s (1991) assertion that religion is one of the most universal and influential social institutions and that it exerts a significant influence on people’s attitudes, values, and behaviors at both individual and societal levels. Perhaps religious background conveys values, beliefs, and faith about money. In other words, how a person reacts with his or her money in a given situation often is fundamentally tied to whether or not he or she is actively following religious practices. Therefore, it follows that religious beliefs will significantly impact how people handle their finances.

Consistent with previous studies, our results also revealed that parents are a significant source of financial information for college students (Pinto et al., 2005; Lyons et al., 2006; Peng et al., 2007). The results suggest that students who learned about family finance from their parents improved and increased their satisfaction with money saved, current financial situation, and financial management skills. Equally important is the finding
that financial socialization agents such as religion and parents specifically had direct effects on perceived financial well-being; financial socialization did not mediate this impact. In other words, these financial socialization agents have their own unique direct influence.

Similar to past research, we found that financial knowledge significantly influenced students’ perceived financial well-being. For example, Joo and Grable (2004) indicated that financial knowledge had a direct effect on financial satisfaction. Other studies by O’Neill, Xiao, Bristow, Brennan, and Kerbel (2000) also noted that if consumers receive education in basic personal finance they may be in a better position to manage their finances, thereby resulting in improved financial satisfaction. Our results suggest that more knowledge of personal finances among students results in greater satisfaction with money saved, current financial situation, and financial management skills.

There is no evidence that the influence of financial socialization on perceived financial well-being is mediated by financial knowledge. None of the financial socialization agents (parents, media, peers, school, and religion) had a direct effect on financial knowledge. The results were unexpected because previous studies have shown that children or students learned financial knowledge from at least their parents (Pinto et al., 2005; Lyons et al., 2006; Peng et al., 2007) even when no other agents were identified. In this study, only parents and religion had direct effects on perceived financial well-being; financial knowledge also had a significant impact on financial well-being. The results suggest that the influence of financial socialization on financial well-being was not dependent on students’ knowledge of personal finance. The independent and unique influence of each socialization agent could explain why there was no mediation effect detected.
Limitations

This study was not without its limitation and these need to be considered when interpreting the results. First, for all constructs, we relied exclusively on students’ self-report, so the associations we have found might be in part due to a shared reporter variance. For this reason, future research should use multiple informants such as parents to achieve a better understanding of students’ financial backgrounds. Parents could provide insights into the process by which they passed on knowledge and skills regarding financial issues during their child’s early years. Second, this study relied on one item to assess the influence of socialization agents (parents, peers, school, media, and religion) on college students’ financial awareness. While the question was similar to items used in other research, it is nonetheless important that more complete assessments be developed and used in future studies to tease out the influences of various socialization agents separately. For example, how frequently students discussed or observed their parents involved in money management activities would be an interesting topic. Third, we cannot confirm causal relationships among the variables because this study was based on cross-sectional data, not longitudinal data. We consider this study to be explanatory in nature. Furthermore, there may be unobservable factors not specified in our model, which account for some of the moderation effects. Fourth, we assessed perceived financial well-being by using a subjective measure of the level of students’ well-being. This cannot capture the complete or actual financial well-being of students. Objective measures of financial well-being do exist; thus, future study should include both objective and subjective measures such as sources of income, amount of income, and students’ debt to determine college students’ actual financial well-being. Finally, the explanatory power of the model was quite low. However, the model fits rather well by
most standard SEM, and high R-squared values might happen in different models. The present study tested specific theoretical propositions and thus was not motivated to find the model with the highest value of R-squared but rather was estimating a model to test the theory.

Conclusion and Implications

This study explored the determinants of perceived financial well-being among college students. The study was based on data from a survey collected during 2005-2006 from eleven public and private universities across Malaysia to explore these relationships. Structural equation modeling was used to test hypotheses and validate an empirical model. The results of this study suggest several important conclusions.

First, it is apparent that positive early childhood consumer experiences improve college students’ perceived financial well-being. This should create awareness among parents, family, and students themselves about the importance of practicing good financial habits at home; specifically, at the appropriate age when children are ready to learn about money related activities. Second, financial knowledge can be increased through social institutions such as mosques and churches. Nowadays financial education can be accessed easily through online (website) sources, as well as through printed materials such as magazine, books, and flyers. Students should be encouraged by parents, teachers, and university instructors to learn about money management and practice good financial behavior in their daily lives. Providing basic knowledge on personal finance to school-aged children through the school systems would seem to be an effective approach to educating students to become responsible and prudent consumers. Third, the most revealing results of this study and those most consistent with previous studies are that perceived financial well-being can be
increased through financial knowledge. In other words, to ensure financial well-being, financial education should be made available to all school aged-children, college students, and parents.

These findings have implications for parents, university administrators, financial counselors, financial planners, educators, and students themselves. These findings could be used to develop financial education programs that would provide students with the knowledge and skills to better manage their finances and improve their financial well-being. Past research confirms that financial education is the best single method available for practitioners, educators, and policy makers to improve financial satisfaction and overall consumer well-being of individuals and families (Berheim, Garrett, & Maki, 1997; Joo & Grable, 2000). Parents should begin discussing sound money-management practices with their children at a young age, continue it through adolescence, and reinforce with them that financial education is a life-long pursuit.

It is clear from the results that perceived financial well-being differs by gender and ethnicity. This is important information for financial counselors and planners. Understanding these differences will help practitioners tailor advice and planning to the different needs of males and females, Chinese and Malay college students. Educators and university administrators should make sure that financial educational programs not only improve financial knowledge and promote responsible financial behaviors among college students, but also establish support structures that will help students increase their financial well-being.
References


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Figure 1. The Proposed Conceptual Framework
Figure 2. The Student Perceived Financial Well-Being Model: The Final Structure Equation Model (Standardized Estimates)

\[ \chi^2(42) = 135.506 \text{ (p= .000)} \]
NFI= .960
IFI= .972
CFI= .972
RMSEA = .036
Table 1. Sample Characteristics

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<th>Characteristic</th>
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$\chi^2_{(42)} = 135.506 (p=.000)$  
NFI=.960  
IFI=.972  
CFI=.972  
RMSEA = .036
CHAPTER 4: OVERALL SUMMARY

General Discussion

Two research articles were prepared and presented in this dissertation. In addition, the introductory chapter examined current research in the field of financial literacy and financial well-being, highlighting definitions and measurement of important concepts such as financial literacy, financial knowledge, financial wellness, financial well-being, and financial satisfaction. Standardized measures are emerging but have not yet been accepted in the field. Terms are often used interchangeably in the literature; e.g. financial literacy and financial knowledge; financial wellness, financial satisfaction, and financial well-being. Two articles were prepared, based on research undertaken to specifically investigate the financial literacy and perceived financial well-being of college students. The research contributes to existing literature by focusing on cultural elements such as the effects of ethnicity and religion, as well as the effects of early childhood consumer experience on financial literacy and perceived financial well-being.

The first article reports the results of data analysis investigating the impact of personal and family backgrounds, academic ability, and childhood consumer experience on financial literacy among college students. Ethnicity, students’ residence, and type of college were found to be significantly associated with financial literacy. Surprisingly, financial literacy among Chinese college students was lower compared to their Malay and Indian counterparts and others. Although previous findings have shown that Chinese students are better in mathematic achievement (Ismail & Awang, 2008) and also have greater knowledge about educational loans (Abu Bakar, Masud, & Md. Jusoh, 2006), the findings of this study
show that Chinese students’ financial literacy (knowledge) was poorer than that of Malay students. College students who lived off-campus tended to have greater financial knowledge and public college students had greater financial literacy than private college students. In addition, neither of the academic ability variables (GPA and class rank) were found to significantly contribute to greater financial literacy among college students. Finally, childhood consumer experience variables positively influenced financial literacy. The findings suggest that children’s early involvement with personal and family finance results in better knowledge about money management in later life.

The second article tests a conceptual model of college students’ perceived financial well-being using structural equation modeling (SEM). Relationships between personal and family backgrounds, academic ability, and financial knowledge and perceived financial well-being were tested as was whether financial knowledge mediated the influence of financial socialization on perceived financial well-being. Analysis showed that female students, students of Chinese ethnicity, those students who lived on-campus, and students from urban communities were more satisfied with their perceived financial well-being than their counterparts. Contrary to initial expectations, neither of the academic ability variables (GPA and class rank) had direct effects on perceived financial well-being. Also, the effect of early childhood consumer experience on perceived financial well-being was not mediated by financial socialization and financial knowledge. However, savings (one of the early childhood consumer variables) was found to have a direct effect on perceived financial well-being. As expected, financial knowledge significantly and positively impacted students’ perceived financial well-being. Unexpectedly, none of the financial socialization agents (parents, media, peers, school, or religion) had any direct effects on financial knowledge.
Findings also showed no mediation effect of financial knowledge on the influence of financial socialization on perceived financial well-being.

In summary, findings from both articles revealed that students of Chinese ethnicity and college students who lived on-campus have less financial knowledge. Childhood consumer experiences, such as having a savings account increased college students’ financial literacy and perceived financial well-being. Discussing finances with parents was a positive influence on financial literacy and both parents and religion were significant financial socialization agents for college students.

Limitations

There are several limitations that should be kept in mind when interpreting the results of this investigation. First, the financial literacy instrument was developed primarily for Malaysian students, which makes it difficult to compare the results directly to tests of financial knowledge undertaken with non-Malaysian students. Second, self-report variables such as the childhood consumer experience variables in the present study (owned a savings account, received an allowance, and discussed finances with parents), may be unreliable since accuracy is dependent on the respondent’s memory. Future investigations could improve the specification of two other variables: financial socialization agents and financial well-being. The measurement of financial socialization agents was based on a single item (e.g., “Based on a scale from zero (no influence) to nine (very much influence), how much do peers influence your personal finances and money management while you are in college?”). The measure cannot, therefore, capture the full extent to which financial socialization agents influence young adults’ financial literacy and perceived financial well-being. Financial well-
being of college students also was measured based on subjective rather than objective measures of well-being. Another concern is that the explanatory power of the financial literacy regression model in the first article was quite low ($R^2 = .04$), as was the measure of perceived financial well-being in the second article ($R^2 = .06$). Arguably, however, the models were well fitted to the data and the low explanatory power was perhaps due to the exploratory nature of the investigations. Finally, as with all research, there may be unobservable factors not specified in the model that account for some direct or mediating associations not measured in these studies.

**Education Implications**

The first article provides evidence that financial illiteracy is a problem among college students. The results demonstrated that financial illiteracy among college students in Malaysia is concentrated among Chinese students, those who live on campus, and students at private colleges. These results may help to identify student population subgroups that would benefit the most from financial education programs. Thus, college administrators and faculty leaders (at both public and private colleges) should consider how to monitor and improve financial knowledge for their students.

The results may also be beneficial to financial counselors who work with students on a one-to-one basis to help them acquire money management knowledge and skills. It is clear from the results in the second article that perceived financial well-being differs by gender and ethnicity. This also is important information for financial counselors and planners. Understanding these differences will help practitioners tailor their advice and plan for the different needs of males and females as well as based on ethnic differences, such as between
Chinese and Malay college students in Malaysia. Taken together, the findings should be used to develop financial education programs that would provide students with the knowledge and skills to better manage their finances and improve their financial well-being.

Both studies revealed that early childhood consumer experiences such as having a savings account (first and second article) and discussing finances with parents (first article) have significant and positive effects on students’ financial literacy (knowledge) and perceived financial well-being. The results indicate that parents who involve their children at an early age in family financial activities improve the likelihood that they will later make good financial decisions on their own. It is recommended that parents model and cultivate positive financial behaviors and provide or encourage financial education at home. Parents should begin discussing sound money-management practices with their children at a young age, continue the discussions as they grow, and reinforce the idea that financial education is a life-long process.

There is evidence from the current study that parents are important financial socialization agents. Providing parents themselves with additional financial education would enhance their knowledge and skills, and help them understand how to involve their children in family financial decision-making. Previous studies indicate that parents are not always well prepared to be financial education mentors due to their own lack of financial knowledge (Danes, Huddleston-Casas, & Boyce, 1999; Beverly & Clancy, 2001). Educating parents about personal finance means they are armed with the knowledge and skills needed to educate their children. This preparation may lead to greater financial knowledge and more effective financial management practices for the next generation of children as well as for their parents (Danes et al., 1999). According to Shim, Barber, Card, Xiao, and Serido (2010),
parents tend to demonstrate positive financial behaviors and encourage financial education at home if they have a better understanding of how financial literacy contributes to children’s success in later life. Financial education can also be provided through social institutions such as mosques and churches; offering their congregation financial counseling and organizing seminars and workshops related to money management topics would be worthwhile endeavors.

The current study revealed that peers become a significant source of financial information among those students who have better academic achievement. Some evidence suggests that peers also influence the financial practices of college students (Xiao, Shim, Barber, & Lyons, 2007). Peer financial education for example can encourage college students to discuss financial matters with each other and this could help develop positive financial habits. Universities might consider initiating peer mentoring programs on personal finance. Financial educators should work with college and university administrators to support making financial education course accessible and available to all students. Together, financial educators and university administrators could help providing appropriate materials or curriculum for parents and their children and encouraging both groups to develop positive financial behaviors that will ensure current and future financial well-being. To make financial education more effective and beneficial, financial educators need to develop programs to engage parents and their children. Educators need to encourage parents to discuss finances with their children and get them involved in family financially related decisions and activities. These could include, for example, anything from a simple activity such as eating out in a restaurant, to a complex activity such as planning for a vacation or buying a house or car.
Future Research

These studies were based on cross-sectional data and each can be considered exploratory in nature. In order to develop education programs that positively impact all college students, longitudinal data must be collected to better understand the cause and effect of financial literacy and financial well-being. Past research has shown that there is a link between financial knowledge and financial behavior (Chen & Volpe, 1998; Hilgert, Hogarth, & Beverly, 2003; Robb & Sharpe, 2009); and financial attitudes, financial behaviors, and financial well-being (Shim, Xiao, Barber, & Lyons, 2009; Xiao, Tang, & Shim, 2009; Shim et al., 2010). Future studies should include measures of financial attitudes and financial behaviors to better understand college students’ financial literacy and financial well-being. In the studies completed for this dissertation, data contained only students’ self-reports of early childhood consumer experiences and financial socialization agents; and the associations found might be in part due to shared reporter variance. Future research should use multiple informants such as parents, siblings, and teachers. The current study relied on a single item to assess the influence of each financial socialization agent, but the importance of financial socialization suggested that children learn about personal finance from within the family and from outside of the family. More complete assessments therefore need to be developed and used in future studies to fully understand the financial socialization of college students. Future studies also could use both objective and subjective measures of financial well-being to capture a more complete picture of students’ financial circumstances.
Public Policy

Students’ financial literacy and well-being is a vitally important field of study due to the complexity of economic knowledge and because it directly affects later (adult) financial literacy and well-being. Misinformation on financial products and services, for example, could lead young adults (college students) to be financially at-risk because of poor financial decisions and financial behaviors. Thus, college students’ financial literacy and well-being should be a major concern among policy makers, consumer advocates, consumer researchers, and educators. The importance of financial literacy has reached the national agenda in the United States with the establishment of the President’s Advisory Council on Financial Literacy (January, 2008). The Council recommended 15 steps that should be taken to improve the financial literacy of Americans of all ages. Two recommendations specifically emphasized college students’ financial literacy: 1) that college students take a comprehensive course in financial literacy or pass a competency test, 2) that colleges, universities, and other research entities should undertake research on the state of financial literacy among U.S. citizens and identify effective measures to increase financial literacy among the population (President’s Advisory Council on Financial Literacy, 2008).

To date Malaysia has no public policy specifically concerning financial literacy of its citizens. Curriculum or coursework related to personal finance has not been developed or taught at preschool or primary school levels. Malaysian students can learn about household economics, general economics, accounting, and entrepreneurship during secondary school (age 13-17 years), but this subject matter is not available to all students due to budgetary constraints and too few teachers capable of teaching this content. In addition, personal finance topics are still considered minimal important by advocates and financial counselors
and educators. Most of the programs or activities related to this topic also never address young consumers (such as those aged 18-24 years), specifically (Ibrahim, Harun, & Mohamed Isa, 2009).

The Central Bank of Malaysia (CBM) has played a pivotal role in promoting and enhancing financial literacy in the country by launching “The Financial Sector Master Plan” in 2001, which includes a 10-year consumer education program. This initiative is a partnership between government ministries, non-governmental organizations (NGOs), and the financial industry (Aziz, 2005). CBM also has developed comprehensive strategies to enhance the financial capability of consumers through: (1) developing and disseminating educational materials on financial products and services through booklets and websites, (2) collaborating with the Ministry of Education and financial institutions in promoting financial education to students, and (3) conducting financial education outreach programs including public and university students (Swee Lian, 2008).

Since 1997, several programs on financial education in schools have been established in collaboration with the Ministry of Education and financial institutions such as “School Adoption Programs,” “Student Financial Club”, and “Lesson Plans and Workshops for Teachers.” Seminars and workshops on personal money management discussing educational loans, credit cards, insurance, and investments also have been delivered specifically for college and university students. In addition, the Credit Counseling and Debt Management Agency (a subsidiary of CBM) has collaborated with public universities to incorporate the subject of personal finance into existing curricula (Swee Lian, 2008). In Malaysia, as in the United States, a concerted effort among various agencies including government, financial institution, colleges, researchers, educators, parents, schools, media, and social institutions
has led to additional opportunities for young adults to improve their financial knowledge. More is still needed, however, to ensure that students’ financial literacy is increased, thus contributing to the overall future financial well-being of young adults.

References


APPENDIX: IRB LETTER

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Date: February 8, 2010

To: Mohamad Fazli Sabri
28 Schilletter Village, Apt. B
Ames, IA 50010

CC: Christine C. Cook
2358 Palmer Bldg.

From: Office for Responsible Research

Project Title: Child Consumer Experience and the Financial Literacy of College Students in Malaysia

The Co-Chair of the ISU Institutional Review Board (IRB) has reviewed the project noted above and determined that the project:

Does not meet the definition of research according to federal regulations.

Is research that does not involve human subjects according to federal regulations.

Accordingly, this project does not need IRB approval and you may proceed at any time. We do, however, urge you to protect the rights of your participants in the same ways you would if IRB approval were required. For example, best practices include informing participants that involvement in the project is voluntary and maintaining confidentiality as appropriate.

Please also know that any change to this project must be communicated to the IRB to determine if the project has become research with human subjects requiring IRB approval.