EXAMINING CAPACITY AND PREPARATION OF TEACHERS FOR TEACHING
PERSONAL FINANCES IN PUERTO RICO

by

KURT A. SCHINDLER

B.A., State University of New York, 1984
M.S., American College, 1997

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Family Studies and Human Services
College of Human Ecology

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2014

Abstract

This study explored the factors that affect the capacity of teachers to teach personal finances in the public and private school systems in Puerto Rico. Three hundred sixteen teachers from grades six to 12 completed the on-line survey that included an assessment of demographic variables, socioeconomic variables, teaching variables and personal finance administration variables. To guide this study, the Personal Finance Education Efficacy Model was created using Social Cognitive Theory. Within this model, three research questions were addressed including what are the determinants of: (a) objective financial knowledge, (b) subjective financial knowledge, and (c) high personal finance teaching efficacy. Hierarchical multiple regression analyses were used to test the determinants of both objective and subjective financial knowledge. Results indicated that both models were significant ($\rho < .001$), in which the model accounted for 10% of the variance of objective financial knowledge and 44% of the variance of subjective financial knowledge. A hierarchical binary logistic regression analysis was used to test the determinants of high level of personal finance teaching efficacy beliefs. Results showed the model was accurate approximately 83% of the time.

Additionally, results from Principal Component Analyses indicated the Spanish translated versions of the Teacher Efficacy Scale (TES), the Financial Self-Efficacy Scale (FSES), and the Personal Finance Teaching Efficacy Beliefs Instrument (PFTEBI) demonstrated similar levels of reliability as previously published in the literature. These findings infer that scales may be used in other cultures and be translated into other languages like Spanish. The PFTEBI was created for this study based on the Mathematics Teaching Efficacy Beliefs Instrument (MTEBI) to measure the level of teaching efficacy

beliefs of the respondents. PFTEBI was found to be composed of three subscales and

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Dedication

To my wife and best friend, Sandra, thank you for being there every step of the way. This has been a long journey and your support never diminished or waivered, even when mine might have. No one ever accomplishes anything alone and certainly not a PhD. This is a shared accomplishment.

To my children Kurt, Karl, Kelly and Kevin, I can only express my love and my thanks. I hope this adventure of mine serves as an example of what you can aspire to throughout your lifetime. Always keep learning, always keep asking, and always keep wondering.

Chapter 1 - Introduction

Financial education and financial literacy have been in the national spotlight since the creation of the Financial Education and Literacy Commission, established under Title V of the Fair and Accurate Credit Transactions Act of 2003. Research priorities have focused on financial education program impact and behavior modification. Although many states and jurisdictions have implemented financial education standards for high school students, little attention has been paid to the teachers of financial education. The personal finance issues, strategies, and concepts to be taught to children in financial education programs need to be objectively understood and mastered by those who teach. Therefore, the current study explores teachers' financial knowledge, financial behaviors, financial self-efficacy, general teaching efficacy, and teaching efficacy for personal finance in order to understand teachers' level of preparation to teach personal finance concepts to students.

Statement and Significance of the Problem

Teacher training in personal finance subject matter is not well documented in the research, although training is a significant predictor of a teacher's perceived competence or efficacy for a given subject (Way & Holden, 2009a). The research to date does not provide much evidence regarding how prepared teachers are to teach personal finance and what training might be the most beneficial for them. In addition, research does not indicate whether financial behavior is related to teachers' efficacy for teaching personal finance. Furthermore, the current literature does not indicate if teachers' financial self-efficacy is related to teachers' efficacy regarding the teaching of personal finance.

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Financial education programs often begin with policies mandated by governments, which are later implemented at the school system level. Malin (2006) argued that central banks, as public economic institutions, have the unique ability and responsibility to work with school systems on finance and economic education initiatives due to their understanding of the financial and economic systems. The Federal government has created two education initiatives, one through the Federal Reserve System and the other through the Federal Deposit Insurance Corporation. The Federal Reserve System publishes information, lesson plans, and teacher guides on its website (www.federalreserveeducation.org) to assist teachers, educators, and parents in the creation of financial education programs for primary and secondary levels of education. The Federal Deposit Insurance Corporation has created a financial education program, "Money Smart," to provide financial education to adults and young adults. This personal finance education curriculum is available to the public in a number of formats (FDIC, 2013). The curriculum has been implemented by a number of financial institutions, such as First Citizen's Bank, Bank of Rhode Island, Banco Popular in Puerto Rico, and U.S. Bank. Schools and adult education classes have used the lesson plans and teacher guides provided by the website in areas where the financial institutions are located.

Research has indicated that educators identify financial literacy as critically important to the overall preparation of students to deal with financial issues in their lives (Godsted & McCormick, 2007). The overwhelming majority of empirical research has been concerned with the impact and effectiveness of the personal financial education instruction on the students. Some researchers have called for longitudinal studies to measure the effects of financial education at different stages of life (Willis, 2009; Huston,

2011; Danes & Haberman, 2007; McCormick, 2009; Peng, Bartholomae, Fox, & Cravener, 2007; Varcoe, Martin, Devitto & Go, 2005; Johnson & Sherraden, 2007). Some have called for evaluating the immediate impact of financial education programs (Lyons, Palmer, Jayaratne, & Scherpf, 2006; McCormick, 2009; Fox, Bartholomae, & Lee, 2005). Other researchers have questioned the proposed benefits of financial education programs (Willis, 2008; Willis, 2009; Hathaway & Khatiwada, 2008). Whereas some attention has been paid to the delivery of the financial education concepts, less attention has been paid to the people who deliver and teach the concepts of personal finance – the teachers. Teachers are an important component of policy change and program success, as discussed by Tucker (2012) and Grossman, Stodosky, and Knapp (2004). Grossman et al. (2004) suggested that how teachers respond to policy changes depends on their knowledge of the subject matter. Tucker (2012), in his study of the Finnish school system, showed teacher capacity was a key component for the improvements in students' progress.

The National Association of State Boards of Education (NASBE, 2006) presented eight recommendations regarding personal finance education for state education boards to consider. One of the eight recommendations was to ensure that teachers are adequately trained in the concepts of personal finance. Financial education programs have faced a number of challenges, and Mundy (2008) identified teacher confidence and competence to deliver effective financial education as a key challenge. Teachers have indicated they need support because they feel unprepared to teach financial literacy (Hira, 2010). Teacher preparedness is hindered by the fact that financial education does not have a widely accepted, single definition (McCormick, 2009). Without a solid definition of

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financial literacy, specific standards required to teach content and skills are difficult to set. In an assessment of aptitudes and attitudes of personal finance teachers, the lack of specific standards mandating financial literacy was the second highest ranked difficulty reported (McCormick, 2005). A lack of standards can hinder the development of personal finance education materials and necessary professional development opportunities. In fact, McCormick and Godsted (2006) found in a study of Indiana teachers that the lack of personal finance education materials and professional development opportunities impeded classroom delivery of financial education.

Grossman, Stodolsky, and Knapp (2004) indicated that much of the scholarly literature tends to treat "teaching as teaching," regardless of the subject matter. The authors argued that "the subject matters a great deal in how teachers think about learning, schooling, and their work" (p. 3). Grossman et al. (2004) also argued that subject material represents the vessel through which pedagogical changes are enacted and is often the direct ambition of curricular reforms. Curricular reforms usually include new courses; when new courses are introduced, teachers need to know how to teach the new course. What teachers are teaching will impact how they instruct their students. For example, English is not taught the same way as mathematics and mathematics is not taught the same way as science due to the inherent differences in the subject matter. Like these subject areas, teaching personal finance requires a unique knowledge base and teaching skill set (Tschannen-Moran & Woolfolk-Hoy, 2001).

The NASBE (2006) has recognized that many teachers do not have any pre-service training in personal finances because the subject matter was not available when they attended college. Teacher competency and understanding of the subject matter is

crucial for imparting valid and usable knowledge to students (McCormick, 2009; Way &

Holden, 2009a; Grossman, Stodolsky, & Knapp, 2004). Mandell and Klein (2009)

posited that more research needs to be conducted to examine teaching methods and

content delivery of personal finance concepts. In summary, teacher competency and

subject comprehension are important considerations when measuring teacher capacity to

teach personal finance.

Way and Holden (2009a) found the literature at the time neither addressed teacher

capacity for managing personal finances nor the effect of this capacity on the teacher's

ability to teach personal finance. However, research in this area appears to be increasing

on a national and international basis. Garcia, Girfoni, Lopez, and Mejia (2013) profiled

three projects in South America that focus on teacher preparation. In addition, several

papers on teachers and teaching personal finance were presented at the annual

Association for Financial Counseling and Planning Education (AFCPE) conference in

November of 2011 (Pankow, Borr, & Jurgensen, 2011; Hensley, 2011; Gutter, Gillen,

Copur & Way, 2011). These researchers posited that the curriculum process needs to

include teacher preparation to teach the subject material (i.e., financial knowledge) and

that financial education teachers need specific training on personal financial concepts and

personal finance teaching methods. It was noted that personal finance courses are not

typically included in pedagogical curricula. Teachers' preparation, capacity, and belief in

their ability to teach, or efficacy, are areas that warrant further research due to the

importance of financial education.

Research has been conducted on teacher preparation (i.e., knowledge level), on

teachers' pedagogical training, and on teacher efficacy in subject matters such as

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mathematics and science (Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998; Enochs, Smith, & Huinker, 2000; Utley, Moseley, & Bryant, 2005; Bates, Kim, & Latham, 2011). The findings indicated that preparation in the subject matter is important for increasing teacher efficacy in that particular subject. Furthermore, Tschannen-Moran and Woolfolk-Hoy (2001) examined the importance of teacher efficacy as it relates to the efforts put forth by teachers and the expected effects on students. This connection is considered important as Bandura (1993) posited that teachers with higher teaching efficacy affect the intellectual capabilities students develop. Bandura (1993) theorized this is due to the efforts teachers put forth in teaching.

As there is an increasing push to include financial education literacy in school curriculums, the roles teachers play have become an important topic (Swars, Daane, & Geisen, 2006; Oh, 2011). The current literature does not reflect widespread application of teacher preparation and efficacy to the teaching of personal finances. Teacher competence and efficacy are important because they have been linked to higher-achieving students (Henson, Kogan, & Vacha-Haase, 2001; Wilson, Floden, & Ferrini-Mundy, 2001). The current study aimed to explore teacher efficacy in the area of personal finance by adapting measures used to examine teacher efficacy in other subjects (e.g., math and science) to determine the level of teacher efficacy in personal finance. By evaluating sources of teacher efficacy for teaching personal finance, this study will provide information that can be used to create or modify teacher training programs.

Formal courses in personal finance are not the only sources of financial knowledge. Experience and behaviors also affect teacher financial knowledge. Finances are personal in their very nature, and experiences with personal finances will impact an

individual's perspective on finances (Klontz, Britt, Mentzer, & Klontz, 2011; Engelberg, 2005). Lown (2011) developed the Financial Self-Efficacy Scale in response to the widening recognition that psychological factors affect and influence financial behaviors. The financial efficacy scale allows researchers to understand consumer financial behavior issues and biases. Lown cited the NEFE Quarter Century Project and stated that one of the eight competencies identified by the financial literacy experts in attendance, "understanding personal beliefs and attitudes," is necessary for "building a foundation for sustainable well-being" (p. 55). Financial behaviors are understood to play an important role in determining financial satisfaction (Joo & Grable, 2004). The personal nature of the subject matter may affect the ability to convey the information in the curriculum without bias (Bates, Kim, & Latham, 2011; Tschannen-Moran & Woolfolk-Hoy, 2001; Dusek, 1975). It is therefore important to understand teacher financial self-efficacy as it relates to the teacher's personal finance teaching efficacy. This study also explores teacher subjective financial knowledge, objective financial knowledge, financial satisfaction, financial self-efficacy, and teacher financial behaviors as they relate to personal finance teaching efficacy.

Purpose of the Study

Behaviors and beliefs are essential aspects of self-efficacy, and self-efficacy is an important factor in competence (Bandura, 1993). Using Social Cognitive Theory (Bandura, 1997) as a theoretical framework, this study will use quantitative analysis to explore how demographic characteristics, socioeconomic characteristics, financial self-efficacy, teaching efficacy, formal preparation in personal finances, subjective financial knowledge, objective financial knowledge, and financial behaviors affect the personal

finance teaching efficacy of Puerto Rican teachers. Puerto Rico does not have a personal finance standard in the general education curriculum, which means personal finance concepts are not required to be taught in most public and private schools. At the same time, Puerto Rico has a personal finance course in the vocational school system via the family and consumer sciences curricula, and private schools may offer an elective titled business math or consumer math. In order to fill this gap in the education curriculum in Puerto Rico, the Alliance for Education in Economics and Personal Finance (Alliance) has been training volunteer high school teachers in the concepts of economics and personal finances since 1998, so that teachers may train their students in these concepts. To date, no evaluation of teacher willingness to teach economics and personal finances, or their ability to teach economics and personal finances, has been undertaken. This situation, coupled with a recent study that highlighted a general lack of financial knowledge in Puerto Rico (Castro-Gonzalez, 2014), provides strong reason for conducting this research. It is the goal of this research study to determine if common factors exist among teachers that affect their ability and capacity to teach personal finances. The findings will allow the Puerto Rican educational system to tailor current teacher training to the needs of Puerto Rican society.

Definitions

This study uses a number of terms and definitions that are unique to the study of teachers, instruction (i.e., teaching), and efficacy. Efficacy is generally defined as the ability or power to produce an effect. Bandura (1997) defines personal efficacy as "beliefs in one's capabilities to organize and execute courses of action required to produce given attainments" (p.3).Various types of efficacy (e.g., self-efficacy, financial

self-efficacy, teaching efficacy, and personal finance teaching efficacy) are considered based on Bandura's (1997) assertion that people hold different levels of efficacy for different tasks and skills. Tschannen-Moran, Woolfolk-Hoy, and Hoy (1998) described self-efficacy as the belief one has in his or her level of competence in general. Financial self-efficacy is described by Lown (2010) as the belief in one's ability to deal with financial situations. Teacher efficacy or teaching efficacy is described by Brouwers and Tomic (2001) as a teacher's general belief in his or her teaching abilities. General teaching efficacy is a teacher's beliefs about external factors that affect teaching in general and the outcome expected based on one's level of personal efficacy beliefs and actual behavior (Bandura, 1997). The natural progression is to consider personal teaching efficacy, which is defined as the capacity of the teacher to affect student learning (Tschannen-Moran et al., 1998).

Considering Bandura's (1997) position that a person has different levels of efficacy for various tasks, it is understood that teachers have a level or measure of specific subject teaching efficacy and subject specific self–efficacy (Grossman, Stodolsky & Knapp, 2004). Grossman and colleagues described specific subject teaching efficacy as the level of confidence a teacher has in teaching a specific subject (e.g., mathematics). Likewise, subject specific self-efficacy has been described as the level of confidence a teacher has in his or her skill level in a certain subject (e.g., executing mathematics).

The literature contains many references to terms, such as financial education, financial literacy, and financial knowledge. Financial education is used in this study to describe generic forms of educating students about personal finances. Although financial literacy is a term that is often used interchangeably with financial education (Hathaway &

Khatiwada, 2008; Huston, 2010), this study utilizes the term financial education. Financial knowledge is used in this study to describe the ability to comprehend key financial terms and concepts (Bowen, 2002), as evidenced by test scores and self-assessment.

The literature contains many references to positive and negative financial behaviors, although a specific set of behaviors has not been defined for uniform use (Gutter, 2010; Huston, 2010; Danes & Haberman, 2007; Hilgert, Hogarth & Beverly, 2003). Frequent measures of positive financial behaviors include having a cash flow management system or budgeting, goal setting and planning, contributing to savings and investments, using credit wisely, and carrying appropriate insurances for financial needs. Negative financial behaviors are described as overspending, not controlling the use of credit, and not saving or planning for the future.

Summary

The ability and capacity for teachers to effectively instruct students in personal financial matters is not clearly understood. This study will examine financial knowledge and personal finance teaching efficacy. Knowledge is considered essential in teaching a subject matter (Way & Holden, 2009; McCormick, 2005). This study will examine the relationship between three groups of variables (i.e., a teacher's personal financial history, financial education and teaching efficacy, and financial behaviors) and his or her belief in his or her ability to teach personal finance. The following research questions and corresponding hypotheses have been formulated based on the theoretical framework and literature review.

Research Question 1: How is a teacher's level of objective (i.e., tested) financial knowledge associated with a teacher's individual financial factors (i.e., financial behaviors, subjective financial knowledge, financial satisfaction, and financial self-efficacy), personal teaching factors (i.e., teaching efficacy and courses taken in personal finances), demographic factors (i.e., age, gender, and marital status), and socioeconomic factors (i.e., education level, income level, and home ownership)?

> H1: Older teachers will have a higher level of objective financial knowledge.
>
> H2: Married teachers will have a higher level of objective financial knowledge.
>
> H3: Male teachers will have a higher level of objective financial knowledge.
>
> H4: Teachers who own their home will have a higher level of objective financial knowledge.
>
> H5: Teachers who attained education beyond a bachelor's degree will have a higher level of objective financial knowledge.
>
> H6: Teachers who are in the higher income brackets will have a higher level of objective financial knowledge.
>
> H7: Teachers who have a higher level of teaching efficacy will have a higher level of objective financial knowledge.
>
> H8: Teachers who have taken more courses in personal finance will have a higher level of objective financial knowledge.

H9: Teachers who have higher levels of financial satisfaction will have a higher level of objective financial knowledge.

H10: Teachers who practice a higher number of positive financial behaviors will have a higher level of objective financial knowledge.

H11: Teachers who have a higher level of financial self-efficacy will have a higher level of objective financial knowledge.

H12: Teachers with a higher level of subjective financial knowledge will have a higher level of objective financial knowledge.

Research Question 2: How is a teacher's level of subjective financial knowledge associated with a teacher's individual financial factors (i.e., financial behaviors, subjective financial knowledge, financial satisfaction, and financial self-efficacy), personal teaching factors (i.e., teaching efficacy and courses taken in personal finances), demographic factors (i.e., age, gender, and marital status), and socioeconomic factors (i.e., education level, income level, and home ownership)?

H13: Older teachers will have a higher level of self-assessed financial knowledge.

H14: Married teachers will have a higher level of self-assessed financial knowledge.

H15: Male teachers will have a higher level of self-assessed financial knowledge.

H16: Teachers who own their home will have a higher level of self-assessed financial knowledge.

H17: Teachers who attained education beyond a bachelor's degree will have a higher level of self-assessed financial knowledge.

H18: Teachers who are in the higher income brackets will have a higher level of self-assessed financial knowledge.

H19: Teachers who have a higher level of teaching efficacy will have a higher level of self-assessed financial knowledge.

H20: Teachers who have taken courses in personal finance will have a higher level of self-assessed financial knowledge.

H21: Teachers who have higher levels of financial satisfaction will have a higher level of self-assessed financial knowledge.

H22: Teachers who practice a higher number of positive financial behaviors will have a higher level of self-assessed financial knowledge.

H23: Teachers who have a higher level of financial self-efficacy will have a higher level of self-assessed financial knowledge.

H24: Teachers who have a higher level of objective financial knowledge will have a higher level of subjective financial knowledge.

Research Question 3: How is a teacher's level of personal finance teaching efficacy associated with a teacher's individual financial factors (i.e., financial behaviors, subjective financial knowledge, financial satisfaction, and financial self-efficacy), personal teaching factors (i.e., teaching efficacy and courses taken in personal finances), demographic factors (i.e., age, gender, and marital status), and socioeconomic factors (i.e., education level, income level, and home ownership)?

H25: Older teachers will have a higher level of personal finance teaching efficacy.

H26: Married teachers will have a higher level of personal finance teaching efficacy.

H27: Male teachers will have a higher level of personal finance teaching efficacy.

H28: Teachers who own their home will have a higher level of personal finance teaching efficacy.

H29: Teachers who have attained education beyond a bachelor's degree will have a higher level of personal finance teaching efficacy.

H30: Teachers who are in the higher income brackets will have a higher level of personal finance teaching efficacy.

H31: Teachers who have a higher level of teaching efficacy will have a higher level of personal finance teaching efficacy.

H32: Teachers who have taken courses in personal finance will have a higher level of personal finance teaching efficacy.

H33: Teachers who have a higher level of objective financial knowledge will have a higher level of personal finance teaching efficacy.

H34: Teachers who practice a higher amount of positive financial behaviors will have a higher level of personal finance teaching efficacy.

H35: Teachers who have a higher level of financial satisfaction will have a higher level of personal finance teaching efficacy.

H36: Teachers who have a higher level of financial self-efficacy will have a higher level of personal finance teaching efficacy.

H37: Teachers who have a higher level of subjective financial knowledge will have a higher level of personal finance teaching efficacy.

Chapter 2 - Literature Review

The literature review covers the growing momentum in states and school systems to create and implement personal finance programs and curriculum. While there is growing literature on program impact, there is little attention given to the teachers who will implement the personal finance curriculum in terms of their financial knowledge, financial behaviors, financial satisfaction, financial self-efficacy, teaching efficacy, and personal finance teaching efficacy. This chapter summarizes the literature related to each of these areas, beginning with financial education mandates and continuing with the relationship between financial knowledge, financial behaviors, financial satisfaction, and financial self-efficacy. This chapter also includes the importance of teacher preparation, and concludes with teacher efficacy and personal finance teaching efficacy.

Financial Education Mandates

Financial education is a global issue, and it is now acknowledged as an important element of worldwide economic and financial stability. In fact, the Organization for Economic Co-operation and Development created the International Network on Financial Education in 2008 in order to involve the experience and expertise of a wide assortment of countries (OECD, 2012). Policymakers and leaders understand that future generations will have greater financial responsibilities given the projected decreases in support from governments and private pension plans (OECD, 2012; Castro-Gonzalez, 2014). Mundy (2008), in his OECD report on financial education programs in schools, found that financial education policies have been adopted in various countries in response to this growing phenomenon. This growth in financial education has continued throughout Latin

America and the Caribbean (Garcia, Girfoni, Lopez, & Mejia, 2013). Where policies have increased, the effects need to be continuously evaluated. Grossman, Stodolsky, and Knapp (2004) considered education policies and evaluated their interaction with subject matter and pedagogy. Important relationships exist among a policy, the success of said policy, and the subject matter. In his work on school based financial education programs, Mundy (2008) posited that teachers need to be trained in personal financial literacy and personal finance teaching techniques in order to assure the success of the programs. The National Association of State Boards of Education recommended that teacher training be tied to the goals of the curriculum implemented by the school system (NASBE, 2006). McCormick (2009) took the issue further and identified five points of relevance for getting financial education into schools: (a) state standards, (b) testing, (c) texts, (d) financial education materials, and (e) teacher training. The OECD International Network on Financial Education acknowledged the importance of adequately preparing the disseminators of financial education (i.e., teachers) in order to enhance the success of financial education initiatives (Atkinson & Messy, 2012). Figure 2.1 shows the basic initial public policy model based on Mundy's (2008) research. This initial model presented a relationship between the mandates for financial education and students' ability to develop and implement positive financial habits.

Figure 2.1 Implementation Process of Financial Education Mandates

| Financial Education Mandates |
| Local, State, Federal, Foreign Governments |

⇩

| Students Learn Personal Finance Concepts and Tools |
| Good Financial Habits |
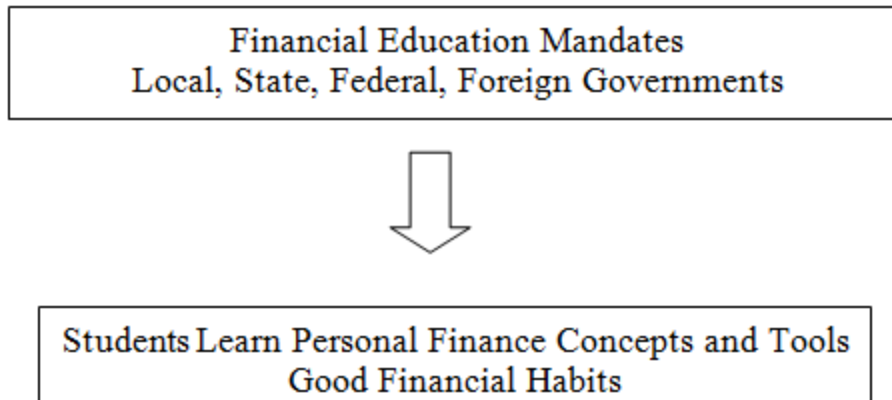
Generic financial education model describing the overall process based on Mundy (2008) and OECD (2005).

While financial education is becoming increasingly important at the global level and educators have identified financial literacy as critically important, a review of the research showed there are several impediments to the successful implementation of financial education programs. The challenges include: (a) the lack of a generally accepted definition of financial education, (b) the lack of teacher training, (c) consensus on the general objective of financial education in terms of financial knowledge acquisition, and (d) financial behaviors. The lack of a generally accepted definition of financial education may inhibit development of more financial education programs (Huston, 2010; Way and Holden, 2009a). In response to this absence of a generally accepted definition, the Federal government has joined the discussion. Core competencies in personal finance have been identified for high school students (U.S. Treasury, 2002; NEFE, 2006; Clarke, Heaton, Israelsen, & Eggett, 2005; Godsted & McCormick, 2007). The core competencies include: (a) earning, (b) spending, (c) saving, (d) credit, and (e) protection (Federal Register, 2002). Each of these core competencies contains knowledge sets and

skills for students. "The goal of the Core Competencies is to define what a consumer should know and be able to do to successfully understand and make informed decisions about their personal finances" (Federal Register, p. 52596). If students are to learn and master these core elements, then teachers need to be fully trained in them.

Teacher training has been identified as key to the success or failure of policy and curriculum mandates (McCormick & Godsted, 2006; Gutter, Gillen, Copur & Way, 2011). The lack of teacher training and professional development are seen as impediments to the inclusion of financial education in the classroom (McCormick & Godsted, 2006). The authors cited the failing grades of high school students on financial literacy tests as proof that the subject of personal finances is not being taught. Furthermore, there is no generally accepted measurement to determine how prepared teachers are to develop and prepare lesson plans on personal finance and implement them according to their state standards (Way & Holden, 2009a). As a result, there are calls for teacher development programs to address this shortcoming. The preparation of teachers will improve their ability and capacity to dispense effective and relevant financial education.

Several studies have noted the level of teachers' financial knowledge and their perceived preparedness to teach personal finance. For example, Godsted and McCormick (2007) found that many teachers rate their own personal financial knowledge as low. Based on this, the authors reasoned there is need for professional development so that educators are more comfortable with personal finance topics. Another study found that a teacher's capacity to teach personal finance is related to their perceived preparedness in the subject matter and teaching methods (Way and Holden, 2009a). Some states have

recognized this issue and have begun to take action. North Dakota, for instance, has implemented a teacher training program in order to fulfill a state mandate for high school students (Pankow, Borr, & Jurgensen, 2011). Pankow and colleagues studied 38 educators in North Dakota and found that training improved teachers' confidence in teaching state required materials, noting this is one example of the importance of the need to train and educate teachers. Additionally, the state of New Jersey implemented a personal finance high school requirement in 2009 and the New Jersey Coalition for Financial Education created and implemented the Financial Education Boot Camp for teachers in order to provide teacher training that would allow them to fulfill the state mandate (O'Neill, 2011).

In general, teachers have not been involved in the development of curricula for personal finance education and this may affect implementation of financial education programs (Gutter, Gillen, Copur, & Way, 2011; Godsted & McCormick, 2007). Gutter and his colleagues pointed out that teacher inclusion in curricula development facilitates program effectiveness. If teachers are unaware of the program or curricula mandates, possibly due to lack of participation in the creation of the curricula, then implementation may be less effective than desired. Godsted and McCormick conducted an online survey of 650 participants and found that a large majority of teachers (75%) believed the personal finance academic standards were already embedded in existing standards and that almost one-third (32%) of the surveyed teachers had not thought about teaching personal finance. This may be caused by the teachers' lack of participation in the development of the state curricula.

Gutter and his co-researchers (2011), in their study of 503 K-12 teachers and 4,855 college students, argued that the success of any financial education program is dependent on the teacher. They maintained that administrators need to understand that teachers require sufficient knowledge to effectively deliver the financial education program to students. This assertion is confirmed in a more recent study by Hensley, Richards, and Hansell (2012). Hensley and colleagues studied the effects of financial education directed at teachers on a group of 142 K-12 teachers in Colorado. One of the main findings of the study was that teachers acquiring personal finance knowledge for personal use was positively correlated with an increased level of confidence in teaching personal finances to students. In addition to the lack of professional development opportunities, other obstacles have been identified that hinder teachers from effectively teaching personal finances, such as lack of time, lack of academic standards, and lack of access to materials (Godsted & McCormick, 2007). In spite of these obstacles, teachers continue to teach personal finances based on personal financial behaviors and experiences, financial knowledge, teaching efficacy, and financial self-efficacy.

Teacher Preparation

Way and Holden (2009) studied the capacity of 504 teachers to teach financial education. These researchers conducted the seminal study, funded by the National Endowment for Financial Education (NEFE), on teachers' background and capacity to teach personal finance. The authors noted in their literature review that there was no discussion of teacher financial literacy training in the U.S. Treasury Department writings on financial literacy. The National Strategy for Financial Literacy (2011) mentioned

development of financial education resources, although no specific mention of teachers or educators was discussed.

Several authors have questioned the relationship between preparation, personal experience, and teaching personal finances. Some have looked at teacher understanding, others have looked at teacher experience, and others have looked at teacher aptitudes. Godsted and McCormick (2007), in their national overview of financial literacy, looked at the "attitudes and aptitudes of educators" (p. 1) to better understand what is being taught on financial education and how it is being taught. The authors surveyed 650 K-12 teachers from across the U.S. and found that "professional development is needed in order for educators to feel comfortable with financial topics in general" (p. 3). In a previous study of Indiana teachers, teachers did not feel comfortable with personal finances; only 26% felt prepared to discuss and teach basic finances to their own children, while, at the same time, 80% of parents believed schools should provide basic finance concepts, such as budgeting (McCormick & Godsted, 2006). A previous study considered how both teachers' beliefs about and experiences with personal finances affect learning and teaching (Grossman, Stodolsky, & Knapp, 2004). Way and Holden (2009) asked the question directly: "exactly what is it that teachers of financial literacy should be prepared to understand and to teach" (p. 9). Teachers understand the importance of preparation; 80% of teachers indicated subject matter knowledge was important for teaching personal finances (McCormick, 2005). Interestingly, Way and Holden (2009) found there was no indication that teachers contemplated the effects their own preparation and practices may have on the outcome of teaching students. Teaching the concepts is important and the goal is to help students increase their financial

capabilities so that they are more willing to carry out the necessary steps and behaviors to increase their financial well-being (Hira, 2010).

The question of teacher preparation has not been limited to personal finances. Wilson, Floden, and Ferrini-Mundy (2001) examined 300 teacher preparation research reports and found 57 that met their research criteria of being published in a peer-reviewed scientific journal within the previous two decades, covering teacher education in the United States, and addressing the five questions posed by the U.S. Department of Education. The first of five research questions in their study focused specifically on teacher subject matter preparation. Wilson et al. indicated the research has shown there is a "positive connection between teachers' subject matter preparation and both higher student achievement and higher teacher performance evaluations" (p. 7). The authors found that studies suggested pre-service teachers may not have received the conceptual knowledge beyond the basic subject matter that would allow them to adequately respond to more advanced student inquires.

Several studies have looked at the quality of teachers and the effects teacher quality has on student achievement. One study evaluated the strength of teacher effects on student achievement (Nye, Konstantopoulos, & Hedges, 2004). Nye and colleagues used the longitudinal data from the Tennessee Class Size Experiment, also known as STAR or Student-Teacher Achievement Ratio. The experiment covered 42 school districts and 79 schools in Tennessee, and it randomly assigned students and teachers to classes. Their findings suggested that achievement gains for students having a 75th percentile (i.e., effective) teacher versus a 25th percentile (i.e., ineffective) teacher were

greater than one-third of a standard deviation increase in reading scores and almost half a standard deviation increase in mathematics scores.

Rockoff (2003) used data on elementary students from a single county in New Jersey that encompassed two school districts. This data included approximately 10,000 students and 300 teachers. Rockoff found statistically significant differences between student reading and math test scores and teacher quality. For a one standard deviation increase in teacher quality, math scores increased by a quarter of a standard deviation and reading scores increased by one-fifth of a standard deviation. These results are similar to those reported in a study that used data from 88 Chicago public high schools (Aaronson, Barrow, & Sander, 2007). The authors found that a one standard deviation increase in teacher quality raised student math scores by one-fifth. In an unrelated study, data from the Texas Schools Project (TSP) was used to measure the effect of teacher quality on student achievement (Rivkin, Hanushek, & Kain, 2005). The TSP covered over 200,000 students in more than 3,000 middle and elementary schools. The results of their analysis showed that a one standard deviation in average teacher quality was associated with a 0.11 standard deviation increase in math scores and a 0.095 standard deviation increase in reading scores. There appears to be a strong association between teacher quality and student achievement.

Other authors have used different measurements for student achievement. Chetty, Friedman, and Rockoff (2011) evaluated a teacher's impact on student test scores to measure teacher quality. These authors looked at the impact teacher quality had on estimated student lifetime earnings. Chetty and colleagues found that a one standard deviation increase in teacher quality could increase a student's estimated lifetime

earnings by more than $250,000. In general, the research suggested that higher levels of teacher quality are associated with increased student achievements.

A white paper prepared by the U.S. Treasury (2002) stated that educators play an important role in determining what students learn. What and how teachers present to students are a large part of the determinants of whether students meet or exceed educational standards or even learn the material presented. The paper contended that teachers may need support to better understand personal finance concepts in order to convey them to the students. Teachers who are uncomfortable with the subject matter may not teach it or may not be effective at teaching it. The white paper authors concluded a call to action in which financial education should be part of ongoing teacher training in order to convey the importance of the subject to the teachers. The teachers, in turn, will transmit this importance to students and cover the subject matter in their class curricula. Baron-Donovan, Wiener, Gross, and Block-Lieb (2005), in their two-year study of a teacher training program for debtor education, found that teachers tend to use the knowledge and skills acquired in training classes in their own classroom activities. These behavioral observations indicated teachers retain and apply acquired knowledge.

The addition of teacher preparation and teacher knowledge variables changes the original model as shown previously in Figure 2.1. The model was based on work by Mundy (2008) and the OECD (2005), which suggested that the implementation of public policy mandates to provide financial education will yield students with good financial habits. The proposed model adds important components, considering the role of teachers in the financial education process. The added components include: (a) defining financial literacy, (b) developing the curriculum that will be used by the teachers to teach personal

finances, (c) teacher preparation, (d) teacher demographic and socioeconomic factors, (e) personal teaching factors, (f) individual financial factors, and (g) personal finance teaching efficacy. Figure 2.2 shows the expansion of the original model. The goal of the model is to have financially knowledgeable teachers who can convey and teach this knowledge. Students, in turn, can act based on this knowledge and develop positive financial habits and behaviors. These elements are necessary in order to fulfill the overriding mandate and address obstacles identified by Godsted and McCormick (2007).

Figure 2.2 Personal Financial Education Efficacy Model

Financial Education Mandates

Define Financial Literacy

Develop Curriculum

Teachers
Demographic Factors
Socioeconomic factors

Personal Teaching Factors

(Teacher as teacher)

Teaching Efficacy
Courses in Personal Finance
Tested Financial Knowledge

Individual Financial Factors

(Teacher as person)

Financial Behaviors
Financial Knowledge (self)
Financial Satisfaction
Financial Self-Efficacy

Personal Finance Teaching Efficacy

Students Learn Personal Finance Concepts and Tools

Learn Good Financial Habits

Expansion of financial education mandate model to include demographic, personal, and financial factors related to personal finance teaching efficacy.

Theoretical Framework

There is evidence that teachers' beliefs in their teaching or instructional efficacy determine, in part, how they plan academic activities and help shape student evaluations of their own intellectual abilities (Bandura, 1997; Ajzen, 2002). In addition, Peng, Bartholomae, Fox, and Cravener (2007) asserted that student financial knowledge was possibly the result of how personal finance was taught. People possess abilities that allow them to be self-reflective and self-reactive, allowing them to control "thoughts, feelings, motivations and actions" (Bandura, 1991, p. 249). Bandura's Social Cognitive Theory and his development of self-efficacy serve as the framework for this study. Most researchers in education and psychology credit the concept of teacher efficacy to Bandura's theoretical framework (Oh, 2011).

Social Cognitive Theory (SCT) looks at the interaction between the self-generated and externally generated sources of influence and explains how people obtain and maintain certain behavioral patterns (Bandura, 1997). Behavioral patterns in this study refer to the level of personal finance teaching efficacy, not to specific financial behaviors such as using a budget or creating an emergency reserve. The model depicted in Figure 2.2 shows the sources (i.e., teacher demographic and socioeconomic factors, personal teaching factors, and individual financial factors) of influence on the personal finance teaching efficacy based on SCT. Grusec (1992) acknowledged the interrelationship between the individual, the environment, and behavior in SCT. In general, SCT posits that people with a high level of self-efficacy for specific tasks will be more likely to undertake, continue, and accomplish those tasks.

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SCT considers the behavioral capability of the individual. The individual is behaviorally capable if he or she knows what the behavior is and has the skills to perform the behavior (Grusec, 1992). The previous sentence can be modified to emphasize the focus on teaching of personal finance as the behavior this study addresses. The individual is instructionally capable if he or she knows what is to be taught and has the skills to teach it. Bandura's theory is concerned with how cognitive operations influence behavior and development. Ajzen (2002), in describing perceived self-efficacy, stated that self-efficacy is concerned "with control over the behavior itself, not with control over the outcome or events" (p. 667). How can this be applied to teaching personal finance? Using nutrition as a proxy for personal finance, Anderson, Winnet, and Wojcik (2007) discussed the use of SCT applied to nutrition and healthy eating. "SCT may explain how variables, such as self-efficacy and self-regulation, may be vital to integrating healthier nutrition into U.S. lifestyles" (p. 304). Andersen et al. addressed how self-efficacy is important to understanding healthy habits. If self-efficacy is important to understanding healthy habits, then self-efficacy may be viewed as important in implementing positive personal finance teaching habits.

SCT is an extension of the theory of social learning that encompasses human behavior in addition to learning (Martin & Oliva, 2001). SCT considers cognitive, emotional, and behavioral aspects for understanding parameters that may influence personal finance teaching efficacy. These aspects (i.e., teaching knowledge, financial knowledge, financial satisfaction, and financial behaviors) are considered in the model in Figure 2.2. SCT allows the researcher the ability to evaluate and measure the relationship between the variables associated with the individual (e.g., financial efficacy), the

environment (e.g., financial education), and society (e.g., financial behavior) (Willis, 2008; Grusec, 1992; Martin & Oliva, 2001). SCT provides a framework for measuring teacher capacity to teach personal finances pursuant to the relationship between their financial behaviors, financial self-efficacy, self-reported and tested financial knowledge, teaching efficacy, and their personal finance teaching efficacy.

Because SCT is an extension of social learning theory, one aspect of SCT is the process of learning. Bandura (1991) added the element of self-efficacy, which is an individual's belief in his or herself to carry out a specific task, to social learning theory. Personal efficacy is defined by Bandura (1997) as "beliefs in one's capabilities to organize and execute courses of action required to produce given attainments" (p.3). Bandura asserted that people hold different levels of efficacy for different tasks. There have been calls for using efficacy beliefs in research (Swars, Daane, & Geisen, 2006). Various types of efficacy (i.e., self-efficacy, financial self-efficacy, teaching efficacy and personal finance teaching efficacy) are considered based on Bandura's (1997) assertion.

Tschannen-Moran, Woolfolk-Hoy, and Hoy (1998) contended that helping teachers acquire strong efficacy beliefs early would produce long term dividends. It has been suggested that established efficacy beliefs are stable and resistant to change (Swars, et al., 2006). This stability establishes efficacy as an important evaluative tool. In a study of 28 pre-service teachers at a mid-size university in the southeastern U.S., Swars and colleagues asserted efficacy beliefs and judgments are also "sensitive to contextual factors" (p. 307). Contextual factors may include financial experiences, financial education, financial knowledge, or financial satisfaction.

Financial experiences and knowledge were considered by Hensley, Richards, and Hansell (2012). The authors evaluated a research-based model of teacher professional development in five different geographic locations (Arizona, Colorado, Vermont, Illinois, South Carolina) in the U.S. Hensley and colleagues described the use of content focused teaching, which is treating the teachers as learners and consumers. Content focused teaching allowed the participants to interact with the content and thereby increase the overall effectiveness of the training. The participants learned based on the context of their current situation. Hensley et al. indicated that this form of interactive learning holds "the most promise for increasing teachers' confidence" (p. 91) to teach personal finance to students. While confidence can be described as one's perceived abilities to act in an effective manner in general, self-efficacy can be defined as one's belief to succeed at specific tasks or the power to produce an effect (McKechnie, 1979). Other authors have understood that self-efficacy is a judgment or self-perception of ability about one activity or skill (Tschannen-Moran, Woolfolk-Hoy & Hoy, 1998; Bandura, 1997; Guskey & Passaro, 1994; Bates, Kim, & Latham, 2011; Wenner, 2001; Enochs, Smith & Huinker, 2000). Brouwers and Tomic (2001) contended that self-efficacy theory "posits that self-efficacy or the belief in the ability to perform a task is linked to specific activities rather than to a global personality trait" (p. 436). Under this supposition, efficacy beliefs regarding teaching personal finances can be observed separately from other beliefs regarding financial knowledge, teaching, and financial behaviors.

Perceived efficacy is important, especially for teachers, because it facilitates strategy development and influences how well the strategies are used once they are acquired (Bandura, 1997). Brouwers and Tomic (2011) worked with a sample of 832 in-

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service teachers and showed that teachers held different efficacy beliefs for the three separate activities tested, which were controlling student behavior, securing support from colleagues, and securing support from principals. It can be suggested that teachers have one level of self-efficacy beliefs for teaching, another level of self-efficacy beliefs for teaching personal finance, and an additional level of self-efficacy beliefs for managing personal finances.

Self-efficacy arises from an individual's history of achievement in a domain and from observations of what others are able to accomplish (Grusec, 1992). Bandura (1997) asserted that self-efficacy beliefs are derived from four sources: (a) mastery experiences, (b) vicarious experiences, (c) verbal persuasion, and (d) emotions. According to Bandura, mastery experiences provide the most realistic evidence of whether one can succeed at the task. Mastery experiences serve as "indicators of capability" (p. 104). This study uses efficacy scales to measure this source of efficacy beliefs. Vicarious experiences use modeling and the verbalization of the thought process of performing the task. Examples of vicarious experiences include seeing students perform tasks successfully and the act of teaching. Verbal persuasion is the feedback from others. Student responses to teaching as well as subjective financial knowledge measure this source of efficacy in this study. Emotions are measured by the level of financial satisfaction indicated by the respondent.

Bandura (1997) further stated "people need a sense of efficacy to apply what they know consistently, persistently, and skillfully…" (p.223). Problems often do not have a single solution and the goal of teaching personal finance is for students to be able to think through the alternatives and find solutions with varied degrees of adequacy. Efficacy beliefs foster the development of cognitive functions to address the complexity of today's

problems and solutions (Bandura, 1997). Previously, Bandura (1991) indicated that

"people's beliefs in their efficacy influence the choices they make, their aspirations, how

much effort they mobilize in a given endeavor, how long they persevere in the face of

difficulties and setbacks, whether their thought patterns are self-hindering or self-aiding,

the amount of stress they experience in coping with taxing environmental demands…" (p.

257). Self-efficacy has been described as a "future oriented belief about the level of

competence" (Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998, p. 787). A study of 120

students entering the Stockholm School of Economics discussed how money attitudes

affect a person's strategies to deal with managing economic aspects of life (Engelberg,

2005). The author reported that "findings revealed considerable correspondence between

economic self-efficacy and the notion of adhering to a meticulous savings plan as well as

firmer self-control of emotions" (p. 95). Ajzen (2002) also argued that self-efficacy is the

conviction that one can execute the behavior and described self-efficacy as "perceived

control over performance of a behavior" (p. 668). These issues relate to personal finance

in behaviors, knowledge, efficacy, and teaching. The importance of teacher preparation

and efficacy regarding personal finances is clear. There are two types of factors that

influence the training teachers receive based on the teacher's demographic and

socioeconomic factors and thus influence self-efficacy. These factors can be

differentiated under two general themes: (a) personal teaching factors and (b) individual

financial factors.

  Peng, Bartholomae, Fox, and Cravener (2007) described the learning process as

two-dimensional: (a) experience and (b) personal involvement. Experience is translated

into concepts that are applied to future experiences. This is very similar to Bandura's

cognitive learning theory wherein learning is reciprocal with the environment in that individuals continue to learn based on their experiences. Furthermore, SCT posits that behavior is motivated and regulated by continuous practice of self-influence, encompassing social, motivational and cognitive skills (Bandura, 1997). The current study looks at how demographic and socioeconomic factors, teaching factors, and individual financial factors are associated with personal finance teaching behavior (e.g. efficacy). The concepts relevant to the SCT include the individual, the environment, and behavior. Behavior is defined in the current study as personal finance teaching efficacy.

SCT attempts to explain human behavior based on concepts that describe learning, such as cognitive ability, confidence, experience, and observations. These separate aspects are not isolated, but rather work together and influence each other. SCT is applied in the current study to explain the level of personal finance teaching efficacy beliefs based on cognitive ability, confidence, experience, and observations. Cognitive ability is the capacity an individual has to reason, understand, solve problems, and modify behaviors. Confidence is a feeling of assurance and is a subjective measure determined by the individual. Experience can be described as the skill or knowledge one gains from performing a task. Observations are created from paying close attention in order to gather information and increase understanding. Through the interaction of these concepts, people develop beliefs about what they can do; they foresee consequences, and set objectives and plan courses of action that will get them to those objectives (Bandura, 1991). The model developed for this study is designed to measure those factors that affect a teacher's beliefs in his or her ability to teach personal finances.

Personal Finance Education Efficacy Model

The personal finance education efficacy model (Figure 2.2) was created to depict the variables that are theorized to affect the level of personal finance teaching efficacy. The model began as a depiction of the financial education mandate (see Figure 2.1) as described by Mundy (2008). As discussed above, the model does not include the processes required to get from the financial education mandates to the final goal of financially prepared and capable students. Figure 2.2 illustrates possible sources of a teacher's level of efficacy beliefs to teach personal finances. These factors are based on SCT, which, as described above, includes cognitive ability, confidence, experience, and observations as referenced in the literature. The demographic and socioeconomic variables are included in order to understand and measure any association between these variables and the teacher's level of personal finance teaching efficacy. The personal teaching factors are included in order to understand and measure the association between teaching variables and the teacher's level of personal finance teaching efficacy. The individual financial factors are included in order to understand and measure the association between the teacher's financial behaviors, satisfaction, and perceived financial knowledge and the teacher's level of personal finance teaching efficacy. A higher level of personal finance teaching efficacy is expected to be associated with student achievement in personal finances. Each of these factors is discussed more in depth below.

Demographics and Socioeconomic Factors

Demographic concepts, such as family, age, race or ethnic background, and gender have been found to be associated with financial behaviors and financial

knowledge. One study found positive correlations between college students' positive financial behaviors and the level of parent education, parent income, number of siblings, and if the family was a two parent household (Worthy, Jonkman, & Blinn-Pike, 2010). Gender and its implications for financial education and financial behaviors were discussed in a study of 5,329 high school students (Danes & Haberman, 2007). The study included four questions on financial knowledge and eight questions on financial behaviors and looked at the gender differences for such items as saving, earning, and goal setting. The authors found that female students gained greater financial knowledge and increased positive financial behaviors as a result of participation in the financial education course. An earlier study used various measures of demographics as independent variables in their study of 924 college students' financial literacy in order to determine the relationship between these variables and student financial knowledge (Chen & Volpe, 1998). The variables included gender, age, race, income, and work experience. The authors found statistically significant relationships between financial knowledge and age (i.e., older students showed greater financial knowledge), college major (i.e., business majors scored higher than non-business majors), work experience (i.e., students with more work experience showed greater financial knowledge), and gender (i.e., females scored lower, on average, than male students). More recently, Rinaldi and Todesco (2012) studied the issue of gender differences regarding personal finance on 1,635 students in Northern Italy. Their study revealed significant gender differences in financial attitudes (i.e., boys assigned more importance to money for achieving happiness than girls and boys held a "higher pro-investment attitude than

girls") (p. 157). The study revealed no statistical difference in financial knowledge between boys and girls, in contrast to Chen and Volpe's (1998) findings.

Personal Teaching Factors

Personal teaching factors are composed of items that pertain to the individual as a professional educator, such as teaching efficacy, courses taken in personal finance, and objective financial knowledge. These factors look at the teacher as being an educator and consider the requirements of performing this profession. The following sections describe these concepts in relation to the theoretical model presented in Figure 2.2.

Teacher Efficacy

The terms "teacher efficacy" and "teaching efficacy" have been in the research since the mid-1970's (Tschannen-Moran et al., 1998). Teaching efficacy is a concept that has been used to evaluate and measure teachers and their effectiveness in the classroom. Teaching efficacy relates to a teacher's general belief in his or her teaching abilities (Brouwers & Tomic, 2001). Tschannen-Moran et al. (1998) defined teacher efficacy as "the teacher's belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context" (p. 233). This conceptualization includes two components: (a) personal teaching competence and (b) the general task of teaching.

Research has shown that teacher efficacy is a very strong predictor of students' academic attainment (Bandura, 1997). Teachers' efficacy beliefs influence teachers' approach to the educational process and their own instructional activities (Bandura, 1997). Self-efficacy beliefs affect patterns of thought that enable an individual to put forth great efforts in the pursuit of goals (Tschannen-Moran, Woolfolk-Hoy, & Hoy,

1998). Tschannen-Moran and Woolfolk-Hoy (2001) stated that "teacher efficacy is a simple idea with significant implications" (p. 783). The authors pointed out that teacher efficacy is related to a teacher's persistence, commitment, enthusiasm, behavior, and reaction to students who require more attention.

Teacher efficacy, therefore, can be seen as related to student behaviors. One author refers to this as strategic teaching and suggested that teachers model and instruct students in learning and self-regulation (Berliner, 2000). The belief in one's competence to teach students would be considered a description of strong teaching efficacy beliefs (Brouwers & Tomic, 2001). Henson, Kogan, and Vacha-Haase (2001) wrote that "teacher efficacy has been proven to be an important variable in teacher effectiveness" (p. 402). Henson et al. maintained that teacher efficacy has been routinely linked to positive teacher behaviors and student results. Oh (2011) argued that teacher self-efficacy is an essential ingredient for improving teacher education and that it has been frequently associated with positive teacher and student behavior. Oh studied the sources of teaching efficacy for 57 pre-service teachers at a Midwestern research university in the U.S., under the assumption that teacher efficacy has been related to teacher effectiveness, student achievement, student attitude, and student growth. Other researchers have found teacher efficacy affects a teacher's level of aspiration, the establishing of teaching goals, and the effort they invest in teaching (Tschannen-Moran, Woolfolk-Hoy & Hoy, 1998). The concept of teacher efficacy has been established in the literature as an important tool for evaluating teacher ability to influence student learning. The current study incorporates teacher efficacy based on the literature and its importance in SCT.

Bandura (1997) stated that people produce and are products of social

environments and that "efficacy beliefs operate in concert with sociocognitive

determinants in governing human adaptation and change" (p. vii). Bandura (1991) also

stated "people not only teach and prescribe standards for others, they also exemplify them

in their reactions to their own behavior" (p. 254). Teachers prescribe standards for

students through teaching and through example. The standards are tested via

examinations of student knowledge. The standards must be supported by the teachers'

actions or behaviors because students also observe their teachers (Danes, Huddleston-

Casas & Boyce, 1999; Brewton & Danes, 2011).

Teachers receive additional social support for financial behaviors from teaching

personal finance or from participating in personal finance training courses. Oh (2011)

described this as the verbal or social persuasion, one of the four sources from which

efficacy beliefs are derived, as posited by Bandura (1997). Literacy is a "socially

constructed process" and that "the literacy process focuses on learning interactions"

(Danes & Haberman, 2007, p. 49). This reflects well on what Grusec (1992) discussed

regarding "how control over behavior shifts from external sources to the individual" (p.

782). Teens add to their financial knowledge by discussing related issues both within the

family and with others outside the family (Danes & Haberman). Teachers constitute a key

element in social modeling for students.

Courses in Personal Finance

Teacher preparation in personal finance is an important consideration

(McCormick, 2005; Way & Holden, 2009). One way teachers can prepare to teach

personal finance is by taking courses; however, the literature does not specify if any

particular courses are the most beneficial to increase teacher knowledge (Shulman, 1986;

Shulman, 1988; Loewenberg-Ball, Thames & Phelps, 2008; Mishra & Koehler, 2006).

Wilson, Floden, and Ferrini-Mundy (2001) reviewed seven studies that addressed the

question of teachers taking undergraduate courses in mathematics, science, and reading

and subsequent student achievements. The authors reported some evidence of a

connection between teacher preparation and student achievement, but the results were not

uniform or conclusive. Wilson et al. also noted most research has considered courses in

subject matter and that little research has been done on the pedagogical perspective of the

subject matter.

The next question to ask is how important is personal financial knowledge to the

teaching of personal finance? The Education Commission of the States' (2003) *Eight*

*Questions s*howed that the literature provides evidence for "moderate support for the

importance of solid subject matter knowledge" (p. 1) by the teacher. Although effective

teaching is not a guarantee, unprepared teachers may inadvertently teach the wrong

concepts (Morton, 2005). Morton also argued that teacher development is essential for

effective instruction.

Coursework is used as a proxy for subject matter knowledge in most studies

(Wilson, Floden, & Ferrini-Mundy, 2001). Although there is no standard personal finance

course for all teachers, one study found that a major predictor of perceived competence

was whether a teacher had taken at least one college course on personal finance (O'Neill,

2011). Unfortunately, a study of 504 K-12 teachers from eight states discovered only

18.9% of teachers had taken a college course on personal finance and only 11.6% had

taken a seminar or workshop on personal finance (Way & Holden, 2009). In addition,

many teachers rate their own personal financial literacy as low (Godsted & McCormick, 2007). Jump$tart Coalition (2008) found that 64% of the teachers surveyed did not feel well qualified to teach their state's financial literacy standards. Teachers need to have a certain level of competency with personal finances in order to help students turn their knowledge into positive behavior (NEFE, 2006; Hira, 2010). Mundy (2008) posited that teachers may not have the competence or confidence to teach financial education, although he argued that teachers may have technical knowledge of the subject matter and first-hand experience. In other words, teachers need to have a strong level of teaching efficacy.

Other studies, such as the biennial Jump$tart Coalition for Personal Financial Literacy survey and the Financial Industry Regulatory Authority (FINRA) National Financial Capability Study, have used specific questions to test respondents' actual financial knowledge. Banjeree (2011), in his use of the National Financial Capability Study, included data from a national survey of 1,500 adults, an additional state-by-state survey of 28,146 adults, and interviews of an additional 500 adults from the 50 states and District of Columbia. Banjeree found that states face a policy issue when it comes to creating the correct environment for positive financial behaviors. The issue centers on which questions to ask in order to obtain a reliable metric of financial knowledge, because as previously discussed concerning financial literacy, there is also no universal and consistent measure or definition of financial knowledge in the literature (Robb, 2011).

In one example, Mandell and Klein (2007) discussed how the questions for the Jump$tart survey were developed by a committee of financial educators in four areas: (a)

income, (b) money management, (c) credit and spending, and (d) investing and saving. These areas correspond with the core skills presented by the U.S. Treasury Department. These are not the only areas that could be tested, as the number of concepts within personal finances is vast. The Alliance for Education in Economics and Personal Finance (Alliance) tested a group of 450 vocational and fourth, fifth, and sixth grade teachers on 11 of the Jump$tart questions to understand the level of teacher financial knowledge (Alliance, 2012). The questions selected for inclusion covered basic topics of insurance, cost of living, macroeconomics, budgeting, cash flow, and credit use. The report indicated relatively low, self-reported financial knowledge scores, which averaged 4.25 on a 10-point Likert-type scale.

The U.S. Treasury (2002) reported that teaching financial education involves two skill sets: (a) knowledge of personal finance and (b) knowledge of how to teach. How personal finance is taught may affect the level of student financial knowledge (Peng, Bartholomae, Fox & Cravener, 2007). Several studies support the importance of financial knowledge and capacity to teach personal finance. One study found that while 64% of the teacher sample felt unqualified to teach personal finances, only approximately one-third had taken a course on personal finance (Way & Holden, 2009). Another study found that 80% of teachers felt it was important to teach financial literacy, with high school teachers holding the strongest belief (Godsted & McCormick, 2007). The study also found that male teachers were more likely than their female counterparts to believe in the importance of teaching financial literacy. In addition, about half of the sample of teachers taught some form of financial literacy, while some 32% had never thought about it. It appears that while teachers may have knowledge regarding personal finances and may

understand the importance of teaching personal finance, the majority do not feel qualified to do so. Only one of the two skill sets mentioned by the U.S. Treasury is being met.

Financial Knowledge

As previously noted, there does not appear to be a consistent definition of financial knowledge in the literature (Robb, 2011). Financial knowledge may be measured objectively through examination (i.e., testing). Financial knowledge may also be measured subjectively by asking respondents to judge their level of financial knowledge in general or on specific financial topics. Most studies on financial knowledge have been done on college and high school students, rather than on teachers. Teachers can be expected to have higher levels of financial knowledge than students in order carry out instruction activities with students. This literature review contains references to articles and studies with college and high school student participants, as these studies tend to include the subject matter proposed for students by various authors (U.S. Treasury, 2002; NEFE, 2006; Clarke, Heaton, Israelsen, & Eggett, 2005; Godsted & McCormick, 2007). While the research has been done on students, the focus of this study is on teachers. The areas of study, topics, and competencies apply to teachers as well, as teachers are going to instruct the students on these issues.

Objective Financial Knowledge

Bowen (2002) defined financial knowledge as "understanding key financial terms and concepts needed to function daily in American society" (p. 93). Huston (2010) found, in her evaluation of 71 studies, that the terms financial knowledge and financial literacy were used synonymously in just under half of the studies. Huston posited that although the definitions of financial knowledge are not uniform in the literature, four distinct

subject areas of financial knowledge can be inferred from the literature. These four distinct subject areas, or categories, of financial knowledge are: (a) money basics, (b) borrowing, (c) protecting resources, and (d) investing. Other authors included similar categories in their study of the connection between household financial knowledge and behavior (Hilgert, Hogarth, & Beverly, 2003). Hilgert et al. used data from the University of Michigan's Monthly Surveys of Consumers to study cash flow management, credit management, saving, and investing and found a correlation between financial knowledge and financial behavior. Robb and Sharpe (2009) also studied whether there was an association between college student financial knowledge and credit card use for 6,250 college students at a large, Midwestern university. They found there was little difference between the groups of higher and lower financial knowledge in terms of carrying a credit card balance. Robb and Sharpe did find that higher levels of objective financial knowledge were found to be associated with higher credit card balances.

In another study reporting on an NEFE national study of 1,857 students, Schuchardt (1998) confirmed that financial knowledge in areas of tracking expenses, saving for future purposes, using a budget, paying down debts, understanding the costs of buying on credit, and shopping for auto insurance helped improve financial behaviors at least three months after the financial education was given to the students. Four questions regarding financial knowledge were included in a subsequent study of 5,329 students that participated in the NEFE High School Financial Planning Program in 2003-2004 (Danes & Haberman, 2007). The four financial knowledge questions covered understanding the cost of purchasing on credit, how to shop for auto insurance, knowing about investing and stocks, and understanding the difference between needs and wants. Students reported

the highest scores for the difference between needs and wants. More than 60% of the students reported increased knowledge about credit, auto insurance, and investments between the beginning and end of the class, using the post-then-pretest method. Chen and Volpe (1998) surveyed 924 college students from multiple universities. The study measured college student financial knowledge in such areas as general financial concepts, savings, borrowing, insurance, and investments. The average score earned by the students on the survey was 52.87, with a minimum of 23 and maximum of 86. The authors attributed this lack of general knowledge to the age of the survey respondents and the fact that they had not had experience with investments or credit.

Danes and Haberman (2007), Huston (2010), Hilgert, Hogarth, and Beverly (2003), Schuchardt (1998), and Chen and Volpe (1998) all addressed areas of financial knowledge that are pertinent to high school students. Teachers would therefore be expected to have a stronger working knowledge than their students of financial issues and topics that are pertinent to high school students, in order to be prepared to address student inquiries beyond the basic high school level (Wilson et al., 2001). Teachers need to be trained and tested in personal finances to be most effective, as it has been reported that teacher confidence increased and teacher personal financial behaviors improved after participating in training sessions on personal finance for personal use and applicability in the classroom (Hensley, Richards, & Hansell, 2012).

Individual Financial Factors

As previously discussed, a consistent and universally accepted measure of financial knowledge, be it objective (tested) financial knowledge or subjective (self-reported) financial knowledge, or relative financial knowledge to others (self-reported

comparison) has not been established (Robb, 2011; Goldsmith & Goldsmith, 2006).

Various studies incorporate both measurements, while others incorporate only one. The

studies incorporating only objective financial knowledge were discussed in the previous

section. Now subjective financial knowledge will be addressed in this section in keeping

with the structure of the Personal Financial Education Efficacy Model (Figure 2.2).

Subjective Financial Knowledge

Self-reported knowledge has been used in the literature for some time (Perry &

Morris, 2005; Danes & Haberman, 2007; Gutter, 2010; Asaad, 2012). Both the Asaad

(2012) and FINRA's (2009) studies found there is a gap between objective financial

knowledge and subjective financial knowledge, usually with the subjective financial

knowledge score being higher than the objective financial knowledge score. Asaad

argued that risky financial behaviors may be a result of having too high a level of

subjective knowledge compared to the level of objective financial knowledge. It is

important to consider both forms of measurement. A direct and significant relationship

has been observed between subjective financial knowledge, objective financial

knowledge, and financial behaviors (Allgood & Walstad, 2012). In their study of 28,148

U.S. households, Allgood and Walstad found a significant relationship between financial

knowledge and financial behaviors, with perceived financial knowledge having a stronger

association than objective financial knowledge.

Several studies incorporate both subjective and objective measures of financial

knowledge. For example, Xiao, Tang, Serido and Shim (2011) studied 2,098 first year

students at a major state university (the state was not named). Xiao et al. found that both

objective financial knowledge and subjective financial knowledge play a significant role

in the financial behavior process. Subjective financial knowledge had a greater impact on financial behavior than objective financial knowledge. Additionally, Robb and Woodyard (2011) also found objective financial knowledge and subjective financial knowledge were associated with improved financial behaviors. The authors used data from the National Financial Capability Study. The findings were consistent with other research that has found that while both objective and subjective financial knowledge were important, subjective financial knowledge had a higher relative impact on financial behaviors than objective financial knowledge. Because students' and teachers' beliefs about finances affect learning and teaching, it is important to understand a teacher's perceived (i.e., subjective) financial knowledge (Grossman, Stodolsky, & Knapp, 2004).

A third way of measuring financial knowledge is by asking respondents to rate their financial knowledge against that of their peers (Gutter, 2010). Gutter argued that this measurement would enhance the understanding of an individual's confidence to manage finances (i.e., financial behaviors). The composite score of the three types of financial knowledge (i.e., objective, subjective, and relative) was used to measure the individual's financial knowledge. No additional studies using relative financial knowledge were located.

Financial Behaviors

The consensus is still for educators to provide tools for consumer decisions within the restrictions in the current personal finance education policy environment. Classrooms are where values, attitudes, beliefs, and expectations are encouraged, and these interact with the belief systems and norms students bring to the classroom (Brewton & Danes, 2011; Peng, et. al., 2007). Danes (1994) suggested that parental modeling influences are

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important in conveying "cognitive and effective norms" (p. 131). The norms students

bring to the classroom are acquired in the home from parents either through teaching or

observation (Hilgert, Hogarth, & Beverly, 2003; Xiao, Tang, Serido, & Shim, 2011).

According to Danes and Haberman (2007), family is the main financial socialization unit

for children and yet "parents are not providing children with adequate financial education

based on their own lack of knowledge" (p.48). The focus of teaching is on knowledge

acquisition (Way & Holden, 2009), and teachers educate students on how to think,

analyze, and make correct decisions regarding their finances (McCormick & Godsted,

2006). Danes, Huddleson-Casas, and Boyce (1999) argued that children learn by

"observation, practice and intentional teaching" (p. 28). Given that parents are not

providing financial education to their children (Danes & Haberman, 2007), it has been

suggested that students may share more of their teacher's financial viewpoints than those

of their parents (Brewton & Danes, 2011). It is, therefore, not hard to imagine that

"classrooms have been found to significantly influence the development of students'

financial socialization" (Brewton & Danes, p. 129). Students observe their teachers'

behaviors so it is understandable that teacher financial behaviors will have an impact on

student learning. Modeling and observation are principal ways children learn (Danes,

1994; Johnson & Staten, 2010; Clarke, Heaton, Israelson. & Eggett, 2005; Hira, 2010;

Brenner, 1998). Because students share their teacher's viewpoints and observe the

teacher's behaviors, it is important to enhance teacher financial behaviors by

understanding the factors that may affect behaviors. These factors are comprised of

financial behaviors, financial satisfaction, subjective financial knowledge, and financial

self-efficacy.

Financial behaviors may be used to measure how a teacher manages their personal

finances. Performance refers to one's experience in terms of success or failure (Bandura,

1997). The concepts and descriptions of financial behavior are not uniform in the

literature. What has been shown in the literature is the relationship between financial

behaviors and employee productivity (Joo & Grable, 2000; Garman, Leech & Grable,

1996). Joo and Grable discussed the relationship between an individual's lack of financial

knowledge and his or her likelihood of making poor financial decisions, which also led to

decreased productivity in the workplace. No studies were found that addressed teacher

productivity. The Joo and Grable (2000) and the Garman, Leech and Grable (1996)

studies were limited to clerical workers.

There is no established list of behaviors that all researchers have used to measure

the appropriateness of individual financial behaviors. A number of studies look at

financial behaviors from similar perspectives, but none used exactly the same variables.

For example, Hilgert, Hogarth, and Beverly (2003) created a financial behavior index

based on the five areas of cash flow management, credit management, savings, investing,

and other financial experiences, such as owning a home and having set goals for the

future.

In regards to the many studies on financial behavior, few studies were found that

studied the financial behaviors of teachers. Instead, studies of students' financial

behaviors were more prevalent. Since teachers are required to attend continuing

education courses and receive periodic training, it is reasonable to assume that teachers

are also students at times. There are several studies that look at teachers as students. For

example, Hensley (2011), in his study of 144 teachers, found that content-focused

professional development may help teachers improve financial behaviors. The author re-administered the financial behavior questionnaire to 55 teachers six months after participation in a three-day financial education workshop and found there was an increase in positive financial behaviors. Financial behavior may therefore be helped by financial knowledge, which is obtained through training (Lusardi & Mitchell, 2007; Valentine & Khayum, 2005; Hilgert, Hogarth & Beverly, 2003) or through experiences (Robb & Sharpe, 2009; Shockey & Seiling, 2009; Hira, 2010). Financial knowledge has been found to be associated with financial behaviors. Hira (2010) argued "financial education is a lifelong learning process" (p. 20). It stands to reason that teachers need to maintain their financial knowledge over time.

Only a small percentage of parents educated their children on such issues as family budgets, auto insurance, and financial recordkeeping (Bowen, 2002). The teaching of these concepts will fall to teachers, who must be versed in the concepts and would need to include activities that practice the lessons presented, as well as follow ups to ensure continued practice (Xiao, Tang, Serido, & Shim, 2011). Students have demonstrated positive responses to financial education in areas such as tracking expenses, saving for future purposes, using a budget, paying down debts, understanding the costs of buying on credit, and how to shop for auto insurance (Schuchardt, 1998). These are issues and behaviors that are relevant to students and they may also be used to measure whether the individual is administering the family finances in a prudent manner. Financial behaviors can be conceptualized for this study as behaviors expected of graduating high school students, such as maintaining a budget, obtaining auto insurance,

saving a portion of current income, obtaining a copy of their credit report and making

informed financial decisions.

Financial Satisfaction

Satisfaction can generally be defined as the quality or state of being satisfied.

Financial satisfaction is defined as "a subjective evaluation of one's personal finances"

(Kim, 1999, p. 4). This is a self-reported measurement of an individual's overall

satisfaction with their finances and may be considered one of the emotional sources for

an individual's determination of self-efficacy beliefs (Bandura, 1997). Little is known

about how teachers' backgrounds and financial satisfaction influence interest in and

capacity to teach financial education (Way & Holden, 2009a). Financial satisfaction has

been found to influence financial behaviors and household money management (Kim,

1999). To measure financial satisfaction of a group of 262 workers at a Wisconsin

insurance company, Kim (1999) used four questions (i.e., satisfaction with present

financial situation, income adequacy, level of debt, and saving). Kim found a significant

relationship between financial satisfaction and pay satisfaction (i.e., income adequacy).

Joo and Grable (2004) studied 220 clerical workers to develop a framework to

measure financial satisfaction. Joo and Grable indicated that demographical and

socioeconomic characteristics (i.e., gender, marital status, home ownership, age, income

level, and education) appear to be positively associated with financial satisfaction, as are

financial behaviors (i.e., savings, monthly debt payments, and comparison shopping), and

financial attitudes (i.e., subject perception of cash management, credit management, and

income adequacy). In their review of the research, Joo and Grable noted that financial

satisfaction has been measured through multiple items and as a single item, reporting that

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each measurement yielded acceptable validity and reliability. Financial satisfaction is an important measurement for teachers because a teacher's beliefs influence how he or she instructs students (Grossman, Stodolsky, & Knapp, 2004).

As discussed, the literature provides a number of references to financial satisfaction. The references have shown the relevance of this measurement for teachers by linking the level of financial satisfaction with the expected efficacy level and financial behaviors. Efficacy beliefs and financial behaviors are theorized to be associated with personal financial teaching efficacy.

Financial Self-Efficacy

No studies were found in the literature that discussed the relationship between financial self-efficacy and personal finance teaching efficacy. As previously stated, self-efficacy is a personal judgment of ability about one activity or skill (Tschannen-Moran, Woolfolk-Hoy & Hoy, 1998; Bandura, 1997). Bandura (2004) stated that "belief in one's efficacy to exercise control is a common pathway through which psychosocial influences affect health functioning" and "this core belief affects each of the basic processes of personal change" (p. 143). While Bandura (2004) referred to health functioning, this position can be applied to financial health functioning or personal finances. Financial self-efficacy, therefore, is described as a person's belief in his or her ability to manage his or her own personal finances (Lown, 2011). There are few studies that evaluate and measure financial self-efficacy.

The Social Research Centre ANZ Survey of Adult Financial Literacy in Australia (2011) is one study that attempted to include a measurement of financial self-efficacy. The study included nine questions that were designed to measure financial self-efficacy

within the overall concept of financial attitudes. The ANZ study was performed via telephone with 3,502 participants from rural and urban areas of Australia. The format of the data collection did not allow for any construct validity or reliability calculations to be performed. The study considered the overall measure of financial self-efficacy as a convenient summary of confidence in managing household finances. The authors found a strong relationship between high efficacy scores and self-reported above average financial knowledge. Lower financial efficacy scores were reported for those participants who were older than 65, had lower incomes (below $25,000), and depended on public assistance.

Wenner (2001) posited that teaching efficacy needs to be supported by demonstrating personal efficacy. Wenner argued that the appraisal of content-specific efficacy beliefs is an important consideration in discerning teacher competence in a particular subject. Wenner concluded that experience leads to greater efficacy. This is in line with Hensley et al.'s (2012) finding that teachers' confidence in the classroom was increased through the acquisition of content knowledge. Although Hensley and colleagues did not specifically address financial self-efficacy, they did address personal finance topics. Wenner's concepts on content-specific efficacy beliefs can be applied to Hensley et al.'s findings regarding personal finances. In doing so, we find a measurement of teacher financial self-efficacy is necessary. Lown (2011) looked at six studies that considered some form of self-efficacy. The studies related self-efficacy to consumer credit behaviors, the propensity to save, investment decisions, and general health behaviors. Lown noted that while there are widely accepted measures of general self-efficacy, there are few financial efficacy scales in use and that no reliability assessments

have been reported. In light of this observation, Lown developed the Financial Self-Efficacy Scale in response to the need for understanding the "context in which financial choices are made" (p. 54). It is important to measure a teacher's financial self-efficacy because beliefs regarding competence affect the level of personal finance teaching efficacy (Wenner, 2001; Hensley et al., 2012).

Specific Subject Teaching Efficacy

There are several measures of efficacy used in this study, as previously discussed. Financial self-efficacy refers to a teacher's beliefs in his or her ability to manage his or her own personal finances on a day-to-day basis. General teaching efficacy refers to a teacher's belief in his or her teaching abilities in general (i.e., without referring to any specific subject). Subject specific teaching efficacy relates, in this study, to a teacher's belief in his or her abilities to teach personal finances to students. Teaching efficacy relates to both general and specific subject teaching, and both are important considerations (Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998). Research has indicated that a teacher's self-efficacy is not necessarily uniform across the various subjects and tasks the teacher undertakes, which might precipitate the need to include knowledge domains in teacher efficacy scales in order to reflect the multifaceted nature of teaching (Bandura, 1997). Grossman et al. (2004) argued that teachers have different experiences with subject matter (e.g., personal finances), which may affect how the teacher approaches the subject in the classroom. A review of the literature revealed studies that considered subject specific self-efficacy and subject specific teaching efficacy for mathematics and science. In general, subject specific teaching efficacy is enhanced with courses taken. Several authors have found there is a relation between subject specific

self-efficacy and their subject specific teaching efficacy (Bates, Kim & Latham, 2011; Wenner, 2001). Distinctions are made in the literature between pre-service and in-service teachers due to their experience and sources of self-efficacy. As previously noted, pre-service teachers are those who have yet to begin their teaching careers and in-service teachers are those who are currently employed as teachers. Because established efficacy beliefs are resistant to change (Bandura, 1997), this study only considers in-service teachers.

A study of 89 pre-service Illinois teachers evaluated their mathematics self-efficacy and mathematics teaching efficacy against their mathematical performance (Bates, Kim & Latham, 2011). The authors found that mathematics self-efficacy was related to mathematics teaching efficacy. In addition, Bates et al. observed mathematics self-efficacy and mathematics teaching efficacy were related to mathematics performance. The authors evaluated the differences between groups of teachers by dividing them into thirds – low, middle and high. For example, the authors divided the teachers according to the results of the math skills test. By using t-tests, they compared the lowest scoring group to the highest scoring group to determine if there were any differences between their mathematics self-efficacy and their mathematics teaching efficacy. Bates et al. observed positive correlations between mathematics self-efficacy and mathematics teaching efficacy. The authors also determined that mathematical performance was related to mathematics self-efficacy and mathematics teaching efficacy.

Wenner (2001), in his consolidation of three studies on science and mathematics efficacy beliefs of practicing and pre-service teachers, stated that the "power of subjective belief held by an individual exerts greater control on his or her behavior than

the objective fact of control" (p. 181). After evaluating two studies encompassing 87 undergraduate teaching students (i.e., pre-service teachers) and one study with a sample of 101 in-service teachers, Wenner suggested teaching efficacy is necessary to affect student learning, but by itself is not sufficient. Teachers need to demonstrate personal efficacy in the subject matter as well.

Utley, Moseley, and Bryant (2005) measured the change in teacher efficacy beliefs about teaching mathematics and science during participation in methods courses and student teaching. Utley and colleagues used the Science Teaching Efficacy Beliefs Instrument and the Mathematics Teaching Beliefs Instrument on a sample of 60 volunteer pre-service teachers enrolled in the final nine months of study at a Midwestern U.S. land grant university. The authors showed that as participation in methods courses progressed, teaching efficacy in both subjects increased significantly. The current study used a modified version of the Mathematics Teaching Beliefs Instrument to measure the level of personal finance teaching efficacy as it related to knowledge of personal finances.

Experiences with science (e.g., high quality science courses) have been found to influence interest in science and interest in teaching science (Ramey-Gassert, Shroyer, & Staver, 1996). This is consistent with the findings of the Hensley, Richards, and Hansell's (2012) study of 315 K-12 teachers in Colorado that revealed a positive relationship between financial education and improved confidence in teaching personal finance. Specific subject (i.e., personal finance) teaching efficacy appears to be an important aspect in teaching students about personal finance. Therefore, this study aims to explore the factors that are associated with personal finance teaching efficacy.

Summary

The review of the literature suggested that personal finance teaching efficacy is dependent on a number of factors that are endemic to the financial environment in which we live. The literature has also established that financial experiences, demographic characteristics, socioeconomic characteristics, financial self-efficacy, teaching efficacy, perceived financial knowledge, financial satisfaction, and financial behaviors impact personal finance teaching efficacy. Further understanding of how each of these characteristics affects the personal finance teaching efficacy of teachers will provide insight into ways of educating pre-service teachers as well as improving the continuing education programs for in-service teachers. Teacher efficacy in general has been linked to teaching behaviors and positive student outcomes (Henson, Kogan, & Vacha-Haase, 2001), and studies have concluded there is a positive correlation between the teacher's preparation in the subject matter and student achievement (Wilson, Floden, & Ferrini-Mundy, 2001). Tucker (2012) showed teacher capacity was a key component for improvements in students' progress. Teachers face the constant challenge of managing their own finances in a positive manner and being influential role models to students. The results of this study will also be applicable to teachers on a personal basis by helping them to understand how to manage their own finances in accordance with their needs. In addition, this study will aid teachers in knowing how to provide an environment in which students will learn personal finance concepts and apply them in making informed financial decisions throughout their lives.

Chapter 3 - Methodology

Introduction

Financial education is an important component of more and more curricula throughout the U.S. One of the most important factors in any quality education program is the capacity of the teachers to present the concepts and induce student learning. The overall goal of this study is to understand and examine a teacher's financial knowledge as well as examine the associations of a teacher's demographic and socioeconomic condition, financial knowledge, personal finance education, teacher training, and personal financial behaviors with their belief in their ability to teach personal finances. This chapter presents the research questions, hypotheses, and research design. Based on the literature and theoretical framework rooted in SCT, the following research questions and hypotheses were developed:

Research Question 1: How is a teacher's level of objective financial knowledge associated with a teacher's individual financial factors (i.e., financial behaviors, subjective financial knowledge, financial satisfaction, and financial self-efficacy), personal teaching factors (i.e., teaching efficacy and courses taken in personal finances), demographic factors (i.e., age, gender, and marital status), and socioeconomic factors (i.e., education level, income level, and home ownership)?

H1. Older teachers will have a higher level of objective financial knowledge.

H2. Married teachers will have a higher level of objective financial knowledge.

H3. Male teachers will have a higher level of objective financial knowledge.

H4. Teachers who own their home will have a higher level of objective financial knowledge.

H5. Teachers who have attained education beyond a bachelor's degree will have a higher level of objective financial knowledge.

H6. Teachers who are in the higher income brackets will have a higher level of objective financial knowledge.

H7. Teachers who have a higher level of teaching efficacy will have a higher level of objective financial knowledge.

H8. Teachers who have taken courses in personal finance will have a higher level of objective financial knowledge.

H9. Teachers who have higher levels of financial satisfaction will have a higher level of objective financial knowledge.

H10. Teachers who practice a higher amount of positive financial behaviors will have a higher level of objective financial knowledge.

H11. Teachers who have a higher level of financial self-efficacy will have a higher level of objective financial knowledge.

H12. Teachers with a higher level of subjective financial knowledge will have a higher level of objective financial knowledge.

Research Question 2: How is a teacher's level of subjective financial knowledge associated with a teacher's individual financial factors (i.e., financial behaviors, subjective financial knowledge, financial satisfaction, and financial self-efficacy),

personal teaching factors (i.e., teaching efficacy and courses taken in personal

finances), demographic factors (i.e., age, gender, and marital status), and

socioeconomic factors (i.e., education level, income level, and home ownership)?

H13. Older teachers will have a higher level of subjective financial
knowledge.

H14. Married teachers will have a higher level of subjective financial
knowledge.

H15. Male teachers will have a higher level of subjective financial
knowledge.

H16. Teachers who own their home will have a higher level of subjective
financial knowledge.

H17. Teachers who have attained education beyond a bachelor's degree
will have a higher level of subjective financial knowledge.

H18. Teachers who are in the higher income brackets will have a higher
level of subjective financial knowledge.

H19. Teachers who have a higher level of teaching efficacy will have a
higher level of subjective financial knowledge.

H20. Teachers who have taken courses in personal finance will have a
higher level of subjective financial knowledge.

H21. Teachers who have higher levels of financial satisfaction will have a
higher level of subjective financial knowledge.

H22.Teachers who practice a higher amount of positive financial
behaviors will have a higher level of subjective financial knowledge.

H23. Teachers who have a higher level of financial self-efficacy will have a higher level of subjective financial knowledge.

H24. Teachers who have a higher level of objective financial knowledge will have a higher level of subjective financial knowledge.

Research Question 3: How is a teacher's level of personal finance teaching efficacy associated with a teacher's individual financial factors (i.e., financial behaviors, subjective financial knowledge, financial satisfaction, and financial self-efficacy), personal teaching factors (i.e., teaching efficacy and courses taken in personal finances), demographic factors (i.e., age, gender, and marital status), and socioeconomic factors (i.e., education level, income level, and home ownership)?

H25. Older teachers will have a higher level of personal finance teaching efficacy.

H26. Married teachers will have a higher level of personal finance teaching efficacy.

H27. Male teachers will have a higher level of personal finance teaching efficacy.

H28. Teachers who own their home will have a higher level of personal finance teaching efficacy.

H29. Teachers who have attained education beyond a bachelor's degree will have a higher level of personal finance teaching efficacy.

H30. Teachers who are in the higher income brackets will have a higher level of personal finance teaching efficacy.

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H31. Teachers who have a higher level of teaching efficacy will have a higher level of personal finance teaching efficacy.

H32. Teachers who have taken courses in personal finance will have a higher level of personal finance teaching efficacy.

H33. Teachers who have a higher level of objective financial knowledge will have a higher level of personal finance teaching efficacy.

H34. Teachers who practice a higher number of positive financial behaviors will have a higher level of personal finance teaching efficacy.

H35. Teachers who have higher levels of financial satisfaction will have a higher level of personal finance teaching efficacy.

H36. Teachers who have a higher level of financial self-efficacy will have a higher level of personal finance teaching efficacy.

H37. Teachers who have a higher level of subjective financial knowledge will have a higher level of personal finance teaching efficacy.

Sample

Primary data was collected for this study. Puerto Rico was not represented in other large financial literacy databases the researcher had considered; this study explored teachers in Puerto Rican public and private schools to determine if common factors exist among teachers that affect their ability and capacity to teach personal finances. The electronic survey was created using Qualtrics and contained measurements of financial knowledge, financial self-efficacy, teaching efficacy, financial behaviors, and demographic and socioeconomic variables. The survey instrument was submitted to, and

approved by, the Institutional Review Board of Kansas State University prior to data collection and analysis.

Direct Invitations

An invitation to participate in the study was sent directly to 2,918 teachers in Puerto Rico via e-mail. For the 2011 to 2012 school year there were 33,079 teachers in elementary and secondary education in Puerto Rico (U.S. Department of Education, 2013). The e-mail addresses for the teachers were obtained from various sources. Two hundred twenty-one e-mail addresses were obtained from the Alliance for Education in Economics and Personal Finance (Alliance) and pertained to past participants of personal finance workshops. Ninety e-mail addresses were obtained from the Social Studies Department of the Puerto Rico Department of Education (PRED). The educators included in the Alliance and the PRED e-mail lists taught such classes as agricultural economics, business math, and home economics, in which personal finance is often integrated into the curriculum. Four hundred sixty one e-mail addresses were obtained from a PRED Supplement Education Services program provider. Two thousand one hundred thirty-seven e-mail addresses were obtained from a university professor who had provided other training sessions unrelated to personal finances to teachers in Puerto Rico who fit the participation requirements of teaching grades six to 12. The teachers received four e-mails regarding the survey – the original invitation and three reminders. Examples of the survey invitations can be found in Appendix C.

Indirect Invitations and Support Efforts

Several methods were employed to increase survey participation (Dillman, Smyth & Christian, 2009; Dillman, Lesser, Mason, Carlson, Willits, Robertson, & Burke, 2001).

These methods included: (a) e-mails to teachers from other sources, (b) e-mails to non-teachers requesting the recipient forward the survey description and invitation to teachers they know, (c) social media text and video posts (i.e., Facebook and LinkedIn), (d) local newspaper reports, and (e) raffling ten prizes to respondents who requested participation in the raffle. The study employed snowball sampling and judgmental sampling to increase participation. As discussed above, the invitations were sent directly to teachers. These teachers were also asked to invite other teachers to participate in the study. The researcher funded these participation incentives.

Teachers from Other Sources

The Puerto Rico Private School Association (PRPSA) sent the invitation to participate to each of their member schools. The PRPSA estimated there were approximately 350 teachers of consumer math, business math, economics, and/or personal finance in the member schools. The PRPSA did not provide any assurances that the e-mail invitations to participate in the study were delivered to the teachers. These 350 potential teachers were in addition to the 2,918 direct contacts described above.

Non Teachers

An additional 429 e-mails were sent to the researcher's contacts who were asked to forward the survey invitation and link to teachers they knew who fit the participation requirements. Two hundred forty eight notifications regarding the survey, including the link to the survey instrument, were sent to the researcher's business contacts. Thirty notifications regarding the survey, including the link to the survey instrument, were sent to the researcher's contacts who were in the education profession in Puerto Rico. Fifty notifications regarding the survey, including the link to the survey instrument, were sent

to contacts contained in the researcher's LinkedIn network list that had an affiliation with education. Fifty-six notifications regarding the survey, including the link to the survey instrument, were sent to non-profit organizations whose employees had participated in financial planning workshops presented by the researcher and whose organization provided education to their communities. Thirty-five notifications regarding the survey, including the link to the survey instrument, were sent to the stakeholders of the Alliance, which included Community Reinvestment Act banking officers, university professors, PRED employees, and community business leaders.

Social Media

Social media (i.e., Facebook and LinkedIn) was used to disseminate the announcement regarding the survey, including the link to the survey instrument. Multiple posts were published in 41 Puerto Rico Facebook pages over a four-week period. Twenty-one of the Facebook pages were related specifically to Puerto Rico teachers and the remaining 20 Facebook pages were directed to general Puerto Rican audiences. Permission was requested and obtained prior to posting in these pages. See the list in Appendix D.

The researcher also posted announcement regarding the survey, including the link to the survey instrument on his Facebook page ("preguntaleakurt"). Facebook advertisements were purchased by the researcher in order to increase the visibility of the survey announcement. Five advertisements were posted. The total number of views generated was greater than 53,000. See Appendix E for the results of each post and advertisement. The final post on Facebook was a video post. The video was a personal appeal from the researcher to Puerto Rico teachers to enhance participation. The video

message emphasized the importance of the research for the financial wellbeing of the students.

Six posts were also published in LinkedIn over a four-week period. The posts were invitations directed to teachers who met the participation criteria as well as to readers who did not meet the participation criteria, but who might be able to pass the survey link to teachers they knew who fit the participation criteria. These posts generated 137 likes, 7 shares and 8 comments. See Appendix F for the detailed results of each post.

Local Newspapers

Each of three local newspapers, two of which have printed and electronic versions and one of which is published only in an electronic version, published articles on the survey and the invitation to participate. The articles are reproduced in Appendix F (in Spanish). The articles generated 47 recommendations, 110 likes and 8 tweets by readers. The links to two of these articles ("El Nuevo Día" and "Primera Hora") were posted on 31 of the above mentioned Facebook pages. In addition, a local personal finance blogger also published an article on the survey, including the link, and obtained 1,637 views during the time the survey was open for participation.

Raffle

Ten framed Guatemalan five *quetzals* bills with the picture of a classroom on the reverse side were announced as raffle prizes to participants. Respondents were asked to indicate if they would like to participate in the raffle, as participation was not automatic. Those respondents who elected to participate were asked to provide their e-mail address in order to be notified if they won. More than 200 respondents participated in the raffle. Combined, these additional efforts were implemented to increase awareness and Puerto

Rican teacher participation in the research study (Dillman, Lesser, Mason, Carlson, Willits, Robertson, & Burke, 2001).

The survey instrument was available for a total of four weeks. The initial three-week period was extended to increase participation as the timing of the survey coincided with the completion of the school year. Permission was requested of the PR Secretary of Education to promote the survey to all teachers in Puerto Rico through the PR Department of Education webpage and distribution lists. This request was not acted upon due to the recent change in local government leaders, including the Secretary of Education and the corresponding undersecretaries. In general, the survey process followed the Tailored Design Method, which intended to increase the response rate by creating trust with the respondent, providing rewards for participation, and reducing costs for respondents (Aday & Cornelius, 2011; Dillman, Smyth, & Christian, 2009).

Survey

The survey was composed of six sections, including: (a) Teacher Efficacy Scale (Hoy & Woolfolk, 1993), (b) Financial Self-Efficacy Scale (Lown, 2011), (c) Personal Finance Teaching Efficacy Beliefs Instrument, (d) financial behavior questions, (e) financial knowledge questions, (f) demographics, (g) professional preparation, and (h) current financial situation. The survey is included in Appendix A. The survey was administered on-line in order to facilitate the collection of data and the response rates from all groups. Respondents were required to answer each question prior to advancing to the next question. The three scales included in the survey incorporated the original questions in English alongside the questions translated into Spanish thus allowing any non-Spanish speaking teachers to participate without having to provide a separate survey document.

This design has the additional effect of allowing the sample population to see the original questions and the translation.

Measurements

Demographic Information

Several personal socioeconomic and demographic characteristics were assessed and used as control variables in this study. Gender was coded as female = 1 and male = 0. The marital status responses of married, single or never married, divorced, widowed, remarried, separated, or living with someone and not married were dummy coded so that married respondents were coded as 1, otherwise 0. Home ownership was dummy coded so that owning a home was coded as 1, otherwise 0. Education was dummy coded so that those holding a bachelor's degree or lower were coded as 0, otherwise 1. Household gross income categories ranged from less than $20,000 to more than $100,000. Household income was used as an ordinal measured variable. Age was entered as a continuous measured variable.

Personal Teaching Factors

Teaching Efficacy Scale

Historically, teacher efficacy scales have been found to measure two factors – personal teaching efficacy and teaching outcome expectancies (Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998; Tschannen-Moran & Woolfolk-Hoy, 2001; Brouwers & Tomic, 2001). This is consistent with Bandura's argument that self-efficacy beliefs are tied to specific activities (Bandura, 1997). Teaching efficacy is measured in this study by using the short-form of the Teacher Efficacy Scale or TES (Hoy & Woolfolk, 1993). The

10-question short-form is a modified version of the 17-question Teacher Efficacy Scale created by Hoy and Woolfolk in 1990. Tschannen-Moran et al. reported the 17-question version was based on the scale developed by Gibson and Dembo in the early 1980s. Hoy and Woolfolk (1993) developed the short-form of the TES by using the highest factor loadings from previous research, in which two factors emerged: (a) General Teaching Efficacy (GTE) and (b) Personal Teaching Efficacy (PTE) (Guskey & Pissaro, 1994; Tschannen-Moran, Woolfolk-Hoy & Hoy, 1998; Henson, Logan, & Vacha-Haase, 2001). The short-form of the TES is a six-point Likert-type scale, containing 10 statements with response categories that range from 1 (*strongly agree*) to 6 (*strongly disagree*). Scores can range from 10 to 60, with a higher score indicating a lower level of teacher efficacy.

Previous research of 179 elementary school teachers from 37 schools in New Jersey (Hoy & Woolfolk, 1993) found that reliability was adequate for both the Personal Teaching Efficacy subscale or PTE ($\alpha = .77$) and the General Teaching Efficacy subscale or GTE ($\alpha = .72$) for the TES. Examples of items contained in the scale included: (a) "The amount a student can learn is primarily related to family background;" (b) "When I really try, I can get through to most difficult students;" and (c) "When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment." See Appendix A for the complete list of items.

Courses in Personal Finance

In order to assess the professional preparation of the teachers surveyed, several questions were asked regarding teaching experience and courses taken on personal finances (Way & Holden, 2009; Alliance, 2012). The respondent was asked to indicate if

he or she has taken personal finance courses or trainings. A positive response was coded as 1, otherwise 0.

Objective Financial Knowledge

As previously noted in Chapter 3, there is no universally accepted way of measuring objective financial knowledge. Objective financial knowledge questions were based on the areas of financial knowledge expected of high school students (NEFE, 2006; U.S. Treasury, 2010). Permission was obtained from the Jump$tart Coalition to use the questions in this study. The specific questions were taken from the 2008 Jump$tart High School Survey based on the most common elements of nine distinct and separate programs designed for high school students. The nine programs considered were: (a) the National Endowment for Financial Education (NEFE), (b) the Jump$tart Coalition, (c) the Council for Economic Education, (d) Child and Youth Finance International, (e) Aflateen, (f) Boy Scout Personal Management Merit Badge requirements, (g) Jr. Achievement, (h) Girl Scout Personal Finance Badge requirements, and (i) the U.S. Treasury Department. The websites for each organization are listed in Appendix B. The nine concepts compiled from these sources were: (a) budgeting, (b) savings, (c) credit, (d) investments, (e) insurance or risk management, (f) taxes, (g) financial goals, (h) spending, and (i) banking and financial products. For example, the question on calculating a budget reads:

> David has just started a job that pays $2,000 a month after taxes and deductions. He needs to pay $900 for rent, $150 for groceries, and $250 on transportation. If he budgets $100 for clothes, $200 for dining out and $250 for everything else, how long will it take him to save $600?

Response options include: (a) 3 months; (b) 4 months; (c) 1 month; or (d) 2 months. The

question on credit reads:

> If your credit card is stolen and the thief charges $1,000 to your account and you
>
> notify your issuer as soon as you discover the problem, what is the maximum
>
> amount you will be required to pay under Federal law?

Response choices include: (a) $500; (b) $1,000; (c) $0; or (d) $50. The complete

questionnaire is included in Appendix A. One point was given for each correct answer

and incorrect answers received 0 points. The number of correct answers was totaled and

the scores, which ranged from 0 to 9, were calculated for each participant. The mean

score was 4.57 and the standard deviation was 1.60. Higher scores indicated a higher

level of objective financial knowledge.

Individual Financial Factors

Financial Behaviors

The financial behavior questions were developed based on the common elements

of the same programs discussed above, with the addition of a question on minimizing

income taxes. The questions measured a respondent's behaviors by eliciting a response to

nine questions regarding: (a) list of monthly expenses, (b) prioritizing disbursements of

family income based on needs, (c) saving money each month, (d) having obtained a

written copy of their credit report, (e) stock or mutual fund ownership, (f) having

purchased auto or homeowner's insurance, (g) paying ATM fees, (h) spending less than

is earned each month, and (i) having written financial goals. Examples of questions

included: (a) "Do you save money every month to a savings or cooperative account?"; (b)

"Have you written down your financial goals for this year?"; and (c) "Do you pay ATM

fees when you use your debit card?" which was reverse coded. If the respondent answered yes, the response was coded 1, otherwise 0. The summated score ranged from 0 to 9. The mean score was 5.78, and the standard deviation was 1.83. A higher score indicated a respondent's higher number of positive financial behaviors.

Financial Satisfaction

Financial satisfaction was measured by asking respondents to indicate their level of financial satisfaction on a 10-point Likert-type scale, ranging from one (*very dissatisfied*) to 10 (*very satisfied*). This item is similar to Joo and Grable's (2004) measurement of financial satisfaction and has been used in several previous studies (e.g., Archuleta, Britt, Tonn, & Grable, 2011; Archuleta, Grable, & Britt, 2013). As this measure is a one-item scale, no reliability data was available. The mean score was 5.09 and the standard deviation was 2.79. Robb and Woodyard (2011) used a similar 10-point Likert-type scale taken from the FINRA Financial Capability Survey. They reported a mean score of 5.63 with a standard deviation of 2.65.

Subjective Financial Knowledge

Subjective financial knowledge was assessed by asking respondents to indicate how they rate their own level of financial knowledge. This measurement was done on a Likert-type scale ranging from 1 (*lowest*) to 10 (*highest*), with a higher score indicating a higher level of financial knowledge (Gutter, 2010; Goldsmith & Goldsmith, 2006). As this measure is a one-item scale, no reliability data was available.

Financial Self-Efficacy Scale

Lown (2011) stated, "The development of a Financial Self-Efficacy Scale will help consumers and the professionals who serve them to identify pathways and barriers to productive personal financial management" (p. 55) and will help educators "understand, guide and motivate their students" (p. 56). The Financial Self-Efficacy Scale (FSES) developed by Lown (2011) measures an individual's level of efficacy in managing their personal finances and is composed of six items on a four-point Likert-type scale, ranging from 1 (*exactly true*) to 4 (*not at all true*). Scores can range from six to 24 with higher scores indicating a higher level of financial self-efficacy.

Examples of the questions included on the FSES were: (a) "It is hard to stick to my spending plan when unexpected expenses arise," and (b) "When faced with a financial challenge I have a hard time figuring out a solution." The reliability of the scale has been shown to be strong ($\alpha = .76$), although the author noted that due to the sample used in the research, it may be necessary to replicate the research in order to include a more diversified participant base and verify the high alpha coefficients.

Personal Finance Teaching Efficacy Beliefs Instrument

Bandura (1997) asserted efficacy beliefs apply to specific instructional activities. Previous studies use instruments that were designed to measure teaching efficacy beliefs for science and mathematics (Utley, Mosely, & Bryant, 2005; Enochs, Smith & Huinker, 2000; Enochs & Riggs, 1990). The Science Teaching Efficacy Beliefs Instrument (STEBI) was a 21-item instrument designed to measure a teacher's science teaching efficacy. Each item is measured on a five-point Likert-type scale. The summated scale was scored with a possible range of 21 to 105. The STEBI was modified to create the

Mathematics Teaching Efficacy Beliefs Instrument (MTEBI) (Utley et al.; Enochs, Smith & Huinker, 2000) by replacing the word "science" in the science teaching efficacy belief instrument with the word "mathematics" to create the MTEBI. The reliability of the scale, as measured by Cronbach's alpha (Utley, Mosely & Bryant, 2005), was not significantly affected.

In this study, the subject was personal finance; therefore the word "mathematics" was replaced with "personal finance". The Personal Finance Teaching Efficacy Beliefs Instrument (PFTEBI) was designed to measure a teacher's efficacy for teaching personal finance. The STEBI and MTEBI are composed of two subscales – specific subject teaching efficacy and subject specific outcome expectancy. Cronbach's alpha for the Personal Math Teaching Efficacy subscale (PMTE) in previous studies ranged from .77 to .88 (Enochs, Smith, & Huinker, (2000); Evans, 2001). Cronbach's alpha for the Personal Science Teaching Efficacy (PSTE) in previous studies ranged from .88 to .91 (Utley, Mosley & Bryant, 2005).

Cronbach's alpha for the Math Teaching Outcome Expectancy subscale (MTOE) in previous studies ranged from .77 to .82 (Enochs, Smith, & Huinker, (2000); Utley, Mosley & Bryant, 2005). Cronbach's alpha for the Science Teaching Outcome Expectancy (PSOE) in previous studies ranged from .64 to .84 (Utley, Mosley & Bryant, 2005; Evans, 2001). These results show the reliability has been moderate to high across various studies and between mathematics and science.

Analysis

Data obtained from teachers in Puerto Rico were analyzed for this study. SPSS 18.0 (2009) statistical software was used to assist in the analyses. Principal Components

Analyses were run on each of the three scales used in the study to evaluate the construct validity of the scales. Correlation analysis, using Pearson product-moment correlation coefficient, was used to determine the relationship between each variable in the 37 hypotheses. Hierarchical multiple regression methods were used to test Research Questions 1 and 2. Binary logistic regression was used to test Research Question 3. These analyses were used to evaluate the strength of the independent variables on subjective financial knowledge, objective financial knowledge, and personal finance teaching efficacy beliefs (i.e., dependent variables). A description of each method used follows.

Factor Analyses

Principal Components Analysis was conducted on the Teacher Efficacy Scale, Financial Self-Efficacy Scale, and the Personal Finance Beliefs Instrument to evaluate the construct validity of the scale. Factor analysis was used to identify commonalities among variables. Factor analysis has three primary functions: (a) to understand the structure of the variable set, (b) to construct a questionnaire to measure the variables, and (c) to reduce the data set to a manageable size while losing as little of the original information as possible (Field, 2005). The results will be compared to the results obtained in other studies as previously described.

Principal Components Analysis (PCA) was conducted on the Financial Self-Efficacy Scale as described by Lown (2010). As only one factor was extracted, no rotation was performed. As discussed above, construct validity was confirmed with the data from this study.

Principal Components Analysis with varimax rotation and Kaiser normalization was performed on the Teacher Efficacy Scale (TES) in order to verify whether the

subscales were independent and to confirm the factor structure (Tschannen-Moran, Woolfolk-Hoy & Hoy, 1998). Two factors (subscales), the General Teaching Efficacy (GTE) and the Personal Teaching Efficacy (PTE) were confirmed for the TES. The relationship between the subscales was tested with the Pearson Correlation Coefficient test in order to verify that correlations were not significant and the subscales were two separate constructs (Ramey-Gassert et al., 1996). As discussed above, construct validity was confirmed with the data from this study.

Principal Components Analysis with varimax rotation and Kaiser normalization was performed on the Personal Finance Teaching Beliefs Instrument (PFTEBI) (Enoch, Smith, & Huinker, 2000; Enochs & Riggs, 1990). These analyses were performed in order to verify the subscales for the PFTEBI were independent and to confirm the factor structure (Field, 2005). Although two subscales or factors (i.e., Personal Finance Teaching Efficacy and Personal Finance Teaching Outcome Expectancy) were expected for the PFTEBI, three factors (i.e., subscales) emerged. The Personal Finance Teaching Outcome Expectancy (PFTOE) subscale corresponded to previous studies in the literature. The Personal Finance Teaching Efficacy (PFTE) subscale did not emerge from the data as reported in previous studies (Enoch, et. al., 1996). The data in this study revealed two personal finance teaching efficacy factors. These factors are comprised of the items that had been reported in the PFTE subscale. As reported earlier, construct validity was confirmed for the two factors, PFTE1 and PFTE2, with the data from this study. The relationship between the subscales was tested with the Pearson Correlation Coefficient in order to verify that correlations were not significant and the subscales were two separate constructs (Ramey-Gassert et al.).

Correlation Analyses

Correlational analyses were used to test various assumptions required in multiple regression analysis. The assumptions tested were: (a) the normality of the frequency distributions; (b) the variance of the frequency distributions; (c) the independence of the cases; and (d) the multicollinearity of the independent variables (Spicer, 2005). Multicollinearity issues were measured by: (a) calculating the variance inflation factors for each independent variable; (b) calculating the tolerance levels of each independent variable; (c) visually inspecting the correlation matrix; (d) visually inspecting the histogram and the normal P-P plot of the standardized residuals; and (e) calculating the Durbin-Watson statistic for each of the regression analyses for Research Question 1 and Research Question 2.

Regression Analyses

Hierarchical multiple regression analyses were used to address Research Questions 1 and 2. Binary Logistic regression was performed to address Research Question 3.The purpose of using hierarchical multiple regression was to follow the Personal Finance Education Efficacy Model (Figure 2.2) and enter each set of independent variables in blocks (i.e., personal financial variables, personal teaching variables, and demographic and socioeconomic variables). Hierarchical multiple regression analysis can provide information about the power of predicting variables (Studenmund, 2006). Hierarchical multiple regression analysis measured the adjusted R^2 of the model to determine the portion of the variance of the dependent variables in Research Questions 1 (i.e., objective financial knowledge) and 2 (i.e., subjective financial knowledge) that was accounted for by the model. Each of the independent variables was

measured with the Pearson correlation coefficient for its strength in predicting the dependent variable on an individual basis and as part of the overall model (Field, 2005). Inclusion in the overall model provided insight as to the effects the variables may have on each other when measuring the strength of predictability of the dependent variable.

Binary logistic regression analysis was used to test Research Question 3 in order to predict which of two categories a person is likely to belong, given certain information (Field, 2005). The dependent variable (i.e., level of personal finance teaching efficacy) was dichotomized to create two categories—one for a high level of personal finance teaching efficacy belief and one for a low level of personal finance teaching efficacy belief. The responses to the scale questions were summated to determine the total possible score. The total possible score was divided by three and the result was multiplied by two in order to determine the cut off point for the top third scores. Any score above this result (i.e., in the top third) was coded 1, otherwise 0. By looking at the variables and their relation with the high level of personal finance teaching efficacy, the researcher observed the variables that may predict inclusion in the top third. The top third was selected due to the need to identify teachers who have a higher level of personal finance teaching efficacy and not simply "above average" teachers. Several researchers have shown a statistically significant relationship between a one standard deviation increase in teacher quality and an increase in student achievement (Rivkin, Hanushek, & Kain, 2005; Aaronson, Barrow, & Sander, 2007; Chetty, Friedman, & Rockoff, 2011; Rockoff, 2004; Nye, Konstantopoulos, & Hedges, 2006). The top third score of 70 (or higher) is approximately a one standard deviation increase over the average score.

The binary logistic regression analysis measures the log-likelihood of the model to assess the fit of the model. The Wald statistic was calculated to determine the individual contributions of the predictors in the model. The *exp b* was calculated to understand the effects on the change in odds, resulting from a one unit change in the predictor (Field, 2005). Each of the independent variables was measured for its strength in predicting the dependent variable on an individual basis and as part of the overall model (Rahman, 2013). Inclusion in the overall model provided insight as to the effects the variables may have on each other when measuring the strength of predictability on the dependent variable

Summary

The purpose of this study was to explore the capacity of teachers to teach personal finance to high school students. There are few studies that examine teacher preparedness to teach personal finances. This study incorporates teaching efficacy and subject-specific teaching efficacy as measurements of teacher preparedness. Efficacy has been shown to have a positive impact on teaching behaviors and student achievements (Henson, Kogan, & Vacha-Haase, 2001). This study, therefore, continues to build on the limited body of knowledge of personal finance teaching.

In summary, primary data was collected from teachers in Puerto Rico via an electronic survey in Spanish and English. Several methods were used to increase survey response rates in order to have a sample large enough to observe and measure. The survey included three efficacy scales that measured teaching efficacy, financial self-efficacy, and personal finance teaching efficacy. The efficacy scales were validated by

conducting principal component analysis to determine the factor structure of the scale. The results obtained from this data were comparable to previous research.

The data were analyzed under three research questions related to: (a) understanding the variables that determine objective financial knowledge; (b) understanding the variables that determine subjective financial knowledge; and (c) understanding the variables that determine the level of personal finance teaching efficacy. Thirty-seven hypotheses were developed from these three research questions to evaluate and measure the relationship between the dependent and independent variables.

Hierarchical multiple regression analysis was used to determine the strength of the model and measure the significant variables in the model for Research Questions 1 and 2. The third research question was measured through the application of binary logistic regression analysis with hierarchical entry to determine the strength of the model and measure the significant variables in the model. The current study measured financial behavior and financial knowledge through a series of questions on financial activities that high school students are required or recommended to learn pursuant to the core competencies for high school students. Teacher competence and efficacy are important considerations in education because competence and efficacy have been linked to higher achieving students. Berliner (2000) stated that the teacher "models and instructs the students in learning and self-regulation activities" (p. 367). This is further indication that teacher knowledge and behavior are important elements in student learning (Henson et al., 2001).

Chapter 4 - Results

Data were obtained by e-mailing invitations to participate in the on-line survey to 2,918 teachers across Puerto Rico. A total of 675 surveys were started by respondents. Of those 675 surveys, 316 were fully completed, making up the final sample (n=316). The response rate is difficult to measure exactly as the number of people who responded to the general invitations is unknown. Using only the direct invitations as a base, the response rate can be calculated at 23% (675/2,918) and the usable response rate is calculated at 11% (316/2,918).

Sample Characteristics

Demographic and Socioeconomic

The complete descriptive statistics and their respective coding are shown in Table 4.1. The sample consisted primarily of females (87%). The average age of respondents was 45 ($SD = 9.5$) years and slightly more than half of the sample was married (55%). Seventy-eight percent of the respondents owned their own home. Most of the sample had received at least some level of graduate level education (74 %). These statistics compare with published reports (Mattei & Sanchez-Ayendez, 2007) on the teacher population in Puerto Rico where 79% are female, the average age is 43, 67% of teachers are married, 86% own their own home and the average salary is $30,671. Eighty-three percent (n = 263) of respondents indicated they work in public schools (83.2%) and the remaining 16.2% (n = 53) indicated they work in private schools. Respondents indicated household gross income ranged from $20,000 or less to over $100,000 with an average household gross income of $32,433 ($SD = 1.15$). Of the 316 respondents, 88.6% (n = 280) have been

teaching for five years or less and the remaining 11.4% (n = 36) have been teaching for at least six years. One hundred ninety of the respondents indicated they had taken a course in personal finances (M = .40, *SD* = .49). Seventy of the 78 municipal towns (89.74%) were represented in the study with 27.85% of the respondents originating from the five towns that comprised the greater San Juan metropolitan area: a) 11.39% from San Juan (n = 36), b) 5.38% from Carolina (n = 17), c) 4.11% from Caguas (n = 13), d) 3.80% from Bayamon (n = 12), and e) 3.16% from Guaynabo (n = 10). Eight towns (10.86%) were not represented in the sample.

Table 4.1 Sample Characteristics

Variable and Codes	N	M	SD
Gender	316	.87	.34
Male = 0			
Female = 1			
Age	316	45.00	9.50
Marital Status	316	.55	.50
Married = 1			
Single, Separated, Living with someone, not married = 0			
Level of Education	316	.74	.44
High School Diploma, Associate's Degree, Bachelor's Degree = 0			
Some Graduate School, Master's Degree, Ph.D., Other = 1			
Home Ownership	316	.79	.41
Yes =1			
Rent, Live in a home that is not yours and you pay no rent = 0			
Household Gross Income	316	2.78	1.15
Less than $20,000 = 1			
$20,001 to $35,000 = 2			
$35,001 to $50,000 = 3			
$50,001 to $75,000 = 4			
$75,001 to $100,000 = 5			
More than $100,000 = 6			
Teach in Public or Private School	316	.83	.37
Public = 1			
Private = 0			
Years teaching	316	4.65	5.90
Taken Course in Personal Finance	316	.40	.49
No = 0			
Yes = 1			

Objective Financial Knowledge

Objective financial knowledge was measured by the respondents indicating the

correct response to nine true or false questions. The responses were summated to

establish the respondents' total scores. Correct responses were coded 1, whereas incorrect responses were coded 0. Respondents' scores ranged from 0 to 8; the average score was 4.57 (SD = 1.61). Only three questions were answered correctly by more than 65% of the respondents: (a) Question 6 scored 95% (n = 300), (b) Question 3 scored 91% (n = 288), and (c) Question 4 scored 81% (n = 257). Question 1, which deals with numeracy, was answered correctly by the fewest number of respondents. Only 24% of the respondents (n = 75) answered this question correctly. Question 2, which also deals with numeracy but was more of an intuitive response and not a calculation, was answered correctly by 45% of the respondents (n = 141).

Teacher Efficacy Scale

The descriptive statistics for the Teacher Efficacy Scale responses are shown in Table 4.2. Total scores ranged from 25 to 55 with an average score of 39.52 (SD = 5.83). Respondents scaled their level of teaching efficacy on a six-point Likert-type scale, ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Items 1, 2, 4, 5, and 10 were reverse coded in order for the higher score to reflect a higher level of teacher efficacy.

Factor Analysis Results

In order to confirm the validity of the Teacher Efficacy Scale (TES), a principal component factor analysis with varimax rotation and Kaiser normalization was conducted in SPSS 18. When the factor analysis was confined to two factors, as previously reported in the literature, the two subscales measuring General Teaching Efficacy (GTE) and Personal Teaching Efficacy (PTE) emerged. Table 4.2 shows the variables loading on each of the two factors.

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Table 4.2 Factor Analysis of Teacher Efficacy Scale

	Factor 1	Factor 2
4. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.	**.826**	.081
2. If students aren't disciplined at home, they aren't likely to accept any discipline.	**.742**	.042
10. When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment.	**.724**	.071
5. If parents would do more for their children, I could do more.	**.634**	-.130
1. The amount a student can learn is primarily related to family background.	**.528**	-.216
9. If I really try hard, I can get through to even the most difficult or unmotivated student. (reverse coded)	.068	**.809**
7. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him/her quickly. (reverse coded)	-.026	**.742**
3. When I really try, I can get through to most difficult students. (reverse coded)	.135	**.697**
8. If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty. (reverse coded)	-.111	**.642**
6. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson. (reverse coded)	-.208	**.562**

The items which loaded on the General Teaching Efficacy subscale (GTE), were: (a) the amount a student can learn is primarily related to family background; (b) if students aren't disciplined at home, they aren't likely to accept any discipline; (c) a teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement; (d) if parents would do more for their children, I could do more; and (e) when it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment. Cronbach's alpha was calculated at .74 for the GTE subscale.

The items which loaded on the Personal Teaching Efficacy subscale (PTE), were: (a) when I really try, I can get through to most difficult students; (b) if a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson; (c) if a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him/her quickly; (d) if one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty; and (e) if I really try hard, I can get through to even the most difficult or unmotivated student. Cronbach's alpha was calculated at .73 for the PTE subscale.

Financial Satisfaction, Subjective Financial Knowledge

Respondents scaled their level of financial satisfaction on a 10-point Likert-type scale, ranging from 1 (*very dissatisfied*) to 10 (*very satisfied*). Financial satisfaction scores ranged from 1 to 10 with an average score of 5.09 ($SD = 2.79$). Respondents scaled their level of subjective financial knowledge on a ten-point Likert-type scale, ranging from 1 (*lowest*) to 10 (*highest*). Subjective financial knowledge scores ranged

from 1 to 10 with an average score of 5.83 (*SD* = 2.42). The descriptive statistics for the

financial satisfaction and subjective financial knowledge characteristics of the

respondents are shown in Table 4.3.

Table 4.3 Characteristics of Scales for Sample

Variable and Codes	Coding	*N*	*M*	*SD*
Objective financial knowledge	1 = Yes	316	4.57	1.61
Range = 0 – 8	0 = No			
Teacher Efficacy Scale	1 = Strongly agree	316	39.52	5.83
Range = 25 – 55	6 = Strongly disagree			
Financial satisfaction	1 = Very dissatisfied	316	5.09	2.79
Range = 1 – 10	10 = Very satisfied			
Subjective financial knowledge	1 = Lowest level	316	5.83	2.42
Range = 1 – 10	10 = Highest level			
Financial Self-Efficacy Scale	1 = Exactly true	316	14.28	3.72
Range = 6 – 23	4 = Not at all true			
Financial behaviors	1 = Yes	316	5.78	1.83
Range= 0 – 9	0 = No			
Personal Finance Teaching	1 = Strongly disagree	316	63.11	9.34
Efficacy Belief Scale	5 = Strongly agree			
Range = 29 – 88				

Financial Self-Efficacy

The descriptive statistics for the Financial Self-Efficacy Scale responses of the

respondents are shown in Table 4.4. Total scores ranged from 6 to 23 with an average

score of 14.28 (*SD* = 3.72). Respondents scaled their level of financial self-efficacy on a

four-point Likert-type scale, ranging from 1 (*exactly true*) to 4 (*not at all true*).

Table 4.4 Factor Analysis of Financial Self-Efficacy Scale

Item	Factor
When faced with a financial challenge, I have a hard time figuring out a solution.	.769
It is hard to stick to my spending plan when unexpected expenses arise.	.750
It is challenging to make progress toward my financial goals.	.709
I lack confidence in my ability to manage my finances.	.660
When unexpected expenses occur I usually have to use credit.	.637
I worry about running out of money in retirement.	.618

Factor Analysis

In order to confirm the validity of the Financial Self-Efficacy Scale (FSES), a principal components analysis was conducted in SPSS 18. The reliability of this scale compared favorably to published reports. The FSES contained only one factor so the solution could not be rotated. Table 4.4 shows the variables loading on the factor. Cronbach's alpha was calculated at .78 for the FSES scale.

Financial Behaviors

The descriptive statistics for the financial behaviors of the respondents are shown in Table 4.3. Financial behaviors were measured by the respondents indicating whether they performed a financial behavior where yes was coded 1, otherwise 0. The responses were summated to establish the respondents' total scores. The total scores ranged from 0 to 9 (n = 316) with an average score of 5.78 (*SD* = 1.83). There is no set of universally accepted financial behavior questions, so this study did not look at the individual

financial behaviors. The behaviors used were taken from a cross section of financial education programs and the resulting reliability measure was not strong ($\alpha = .582$).

Personal Finance Teaching Efficacy Beliefs

The descriptive statistics for the Personal Finance Teaching Efficacy Beliefs Instrument responses are shown in Table 4.3. Respondents scored their level of teaching efficacy on a five-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The responses from each question were summated and ranged from 29 to 88 with an average score of 63.11 ($SD = 9.34$). Thirteen items were reverse coded in order for the higher score to reflect a higher level of personal finance teaching efficacy beliefs. The questions that were reverse coded are indicated in Table 4.5.

Factor Analysis Results

In order to confirm the validity of the Personal Finance Teaching Efficacy Beliefs Instrument (PFTEBI), a principal component analysis with varimax rotation and Kaiser normalization was conducted in SPSS 18. Pursuant to the literature, the principal components analysis was confined to two factors in an attempt to corroborate previous research results. With a two factor limitation, 53% of the non-redundant residuals had absolute values of greater than .05. When 50% or more of the non-redundant residuals are greater than .05, there is cause for concern (Fields, 2005). As a result, the two-factor structure was discarded.

Since the results for the two-factor structure raised concerns, a principal component analysis was conducted, expanding the structure to three factors. The three-factor structure explained 48.60% of the variance in the scale. When the factor analysis was confined to three factors, only 40% of the non-redundant residuals were greater than

.05 for the PFTEBI with three subscales, thus removing the cause for concern regarding the non-redundant residuals as described by Fields (2005).

The Personal Finance Teaching Outcome Expectancy factor (PFTOE) was originally described as pertaining to what the teacher can expect in the relationship with the students (Enochs et. al., 2000). The questions that loaded onto this factor were those expressed in the third-person singular. The questions, which loaded on the PFTOE factor, were: (a) when a student does better than usual in personal finance, it is often because the teacher exerted a little extra effort; (b) when the personal finance grades of students improve, it is often due to their teacher having found a more effective teaching approach; (c) if students are underachieving in personal finance, it is most likely due to ineffective personal finance teaching; (d) the inadequacy of a student's personal finance background can be overcome by good teaching; (e) when a low achieving child progresses in personal finance, it is usually due to extra attention given by the teacher; (f) the teacher is generally responsible for the achievement of students in personal finance; (g) students' achievements in personal finance is directly related to their teacher's effectiveness in personal finance teaching; and (h) if parents comment that their child is showing more interest in personal finance at school, it is probably due to the performance of the child's teacher. As previously reported, the reliability for this scale was strong (Cronbach's $\alpha =$ .82). Cronbach's alpha could be improved to .83 by removing two questions from the scale. The questions removed were: (a) if students are underachieving in personal finance, it is most likely due to ineffective personal finance teaching, and (b) the inadequacy of a student's personal finance background can be overcome by good teaching.

The Personal Finance Teaching Efficacy factor (PFTE) was originally described as pertaining to what the teacher can control in the relationship with the students (Enochs et al., 2000). The questions that loaded onto this factor were those expressed in the first-person singular (Enochs et al., 2000). The results of the principal components analysis using varimax rotation and Kaiser normalization showed that two separate factors emerged from the data in the study within the group of questions that were expressed in the first-person singular. The Personal Finance Teaching Efficacy 1 factor (PFTE1) that emerged as described in previous studies was comprised of the following seven questions, all in the first person singular, which pertained to the control a teacher has in managing the student experience. These questions were reverse coded in order for the higher score to reflect a higher level of personal finance teaching efficacy. The questions that loaded onto this factor were: (a) I do not try to be very effective in monitoring personal finance activities; (b) I generally teach personal finance ineffectively; (c) I find it difficult to use manipulatives to explain to students why personal finance works; (d) given a choice, I do not invite the principal to evaluate my personal finance teaching; (e) when a student has difficulty understanding a personal finance concept, I am usually at a loss as to how to help the student understand it better; (f) I do not know what to do to turn students on to personal finance; and (g) when teaching personal finance, I usually welcome student questions.

Although the questions were expressed in first-person singular, the questions that comprised the third factor appeared to be concerned with concepts and not specific actions regarding the teaching of personal finances. The questions were: (a) I continually find better ways to teach personal finance; (b) I know how to teach personal finance

concepts effectively; (c) I understand personal finance well enough to be effective in teaching high school level personal finance; and (d) I am typically able to answer students' questions. These questions form the new subscale, Personal Finance Teaching Efficacy 2 factor (PFTE2). Table 4.5 shows the variables loading on each of the three factors. In order to test the reliability of the scores of the subscales, Cronbach's alpha was calculated for each subscale. For this study, the PFTE1 Cronbach's alpha was calculated at .79, and the PFTE2 Cronbach's alpha was calculated at .81.

Table 4.5 3-Factor Analysis of Personal Finance Teaching Efficacy Beliefs Instrument

	Factor 1	Factor 2	Factor 3
Q14. If parents comment that their child is showing more interest in personal finance at school, it is probably due to the performance of the child's teacher.	**.760**	.000	.221
Q13. Student achievement in personal finance is directly related to their teacher's effectiveness in personal finance teaching.	**.746**	-.044	.162
Q10. When a low achieving child progresses in personal finance, it is usually due to extra attention given by the teacher.	**.739**	.065	.146
Q4. When the personal finance grades of students improve, it is often due to their teacher having found a more effective teaching approach.	**.682**	-.025	.064
Q12. The teacher is generally responsible for the achievement of students in personal finance.	**.664**	.023	.241

Q1. When a student does better than usual in personal finance, it is often because the teacher exerted a little extra effort.	**.637**	.103	.236
Q9. The inadequacy of a student's personal finance background can be overcome by good teaching.	**.524**	-.184	-.063
Q19. When a student has difficulty understanding a personal finance concept, I am usually at a loss as to how to help the student understand it better. (reverse coded)	.077	**.751**	-.264
Q18. Given a choice, I do not invite the principal to evaluate my personal finance teaching. (reverse coded)	.045	**.731**	-.046
Q8. I generally teach personal finance ineffectively. (reverse coded)	-.065	**.711**	-.146
Q21. I do not know what to do to turn students on to personal finance. (reverse coded)	.001	**.646**	-.347
Q15. I find it difficult to use manipulatives to explain to students why personal finance works. (reverse coded)	-.046	**.639**	-.059
Q6. I do not try to be very effective in monitoring personal finance activities. (reverse coded)	.014	**.578**	.111

Q20. When teaching personal finance, I usually welcome student questions.	.287	**-.417**	.278
Q5. I know how to teach personal finance concepts effectively.	.230	-.139	**.820**
Q2. I continually find better ways to teach personal finance.	.222	-.102	**.739**
Q11. I understand personal finance well enough to be effective in teaching high school level personal finance.	.259	-.119	**.729**
Q16. I am typically able to answer students' questions.	.078	-.180	**.725**

Analyses for Hypotheses

Two hierarchical regressions were performed to test the hypotheses in Research Questions 1 and 2. Beta coefficients from the hierarchical multiple regression analyses were used to evaluate each of the hypotheses for each of the first two research questions to determine if a hypothesis was supported or not. Other assumptions regarding the data were tested to verify the data were within accepted parameters that would not weaken the strength and validity of the hierarchical regression analyses. Research question 3 was tested using binary logistic multiple regression analysis. The statistics were analyzed using SPSS 18.0.

Research Question 1

Research Question 1 asked how a teacher's level of objective financial knowledge is associated with a teacher's individual financial factors (i.e., financial behaviors, subjective financial knowledge, financial satisfaction, and financial self-efficacy), personal teaching factors (i.e., teaching efficacy and courses taken in personal finances), demographic factors (i.e., age, gender, and marital status), and socioeconomic factors (i.e., education level, income level, and home ownership).

Correlations among the independent variables were evaluated in SPSS. The correlation matrix shows there were no correlations above .58. Field (2005) indicated any correlation higher than .80, which would have been considered too high and not acceptable for use in the regression. Table 4.6 outlines the correlation matrix of the variables that were calculated in SPSS 18.

Table 4.6 Correlation Matrix of Independent Variables for Research Question 1

	Age	Gndr	Married	Home	Educ	Inc	TES	Course	FinSat	FB	FSES
Age											
Gndr	-.175**										
Married	.108*	-.081									
Home	.345**	-.016	.235**								
Educ	.107*	-.143*	.006	.064							
Inc	.234**	-.171**	.401**	.277**	.186**						
TES	-.045	.070	.024	.068	.075	.035					
Course	.141*	-.092	-.003	.182**	.080	.080	.101*				
FinSat	.109*	-.107**	.184**	.286**	.068	.246**	.142*	.272**			
FB	.223**	-.113*	.144*	.188**	.151*	.194**	.133*	.235**	.412**		
FSES	.081	-.060	.183**	.201**	.046	.163*	.235**	.182**	.544**	.466**	
FinKnow	.194**	-.262**	.122*	.164*	.131*	.174**	.113*	.366**	.557**	.487**	.463**

** Correlation is significant at the .01 level (2-tailed)

* Correlation is significant at the .05 level (2-tailed)

There were several assumptions made regarding the hierarchical multiple regression analysis, which included the normality of the frequency distributions, the variance of the frequency distributions, and the independence of the cases. Each of these assumptions was tested to verify the data were within accepted parameters.

Variance inflation factors (VIF) and tolerance figures were calculated in SPSS 18 to measure the level of multicollinearity of the variables in this regression. The highest VIF score observed was 1.87, which is well within the general guidelines of less than four, as reported in the literature (O'Brien, 2007). The average VIF for the first block is 1.74, for the first and second blocks it is 1.54, and for the three blocks together it is 1.39. These averages are within published guidelines (Field, 2005). Refer to Appendix M for the complete list of VIF and tolerance results. The histogram revealed that residuals were fairly normally distributed (see Appendix M). Visual observations of the normal P-P plots (see Appendix M) confirmed the normality of the residuals distribution, adding strength to the assumption the data are distributed normally. The final verification regarding the independency of the residual scores was performed by calculating the Durbin-Watson statistic. Spicer (2005) asserted that the more this statistic deviates from 2, the higher the likelihood the residuals are not independent. Field (2005) indicated the value may fall between one and three and be acceptable. The Durbin-Watson statistic was calculated at 1.828.

Research Question 1 was tested with hierarchical multiple regression analysis. Each set of independent variables (i.e., personal financial variables, personal teaching variables, and demographic and socioeconomic variables) was entered in blocks to test

the strength of the model's ability to predict the variance in the dependent variable (i.e., objective financial knowledge). The empirical model is:

$$\text{FK}_i = b_0 + b_9\text{FinSat}_i + b_{10}\text{FinKnow}_i + b_{11}\text{FB}_i + b_{12}\text{FSES}_i + b_7\text{FnTrng}_i + b_8\text{TES}_i +$$

$$b_1\text{Age}_i + b_2\text{Gndr}_i + b_3\text{Married}_i + b_4\text{Ownhome}_i + b_5\text{Income}_i + b_6\text{Edu}_i$$

The personal financial variables of financial satisfaction, subjective financial knowledge, financial behaviors, and financial self-efficacy were entered in the first step of the hierarchical regression analysis. The personal teaching variables of teacher efficacy and having taken a course in personal finances were entered into the second step of the hierarchical regression analysis. The demographic and socioeconomic variables of age, gender, homeownership, income level, marital status and level of college education were entered into the third step of the hierarchical regression analysis. Results are shown in Table 4.7.

Table 4.7 Hierarchical Multiple Regression Analysis Using Individual Variables Predicting Objective Financial Knowledge

Predictor	ΔR^2	B	SE	B
Step 1	.078***			
Constant		2.769	.379	
Financial satisfaction		-.049	.041	-.085
Financial behaviors		.058	.058	.066
Subjective financial knowledge		.094	.047	.142*
Financial self-efficacy		.082	.030	.189**
Step 2	.001			
Constant		2.952	.652	
Financial satisfaction		-.051	.041	-.089
Financial behaviors		.057	.058	.065
Subjective financial knowledge		.088	.048	.132
Financial self-efficacy		.084	.030	.195**
Teacher efficacy		-.005	.016	-.019
Financial training		.110	.194	.033
Step 3	.018			
Constant		2.724	.828	
Financial satisfaction		-.060	.043	-.104
Financial behaviors		.044	.059	.050
Subjective financial knowledge		.071	.050	.107
Financial self-efficacy		.087	.031	.202**
Teacher efficacy		-.001	.016	-.003
Financial training		.101	.196	.031
Married		-.005	.197	-.002
Own home		-.046	.245	-.012
Education		-.173	.208	-.407
Income		.219	.204	.068
Gender		-.341	.279	-.072
Age		.013	.010	.076

*** Correlation is significant at the .001 level (2-tailed)
** Correlation is significant at the .01 level (2-tailed)
* Correlation is significant at the .05 level (2-tailed)

Step 1, which included the personal financial variables of financial satisfaction, subjective financial knowledge, financial behaviors, and financial self-efficacy, was found to be significant ($F = 6.56$, $\rho < .001$) and accounted for 7.8% of the variance in objective financial knowledge. Hypothesis 9 (teachers who have higher levels of financial satisfaction will have a higher level of objective financial knowledge), hypothesis 10 (teachers who practice a higher number of positive financial behaviors will have a higher level of objective financial knowledge), hypothesis 11 (teachers who have a higher level of financial self-efficacy will have a higher level of objective financial knowledge), and hypothesis 12 (teachers who have a higher level of subjective financial knowledge will have a higher level of objective financial knowledge) were supported.

Step 2, which added personal teaching variables of teacher efficacy and having taken a course in personal finances, was found to be significant ($F = 4.42$, $\rho < .001$) and accounted for 7.9% of the variance in objective financial knowledge. Hypotheses 7 (teachers who have a higher level of teaching efficacy will have a higher level of objective financial knowledge), 8 (teachers who have taken more courses in personal finance will have a higher level of objective financial knowledge), 9 (teachers who have higher levels of financial satisfaction will have a higher level of objective financial knowledge), and 10 (teachers who practice a higher number of positive financial behaviors will have a higher level of objective financial knowledge), were not supported. With the addition of the personal teaching variables, hypothesis 11 (teachers who have a higher level of financial self-efficacy will have a higher level of objective financial knowledge) was supported. Hypothesis 12 (teachers who have a higher level of

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subjective financial knowledge will have a higher level of objective financial knowledge) was no longer supported.

Step 3, which added the demographic and socioeconomic variables, was found to be significant ($F = 2.71$, $\rho < .05$) and accounted for 9.7% of the variance in objective financial knowledge. After controlling for demographic and socioeconomic variables, the only variable found to be significant ($\rho < .05$) was financial self-efficacy. Therefore, hypothesis 11, (teachers who have a higher level of financial self-efficacy will have a higher level of objective financial knowledge) was supported. Hypotheses 1 through 10 and 12 were rejected.

Research Question 2

Research Question 2 asked how a teacher's level of subjective financial knowledge is associated with a teacher's individual financial factors (i.e., financial behaviors, subjective financial knowledge, financial satisfaction, and financial self-efficacy), personal teaching factors (i.e., teaching efficacy and courses taken in personal finances), demographic factors (i.e., age, gender, and marital status), and socioeconomic factors (i.e., education level, income level, and home ownership)?

Correlation of the independent variables was evaluated in SPSS. The correlation matrix shows there were no correlations above .55. Field (2005) indicated that any correlation higher than .80 would have been considered too high and not acceptable for use in the regression. Table 4.8 outlines the correlation matrix of the variables that were calculated in SPSS 18.

Table 4.8 Correlation Matrix of Independent Variables for Research Question 2

	Age	Gndr	Married	Home	Educ	Inc	Course	FKTotal	TES	FinSat	FB
Gndr	-.175*										
Married	.108*	-.081									
Home	.345**	-.016	.235**								
Educ	.107*	-.143**	.006	.064							
Inc	.234**	-.171*	.401**	.277**	.186**						
FinTrng	.141**	-.092	-.003	.182**	.080	.080					
FKTotal	.137**	-.121*	.075	.074	.009	.124*	.107*				
TES	-.045	.070	.068	.068	.075	.035	.101*	.041			
FinSat	.109*	-.170*	.184**	.286**	.068	.246**	.272**	.124*	.142*		
FB	.223**	-.113*	.144**	.188**	.151**	.194**	.235**	.189**	.133*	.412**	
FSES	.081	.183**	.183**	.201**	.046	.163**	.182**	.240**	.235**	.544**	.466**

** Correlation is significant at the .01 level (2-tailed)

* Correlation is significant at the .05 level (2-tailed)

There were several assumptions made regarding the multiple regression analysis, which included the normality of the frequency distributions, the variance of the frequency distributions, and the independence of the cases. Each of these assumptions was tested to verify the data were within accepted parameters. Analysis of the VIF and tolerance figures revealed that none of the VIF scores was higher than four. The average VIF for the first block was 1.227, for the first and second blocks was 1.187, and for the three blocks together was 1.290. Refer to Appendix N for the complete list of VIF and tolerance calculations. The histogram of the standardized residuals for the dependent variable (i.e., objective financial knowledge) showed the residuals were fairly normally distributed. Visual observations of the normal P-P plots (see Appendix N) confirmed the normality of the residuals distribution, thus adding strength to the assumption the data are distributed normally. The final verification regarding the independency of the residual scores was performed by calculating the Durbin-Watson statistic, which was 1.830.

Research Question 2 was tested with hierarchical multiple regression analysis (Field, 2005). Each set of independent variables (i.e., personal financial variables, personal teaching variables, and demographic and socioeconomic variables) was entered in blocks to test the strength of the model's ability to predict the variance in the dependent variable (i.e., subjective financial knowledge). The empirical model is:

$$\text{FinKnow}_i = b_0 + b_9\text{FinSat}_i + b_{11}\text{FB}_i + b_{12}\text{FSES}_i + b_7\text{FnTrng}_i + b_8\text{TES}_i + b_{10}\text{FK}_i +$$
$$b_1\text{Age}_i + b_2\text{Gndr}_i + b_3\text{Married}_i + b_4\text{Ownhome}_i + b_5\text{Income}_i + b_6\text{Edu}_i$$

The personal financial variables of financial satisfaction, financial behaviors, and financial self-efficacy were entered in the first step of the hierarchical regression analysis. The personal teaching variables of teacher efficacy, objective financial knowledge, and

having taken a course in personal finances were entered into the second step of the hierarchical regression analysis. The demographic and socioeconomic variables of age, gender, homeownership, income level, marital status, and level of college education were entered into the third step of the hierarchical regression analysis. Results are shown in Table 4.9.

Table 4.9 Hierarchical Multiple Regression Analysis for Individual Variables Prediction Subjective Financial Knowledge

Predictor	ΔR^2	B	SE	B
Step 1	.402***			
Constant		.862	.457	
Financial satisfaction		.324	.046	.373***
Financial behaviors		.358	.067	.271***
Financial self-efficacy		.087	.036	.135*
Step 2	.041***			
Constant		.773	.789	
Financial satisfaction		.291	.046	.335***
Financial behaviors		.310	.066	.234***
Financial self-efficacy		.079	.036	.121*
Teacher efficacy		-.007	.018	-.017
Objective financial knowledge		.121	.066	.080
Financial training		.944	.221	.191***
Step 3	.027***			
Constant		1.014	.972	
Financial satisfaction		.282	.047	.325***
Financial behaviors		.282	.067	.213***
Financial self-efficacy		.089	.036	.137*
Teacher efficacy		.000	.018	-.001
Objective financial knowledge		.095	.066	.063
Financial training		.909	.221	.184***
Married		.036	.227	.007
Own home		-.325	.283	-.055
Education		.202	.240	.037
Income		-.118	.236	-.024
Gender		-.991	.318	-.138**
Age		.016	.012	.061

*** Correlation is significant at the .001 level (2-tailed)
** Correlation is significant at the .01 level (2-tailed)
* Correlation is significant at the .05 level (2-tailed)

Step 1, which included the personal financial variables of financial satisfaction, subjective financial knowledge, financial behaviors, and financial self-efficacy, was found to be significant ($F = 69.806$, $\rho < .001$) and accounted for 39.6% of the variance in subjective financial knowledge. Hypotheses 21, (teachers with a higher level of financial satisfaction will have a higher level of subjective financial knowledge), 22, (teachers who practice a higher number of positive financial behaviors will have a higher level of subjective financial knowledge), and 23, (teachers who have a higher level of financial self-efficacy will have a higher level of subjective financial knowledge) were supported.

Step 2, which added personal teaching variables of teacher efficacy, objective financial knowledge, and having taken a course in personal finances, was found to be significant ($F = 40.850$, $\rho < .001$) and accounted for 44.2% of the variance in subjective financial knowledge. With the addition of the personal teaching variables, hypothesis 20 (teachers who have taken courses in personal finance will have a higher level of subjective financial knowledge) was supported. In addition, Hypotheses 21, 22, and 23 continued to be supported. Hypothesis 19, (teachers who have a higher level of teaching efficacy will have a higher level of subjective financial knowledge) and hypothesis 24 (teachers with a higher level of objective financial knowledge will have a higher level of subjective financial knowledge) were not supported.

Step 3, which added the demographic and socioeconomic variables, was found to be significant ($F = 22.341$, $\rho < .001$) and accounted for 44.8% of the variance in subjective financial knowledge. After controlling for demographic and socioeconomic variables, hypothesis 21 (teachers who have a higher level of financial satisfaction will have a higher level of subjective financial knowledge), hypothesis 22 (teachers who

practice a higher number of positive financial behaviors will have a higher level of subjective financial knowledge), hypothesis 23 (teachers who have a higher level of financial self-efficacy will have a higher level of subjective financial knowledge), hypothesis 20 (teachers who have taken courses in personal finance will have a higher level of subjective financial knowledge), and hypothesis 15 (male teachers have a higher level of objective financial knowledge) were supported. Hypothesis 13 (older teachers will have a higher level of subjective financial knowledge), hypothesis 14 (married teachers will have a higher level of subjective financial knowledge), hypothesis 16 (teachers who own their own home will have a higher level of subjective financial knowledge), hypothesis 17 (teachers who have a higher level of education will have a higher level of subjective financial knowledge), hypothesis18 (teachers who have a higher level of income will have a higher level of subjective financial knowledge), hypothesis 19 (teachers who have a higher level of teaching efficacy will have a higher level of subjective financial knowledge), and hypothesis 24 (teachers with a higher level of objective financial knowledge will have a higher level of subjective financial knowledge) were rejected.

The model for subjective financial knowledge appears to be a much stronger model, based on the observations from this population. This may be due to the type of independent variables used, as financial satisfaction, financial self-efficacy, general teaching efficacy, and personal teaching efficacy can be defined as belief variables. Financial behaviors could also be defined as a belief variable in that a person acts on what he or she believes is the correct course of action. The model is heavily weighted

with belief variables, as would be expected from using the social cognitive theory as the theoretical base for this study.

Research Question 3

Research Question 3 asked how a teacher's individual financial factors (i.e., financial behaviors, subjective financial knowledge, financial satisfaction, and financial self-efficacy), personal teaching factors (i.e., teaching efficacy and courses taken in personal finances), demographic factors (i.e., age, gender, marital status), and socioeconomic factors (i.e., education level, income level, home ownership) were able to predict if the teacher has a high level of personal financial teaching efficacy beliefs. Research Question 3 was tested using binary logistic multiple regression analysis to determine if the independent variables were predictors of high levels of Personal Finance Teaching Efficacy (i.e., PFTEBI), as described previously in the methods section. This is an important question to study as several researchers have shown a statistically significant positive relationship between increased teacher quality and increased student achievement (Rivkin, Hanushek, & Kain, 2005; Aaronson, Barrow, & Sander, 2007; Chetty, Friedman, & Rockoff, 2011; Rockoff, 2003; Nye, Konstantopoulos, & Hedges, 2004).

Correlation of the independent variables was evaluated in SPSS. The correlation matrix shows there were no correlations above .55. Field (2005) indicated that any correlation higher than .80 would have been considered too high and not acceptable for use in the regression. Table 4.10 outlines the correlation matrix of the variables that were calculated in SPSS 18.

Table 4.10 Correlation Matrix of Independent Variables for Research Question 3

	FB total	Fin Know	FinSat	FSEStotal	TES	Fin Trng(1)	FK Total	Married	Own Home	College (1)	Income(1)	GNDR(1)
FinKnow	.487**											
FinSat	.412**	.557**										
FSEStotal	.466**	.463**	.544**									
TES	.133**	.113*	.142*	.235**								
FinTrng(1)	.235**	.366**	.272**	.182**	.101							
FKTotal	.189**	.215**	.124*	.240**	.041	.107						
Married(1)	.144*	.122*	.184*	.183**	.024	-.003	.075					
OwnHome	.188**	.164**	.286**	.201**	.068	.182**	.074	.235**				
College(1)	.151**	.131*	.068	.046	.075	.080	.009	.006	.064			
Income(1)	.194**	.174**	.246**	.163**	.035	.080	.124*	.401*	.277**	.186*		
GNDR(1)	-.113*	-.262**	-.170**	-.060	.070	-.092	-.121*	-.081	-.016	-.143*	-.171*	
AGE	.223**	.194*	.109	.081	-.045	.141*	.137*	.108	.345**	.107	.234*	-.175*

** Correlation is significant at the .01 level (2-tailed)
* Correlation is significant at the .05 level (2-tailed)

Full PFTEBI Scale

Research Question 3 was tested with binary logistic multiple regression analysis using hierarchical entry (Field, 2005; Peng, Lee & Ingersoll, 2002) on the full Personal Finance Teaching Efficacy Belief Instrument. Each set of independent variables (i.e., personal financial variables, personal teaching variables, and demographic and socioeconomic variables) were entered in blocks to test the strength of the model's ability to predict the inclusion in the top one-third of the PFTEBI scores. The empirical model is

$$P(\text{High PFTEBI}) = 1/(1+e)^{-(b_0 + b_{10}\text{FinSat}_i + b_{11}\text{FinKnow}_i + b_{12}\text{FB}_i + b_{13}\text{FSES}_i + b_7\text{FnTrng}_i + b_8\text{TES}_i}$$
$$+ b_9\text{FK}_i + b_1\text{Age}_i + b_2\text{Gndr}_i + b_3\text{Married}_i + b_4\text{Ownhome}_i + b_5\text{Income}_i + b_6\text{Edu}_i)$$

The personal financial variables of financial satisfaction, financial behaviors, and financial self-efficacy were entered in the first step of the hierarchical logistic regression analysis. The personal teaching variables of teacher efficacy, objective financial knowledge, and having taken a course in personal finances were entered into the second step of the hierarchical logistic regression analysis. The demographic and socioeconomic variables of age, gender, homeownership, income level, marital status and level of college education were entered into the third step of the hierarchical logistic regression analysis.

The Log Likelihood Ratio (276.254) in Step 1, which included the personal financial variables of financial satisfaction, subjective financial knowledge, financial behaviors, and financial self-efficacy, was found to be significant at the $p < .001$ level. Results are shown in Table 4.11

The Log Likelihood Ratio (253.240) in Step 2, which included the personal financial variables (i.e. financial satisfaction, subjective financial knowledge, financial

behaviors, and financial self-efficacy) and the personal teaching variables (i.e., teacher efficacy, objective financial knowledge, and having taken a course in personal finances), was found to be significant at the $p < .001$ level. Results are shown in Table 4.11.

The Log Likelihood Ratio (250.220) in Step 3, which included the personal financial variables (i.e., financial satisfaction, subjective financial knowledge, financial behaviors, and financial self-efficacy) and the personal teaching variables (i.e., teacher efficacy, objective financial knowledge, and having taken a course in personal finances) and the demographic and socioeconomic variables (i.e., age, gender, homeownership, income level, marital status, and level of college education), was found to be significant at the $p < .001$ level. Results are shown in Table 4.11.

Table 4.11 Explanatory Variables in the Logistic Regression Model Predicting Personal Finance Teaching Efficacy

Variable	-2LL	Coefficient B	Wald	Exp(B) Odds Ratio	Lower	Upper
					95% C.I. for Exp(B)	
Step 0	346.334***					
Step 1	276.245***					
Constant		-5.678***	37.284	.003		
Fin Satisfaction		.019	.070	1.019	.887	1.170
Fin Behaviors		.264*	5.567	1.302	1.046	1.622
Subjective Fin Know		.535***	27.803	1.707	1.399	2.082
FSES		-.051	.949	.950	.858	1.053
Step 2	253.240***					
Constant		-5.978***	17.099			
Fin Satisfaction		-.017	.052	.983	.850	1.137
Fin Behaviors		.251*	4.619	1.285	1.022	1.616
Subjective Fin Know		.508***	22.169	1.661	1.345	2.052
FSES		-.073	1.587	.929	.829	1.042
Teacher efficacy		.043	2.441	1.044	.989	1.101
Fin Training (1)		-1.409***	18.704	.244	.129	.463
Objective Fin Know		.007	.005	1.007	.825	1.229
Step 3	250.220***					
Constant		-5.540	10.410	.004		
Fin Satisfaction		.001	.000	1.001	.860	1.165
Fin Behaviors		.286*	5.516	1.331	1.049	1.691
Subjective Fin Know		.537***	22.279	1.711	1.369	2.138
FSES		.088	2.191	.916	.816	1.029
Teacher efficacy		.041	2.100	1.041	.986	1.100
Fin Training (1)		-1.412***	18.089	.242	.125	.465
Objective Fin Know		.040	.142	1.041	.845	1.282
Married (1)		.010	.001	1.010	.508	2.008
Own Home (1)		-.192	.228	.825	.376	1.814
College (1)		.063	.017	1.065	.413	2.746
Income (1)		.187	.254	1.206	.582	2.498
Gender (1)		-.404	.731	.667	.264	1.686
Age		-.018	.897	.983	.948	1.019

*** Correlation is significant at the .001 level (2-tailed)
** Correlation is significant at the .01 level (2-tailed)
* Correlation is significant at the .05 level (2-tailed)

The model summary showed improvement in the Log Likelihood Ratio between the constant-only model and the final model in terms of overall fit. The chi-square statistic is significant ($x^2 = 96.114$, $\rho < .001$). Three measures of goodness-of-fit were calculated, Cox and Snell R^2, Nagelkerke R^2, and the Hosmer and Lemeshow test. The

first two are considered descriptive and the latter is considered inferential (Peng, Lee &

Ingersoll, 2002). As measured by Cox and Snell R^2, the goodness-of-fit was .262. As

measured by the Nagelkerke R^2, the goodness-of-fit was .394. Neither of these tests

provided results that are close to 1, meaning these tests appear to offer little confidence in

interpreting the model fit (Field, 2005). A better test is the Hosmer and Lemeshow test

(Peng, Lee & Ingersoll, 2002). Although prone to inflation as the sample size increases,

the results with this data showed the model is a good fit as indicated by a chi square of

11.766 ($\rho = .162$) (see Appendix O). As the result of this test is not statistically

significant, it would suggest the observed frequencies do not deviate from the expected

frequencies. The overall model correctly predicted inclusion of the respondent in the

appropriate category (i.e., high or low PFTEBI) 82.6% of the time, an improvement over

the chance level.

The individual variables included in the model were assessed for their strength of

predicting the outcome or dependent variable while holding the other variables constant.

Of the 13 variables included in the model, three were determined to have a significant

effect of predicting the outcome variable while controlling for the other variables. If any

variables are omitted from the model, this will change the interactions between the

variables. For example, when the model does not control for age, gender, or marital

status, the personal teaching efficacy coefficient becomes significant, as ρ decreases from

.131 to .008. Further study is needed to understand possible other determinants of

personal finance teaching efficacy beliefs.

To summarize, two variables in Block 1 (financial variables) had significant

estimated coefficients, subjective financial knowledge (B = .537, $\rho < .001$) and financial

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behaviors (B = .286, ρ < .05). The odds ratio for subjective financial knowledge indicates that with each increase of one unit of subjective financial knowledge, the odds of belonging to the high PFTEBI group increase by 33%, controlling for the other variables. In 95% of the samples drawn from this population, we can expect the interval from 1.369 to 2.138 to include the true parameter of the odds ratio. This is evidenced by the level of "subjective financial knowledge", after controlling for the other variables, where it predicts belonging to the high PFTEBI group better than chance alone. Hypothesis 34, (teachers who practice a higher amount of positive financial behaviors will have a higher level of personal finance teaching efficacy) is supported.

Only one variable in Block 2 (teaching variables) was found to be a significant predictor of belonging to the high PFTEBI group. The variable for financial training (i.e., having taken a course in personal finances) had a significant estimated coefficient (B = -1.412, ρ = .000). The odds ratio of .242 for financial training indicates that having taken a course in personal finances actually decreases the odds of belonging to the high PFTEBI group when controlling for the other variables. Therefore, hypothesis 32 (teachers who have taken courses in personal finance will have a higher level of personal finance teaching efficacy) is not supported.

No variables in Block 3 (demographic and socioeconomic) had a significant coefficient for predicting inclusion in the high PFTEBI group.

PFTEBI Subscales

Research Question 3 was tested with binary logistic multiple regression analysis using hierarchical entry (Field, 2005; Peng, Lee & Ingersoll, 2002) on each of the three

subscales of the PFTEBI (i.e., Personal Finance Teaching Outcome Expectancy, Personal Finance Teaching Efficacy 1, and Personal Finance Teaching Efficacy 2).

PFTOE Subscale.

As with the PFTEBI model, each set of independent variables (i.e., personal financial variables, personal teaching variables, and demographic and socioeconomic variables) were entered in blocks to test the strength of the model's ability to predict the inclusion in the top one-third of the PFTOE scores. The empirical model for the PFTOE subscale is

$$P(\text{High PFTOE}) = 1/(1+e)^{-(b_0 + b_{10}\text{FinSat}_i + b_{11}\text{FinKnow}_i + b_{12}\text{FB}_i + b_{13}\text{FSES}_i + b_7\text{FnTrng}_i + b_8\text{TES}_i}$$
$$+ b_9\text{FK}_i + b_1\text{Age}_i + b_2\text{Gndr}_i + b_3\text{Married}_i + b_4\text{Ownhome}_i + b_5\text{Income}_i + b_6\text{Edu}_i)$$

The personal financial variables were entered in the first step of the hierarchical logistic regression analysis, the personal teaching variables were entered into the second step of the hierarchical logistic regression analysis, and the demographic and socioeconomic variables were entered into the third step of the hierarchical logistic regression analysis.

The Log Likelihood Ratio (425.516) in Step 1, which included the personal financial variables, was found to be significant at the $\rho < .001$ level. The Log Likelihood Ratio (386.264) in Step 2, which included the personal financial variables and the personal teaching variables, was found to be significant at the $\rho < .001$ level. The Log Likelihood Ratio (379.320) in Step 3, which included the personal financial variables, the personal teaching variables and the demographic and socioeconomic variables, was found to be significant at the $\rho < .001$ level. Results are shown in Table 4.12.

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Table 4.12 Explanatory Variables in the Logistic Regression Model Predicting Personal Finance Teaching Outcome Expectancy Subscale

Variable	*-2LL*	Coefficient *B*	Wald	Exp(B) OddsRatio	95% C.I. for Exp(B) Lower	Upper
Step 0	433.959***					
Step 1	425.516***					
Constant		-.382	.579	.682		
Fin Sat		-.034	.381	.967	.868	1.076
Fin Behvrs		.103	1.819	1.109	.954	1.289
Subj FinKno		.120	3.670	1.127	.997	1.274
FSES		-.068	2.976	.934	.864	1.009
Step 2	386.264***					
Constant		-4.751	11.323	.009		
Fin Sat		-.070	1.373	.933	.830	1.048
Fin Behvrs		.087	1.123	1.091	.928	1.283
Subj FinKno		.100	2.045	1.105	.964	1.267
FSES		-.042	.926	.958	.879	1.045
PTE		.187	20.870***	1.206	1.113	1.307
GTE		.034	1.642	1.034	.982	1.089
Fin Trng (1)		-.667	6.224*	.513	.304	.867
Obj Fin Kno		-.165	4.042*	.848	.722	.996
Step 3	379.320***					
Constant		-5.952	12.421	.003		
Fin Sat		-.046	.554	.955	.846	1.078
Fin Behvrs		.091	1.147	1.095	.927	1.293
Subj FinKno		.087	1.462	1.091	.947	1.257
FSES		-.043	.902	.958	.877	1.046
PTE		.192	20.612***	1.211	1.115	1.316
GTE		.034	1.618	1.035	.982	1.090
Fin Trng (1)		-.680	6.162*	.507	.296	.867
Obj Fin Kno		-.158	3.572	.854	.724	1.006
Married (1)		-.219	.603	.803	.462	1.396
OwnHom(1)		.091	.068	1.095	.555	2.159
College (1)		-.109	.132	.897	.499	1.611
Income (1)		.714	5.937*	2.042	1.150	3.628
Gender (1)		.016	.002	1.017	.467	2.215
Age		.017	1.299	1.017	.988	1.047

*** Correlation is significant at the .001 level (2-tailed)

** Correlation is significant at the .01 level (2-tailed)

* Correlation is significant at the .05 level (2-tailed)

The model summary showed improvement in the Log Likelihood Ratio between the constant-only model and the final model in terms of overall fit. The chi-square statistic is significant (x^2 = 54.639, ρ < .001). As measured by Cox and Snell R^2, the goodness-of-fit was .159. As measured by the Nagelkerke R^2, the goodness-of-fit was .213. Neither of these tests provided results that are close to 1, meaning these tests appear to offer little confidence in interpreting the model fit (Field, 2005). The results of the Hosmer and Lemeshow test with this data showed the model is a good fit as indicated by a chi square of 10.252 (ρ = .248). The non-significant result of this test would suggest the observed frequencies do not deviate from the expected frequencies. In addition, the overall model correctly predicted inclusion of the respondent in the appropriate category (i.e., high or low PFTOE) 68.0% of the time, an improvement over the chance level.

The individual variables included in the model were assessed for their strength of predicting the outcome or dependent variable while holding the other variables constant. No variables in Block 1 (financial variables) had significant estimated coefficients, indicating that no financial variables had an effect on belonging to the high PFTOE group.

Three variables in Block 2 (teaching variables) were found to be significant predictors of belonging to the high PFTOE group. The variable for the Personal Teaching Efficacy subscale of the Teacher Efficacy Scale had a significant estimated coefficient (B = .187, ρ = .000). Teachers with a higher level of personal teaching efficacy were likely to belong to the high PFTOE group. The variable for financial training (i.e., having taken a course in personal finances) had a significant estimated coefficient (B = -.667, ρ < .05). The odds ratio of .513 for financial training indicates that having taken a course in

personal finances actually decreases the odds of belonging to the high PFTOE group, when controlling for the other variables. The variable for objective financial knowledge had a significant coefficient (B = -.165, ρ < .05). The odds ratio of .848 for objective financial knowledge indicates that higher income actually decreases the odds of belonging to the high PFTOE group, when controlling for other variables.

One variable in Block 3 (demographic and socioeconomic) was found to have a significant coefficient for predicting inclusion in the high PFTOE group. The variable for the higher income had a significant estimated coefficient (B = .714, ρ < .05). The odds ratio of 2.042 for income indicates that teachers with a higher level of income were twice as likely to belong to the high PFTOE group.

PFTE1 Subscale.

As with the PFTEBI model, each set of independent variables (i.e., personal financial variables, personal teaching variables, and demographic and socioeconomic variables) were entered in blocks to test the strength of the model's ability to predict the inclusion in the top one-third of the PFTE1 scores. The empirical model for the PFTE1 subscale is

$$P(\text{High PFTE1}) = 1/(1+e)^{-(b_0 + b_{10}\text{FinSat}_i + b_{11}\text{FinKnow}_i + b_{12}\text{FB}_i + b_{13}\text{FSES}_i + b_7\text{FnTrng}_i + b_8\text{TES}_i + b_9\text{FK}_i + b_1\text{Age}_i + b_2\text{Gndr}_i + b_3\text{Married}_i + b_4\text{Ownhome}_i + b_5\text{Income}_i + b_6\text{Edu}_i)}$$

The personal financial variables were entered in the first step of the hierarchical logistic regression analysis, the personal teaching variables were entered into the second step of the hierarchical logistic regression analysis, and the demographic and socioeconomic variables were entered into the third step of the hierarchical logistic regression analysis.

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The Log Likelihood Ratio (393.276) in Step 1 was found to be significant at the ρ < .001 level. The Log Likelihood Ratio (380.112) in Step 2 was found to be significant at the ρ < .001 level. The Log Likelihood Ratio (377.432) in Step 3 was also found to be significant at the ρ < .001 level. Results are shown in Table 4.13.

Table 4.13 Explanatory Variables in the Logistic Regression Model Predicting Personal Finance Teaching Expectancy 1

Variable	-2LL	Coefficient B	Wald	Exp(B) OddsRatio	95% C.I. for Exp(B) Lower	Upper
Step 0	438.018***					
Step 1	393.276***					
Constant		-3.045	27.141	.048		
Fin Sat		-.064	1.245	.938	.838	1.050
Fin Behvrs		.196	5.753**	1.217	1.037	1.429
Subj FinKno		.223	11.202***	1.250	1.097	1.424
FSES		.066	2.561	1.068	.985	1.158
Step 2	380.112***					
Constant		-1.560	1.531	.210		
Fin Sat		-.081	1.841	.922	.821	1.037
Fin Behvrs		.192	5.154**	1.211	1.027	1.429
Subj FinKno		.190	7.328**	1.209	1.054	1.386
FSES		.048	1.236	1.049	.964	1.143
PTE		.012	.107	1.012	.943	1.085
GTE		-.056	4.473**	.946	.898	.996
Fin Trng (1)		-.709	7.062**	.492	.292	.830
Obj Fin Kno		.085	1.082	1.088	.928	1.277
Step 3	377.432***					
Constant		-1.831	1.447	.160		
Fin Sat		-.080	1.685	.923	.817	1.042
Fin Behvrs		.181	4.387**	1.198	1.012	1.420
Subj FinKno		.191	7.008**	1.211	1.051	1.395
FSES		.054	1.504	1.056	.968	1.151
PTE		.013	.131	1.013	.943	1.089
GTE		-.054	4.079**	.947	.899	.998
Fin Trng (1)		-.679	6.289**	.507	.298	.862
Obj Fin Know		.083	1.012	1.087	.924	1.278
Married (1)		.382	1.821	1.465	.841	2.551
Home(1)		-.019	.003	.981	.498	1.934
College (1)		-.141	.229	.869	.488	1.546
Income (1)		-.271	.858	.763	.430	1.353
Gender (1)		-.126	.103	.882	.408	1.904
Age		.004	.056	1.004	.975	1.033

*** Correlation is significant at the .001 level (2-tailed)

** Correlation is significant at the .01 level (2-tailed)

* Correlation is significant at the .05 level (2-tailed)

The model summary showed improvement in the Log Likelihood Ratio between the constant-only model and the final model in terms of overall fit. The chi-square statistic is significant (x^2 = 60.587, ρ < .001). As measured by Cox and Snell R^2, the goodness-of-fit was .174. As measured by the Nagelkerke R^2, the goodness-of-fit was .233. Neither of these tests appears to offer strong confidence in interpreting the model fit (Field, 2005). The results of the Hosmer and Lemeshow test showed the model is a good fit as indicated by a chi square of 9.98 (ρ = .269). The non-significant result of this test would suggest the observed frequencies do not deviate from the expected frequencies. Furthermore, the overall model correctly predicted inclusion of the respondent in the appropriate category (i.e., high or low PFTE1) 66.8% of the time, an improvement over the chance level.

Two variables in Block 1 (financial variables) had significant estimated coefficients. The variable for financial behaviors had a significant estimated coefficient (B = .181, ρ < .01). The odds ratio of 1.198 would indicate that teachers with a higher level of positive financial behaviors would be some 20% more likely to belong to the groups of teachers with a high level of PFTE1. Subjective financial knowledge was also observed to have a significant estimated coefficient (B = .191, ρ < .000). The odds ratio of 1.211 would indicate that teachers with a higher level of subjective financial knowledge would be some 21% more likely to belong to the groups of teachers with a high level of PFTE1.

Two variables in Block 2 (teaching variables) were found to be significant predictors of belonging to the high PFTE1 group. The variable for the General Teaching Efficacy subscale of the Teacher Efficacy Scale had a significant estimated coefficient (B

= -.054, ρ = .01). The odds ratio of .947 indicates teachers with a higher level of general teaching efficacy were less likely to belong to the high PFTE1 group. The variable for financial training had a significant estimated coefficient (B = -.679, ρ < .01). The odds ratio of .507 for financial training indicates that having taken a course in personal finances actually decreases the odds of belonging to the high PFTE1 group when controlling for the other variables.

No variables in Block 3 were found to have a significant coefficient for predicting inclusion in the high PFTE1 group. This would indicate that none of the demographic and socioeconomic variables were found to be a significant predictor of having a high level of PFTE1.

PFTE2 Subscale.

As with the PFTEBI model, each set of independent variables (i.e., personal financial variables, personal teaching variables, and demographic and socioeconomic variables) were entered in blocks to test the strength of the model's ability to predict the inclusion in the top one-third of the PFTE2 scores. The empirical model for the PFTE2 subscale is

$$P(\text{High PFTE2}) = 1/(1+e)^{-(b_0 + b_{10}\text{FinSat}_i + b_{11}\text{FinKnow}_i + b_{12}\text{FB}_i + b_{13}\text{FSES}_i + b_7\text{FnTrng}_i + b_8\text{TES}_i + b_9\text{FK}_i + b_1\text{Age}_i + b_2\text{Gndr}_i + b_3\text{Married}_i + b_4\text{Ownhome}_i + b_5\text{Income}_i + b_6\text{Edu}_i)}$$

The personal financial variables were entered in the first step of the hierarchical logistic regression analysis, the personal teaching variables were entered into the second step of the hierarchical logistic regression analysis, and the demographic and socioeconomic variables were entered into the third step of the hierarchical logistic regression analysis.

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The Log Likelihood Ratio (368.947) in Step 1 was found to be significant at the ρ < .001 level. The Log Likelihood Ratio (351.790) in Step 2 was found to be significant at the ρ < .001 level. The Log Likelihood Ratio (346.498) in Step 3 was also found to be significant at the ρ < .001 level. Results are shown in Table 4.14.

Table 4.14 Explanatory Variables in the Logistic Regression Model Predicting Personal Finance Teaching Expectancy 2

Variable	-2LL	Coefficient B	Wald	Exp(B) OddsRatio	95% C.I. for Exp(B) Lower	Upper
Step 0	431.349***					
Step 1	368.947***					
Constant		-2.312	16.068	.099		
Fin Satisfaction		-.004	.004	.996	.885	1.122
Fin Behaviors		.152	3.285	1.164	.988	1.371
Subj Fin Know		.371	26.429***	1.450	1.258	1.670
FSES		-.027	.386	.973	.894	1.060
Step 2	351.790***					
Constant		-4.205	9.438	.015		
Fin Satisfaction		-.026	.168	.974	.861	1.103
Fin Behaviors		.130	2.259	1.139	.961	1.350
Subj Fin Know		.336	19.326***	1.399	1.204	1.625
FSES		-.021	.205	.979	.895	1.072
PTE		.103	7.194**	1.109	1.028	1.196
GTE		.001	.001	1.001	.948	1.056
Fin Training (1)		-.800	8.052**	.449	.259	.781
Obj Fin Know		.023	.068	1.023	.864	1.211
Step 3	346.498***					
Constant		-5.613	11.086	.004		
Fin Satisfaction		-.006	.009	.994	.872	1.132
Fin Behaviors		.143	2.518	1.154	.967	1.376
Subj Fin Know		.350	19.406***	1.420	1.215	1.659
FSES		-.021	.204	.979	.893	1.074
PTE		.112	7.863**	1.118	1.034	1.209
GTE		.001	.001	1.001	.948	1.057
Fin Training (1)		-.813	7.960**	.443	.252	.780
Obj Fin Know		.020	.051	1.020	.858	1.214
Married (1)		.076	.067	1.079	.606	1.922
Own Home (1)		.354	.928	1.424	.694	2.923
College (1)		.463	2.158	1.589	.857	2.949
Income (1)		.077	.063	1.081	.589	1.982
Gender (1)		-.394	.870	.674	.295	1.543
Age		.017	1.110	1.017	.986	1.049

*** Correlation is significant at the .001 level (2-tailed)
** Correlation is significant at the .01 level (2-tailed)
* Correlation is significant at the .05 level (2-tailed)

The model summary showed improvement in the Log Likelihood Ratio between the constant-only model and the final model in terms of overall fit. The chi-square statistic is significant ($x^2 = 84.851$, $\rho < .001$). As measured by Cox and Snell R^2, the goodness-of-fit was .235. As measured by the Nagelkerke R^2, the goodness-of-fit was .316. Neither of these tests appears to offer strong confidence in interpreting the model fit (Field, 2005). The results the Hosmer and Lemeshow test showed the model is a good fit as indicated by a chi square of 12.181 ($\rho = .143$). The non-significant result of this test suggests the observed frequencies do not deviate from the expected frequencies. Furthermore, the overall model correctly predicted inclusion of the respondent in the appropriate category (i.e., high or low PFTE2) 73.1% of the time, an improvement over the chance level.

One variable in Block 1 (financial variables) had a significant estimated coefficient. Subjective financial knowledge was observed to have a significant estimated coefficient (B = .350, $\rho < .000$). The odds ratio of 1.420 would indicate that teachers with a higher level of subjective financial knowledge would be some 42% more likely to belong to the group of teachers with a high level of PFTE2.

Two variables in Block 2 (teaching variables) were found to be significant predictors of belonging to the high PFTE2 group. The variable for the Personal Teaching Efficacy subscale of the Teacher Efficacy Scale had a significant estimated coefficient (B = .112, $\rho = .01$). The odds ratio of 1.118 indicates teachers with a higher level of personal teaching efficacy were about 12% more likely to belong to the high PFTE2 group. The variable for financial training had a significant estimated coefficient (B = -.813, $\rho < .01$). The odds ratio of .443 for financial training indicates that having taken a course in

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personal finances actually decreases the odds of belonging to the high PFTE2 group when controlling for the other variables.

No variables in Block 3 were found to have a significant coefficient for predicting inclusion in the high PFTE2 group. This would indicate that none of the demographic and socioeconomic variables were found to be a significant predictor of having a high level of PFTE2.

Summary of Results

Results of the factor analysis on the Teacher Efficacy Scale and the Financial Self-Efficacy Scales provided support for previously published results. The results of the factor analysis on the Personal Finance Teaching Efficacy Beliefs Instrument revealed a new subscale not previously reported in the literature. Regression analyses supported hypotheses 11, 15, 20 - 23, 34, and 37. Hypotheses 1-10, 12-14, 16-19, 24-33, 35, and 36 were not supported, as previously discussed. The hierarchical multiple regression analyses provided support for Research Question 2 and the binary logistic regression analysis provided support for Research Question 3. Research Question 1 was not well supported as measured by the hierarchical multiple regression analysis. A discussion of the results is found in Chapter 5.

Chapter 5 - Discussion

Teacher training in personal finance as a subject matter has not been a common topic in the financial education literature, although financial education has been under increased observation by policymakers in response to the recent financial turmoil. Puerto Rico, like other jurisdictions, has included personal finance in several education track curricula. Thus, teachers need to be able to teach the subject matter in order to implement the level of high quality education the Puerto Rico Department of Education promotes. The goal of this study was to understand and examine the components that may determine a teacher's capacity to teach personal finances, as depicted in the Personal Finance Education Efficacy Model (Figure 2.2), to high school students in Puerto Rico. This chapter discusses the findings of this study. In addition, limitations related to this study will be discussed and implications for developing teacher training programs will be presented.

Three research questions guided this study and addressed specific areas related to teaching personal finances (i.e., objective financial knowledge, subjective financial knowledge, and personal finance teaching efficacy). Research Question 1 evaluated the determinants of objective financial knowledge. Because teachers work in an environment that is structured around objective knowledge as a measurement of learning and knowledge, it is important to understand the determinants of subjective financial knowledge for this sample population. The literature, as discussed in Chapter 2, shows the importance of objective financial knowledge and its importance to financial behaviors.

Research Question 2 evaluated the variables that may influence the levels of subjective financial knowledge. Part of a teacher's work environment includes increasing students' abilities to understand what they are learning and be able to apply that knowledge in the future. Students must believe they understand the material in order to use it. Teachers must believe they understand in order to teach the material. It was important to understand the determinants of subjective financial knowledge for this sample population.

Research Questions 1 and 2 are related to Research Question 3. The third research question looked at the variables that might help predict if a teacher has a high level of personal finance teaching efficacy. Research has shown teachers who have a high level of teaching efficacy tend to have a greater positive impact on student learning and achievement. Because the goal of the financial education mandates outlined in Chapter 1 is to prepare students to live and function in the complex financial world, personal finance teaching efficacy is an important concept to understand.

As discussed in Chapter 2, SCT (Social Cognitive Theory) is used to attempt to explain the level of personal finance teaching efficacy beliefs (i.e., the behavior in SCT) based on various concepts, such as cognitive ability (i.e., the ability to reason, solve problems and modify behavior), experience (i.e., skill acquired from performing a task), confidence (i.e., a subjective measure of assurance), and observations. Through the interaction of these concepts, people develop beliefs about what they can do; they predict consequences, set objectives, and plan courses of action that will get them to those objectives (Bandura, 1991). Utilizing the model developed for this study, which was rooted in SCT, measurements were utilized to test the relationships among concepts that

affect a teacher's beliefs in his or her ability to teach personal finances. This model

provides a stage to create teacher training programs that will allow teachers to apply the

knowledge learned for their personal financial benefit as well as the tools to teach these

concepts and behaviors to students. Elements of the Personal Finance Education Efficacy

Model (Figure 2.2) are discussed below, followed by a discussion of each research

question.

Teacher Efficacy Scale

Bandura (1991) theorized that based on life experiences, people develop

expectancies regarding action and outcome. Behavior is enacted when people have

confidence in their ability and when people expect the behavior to result in the desirable

outcomes (Enochs, et al, 2000). Teachers with a high level of teaching efficacy can be

expected to motivate students to have higher levels of achievement. This study draws

from a population in Puerto Rico not previously addressed in the research regarding

teachers. For the first time, the TES was administered in Spanish as part of this study and

the reliability of the scale in Spanish is as strong as the English version of the scale.

Principal Components Analysis on the TES indicated the presence of two

independent subscales – General Teaching Efficacy (GTE) and Personal Teaching

Efficacy (PTE) – as reported in previous research (Tschannen-Moran, Woolfolk-Hoy &

Hoy, 1998; Tschannen-Moran & Woolfolk-Hoy, 2001; Brouwers & Tomic, 2001). The

results of this study add to the literature regarding the construct validity and reliability for

TES. Cronbach's alpha for the GTE was previously reported at .72 (Hoy & Woolfolk,

1993), and this study measured Cronbach's alpha for the GTE at .74. The Cronbach's

alpha previously reported for PTE was .77 (Hoy & Woolfolk, 1993), and this study

measured Cronbach's alpha at .73. The translation makes it possible to continue researching teachers in languages other than English with similar expected reliability of the test scores. Henson, Kogan, and Vacha-Haase (2001) argued that reporting of reliability figures for this population serves to strengthen the examination of score reliability across studies. This is especially important given the population sample for this study is from a culture not previously reported and given the Hispanic portion of the U.S. population is at 17% (U.S. Census Bureau, 2012).

The reliability of the TES administered in Spanish provides a new tool for the purpose of understanding how teachers approach their vocation. The TES may be considered an evaluation tool, which could aid in determining areas of opportunity for teachers to address in order to improve their level of teaching efficacy. Teachers with a higher level of teaching efficacy have been shown to inspire students to higher levels of learning. This study revealed that TES was significantly associated with certain variables, such as financial satisfaction, having taken a course on personal finances, financial behaviors, financial self-efficacy, and subjective financial knowledge. No significant association was found between TES and the demographic or socioeconomic variables.

The sample used in this study contained a high percentage of teachers with five or fewer years of teaching experience (88.6%). Some authors have proposed that because efficacy beliefs may be resistant to change, getting early career teachers to a high level of teaching efficacy is important (Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998). As reported in Chapter 4, the average TES score of 39.52 (SD = 5.83) provides a baseline for future comparison on this population as they progress through their teaching careers.

Although efficacy levels have been described as resistant to change, Bandura (1997) postulated that compelling needs may intrude and cause efficacy beliefs to be reevaluated (such as the need to teach a new class in personal finances). This is currently in progress in Puerto Rico. According to the Puerto Rico Department of Education (Educational Policy Memo, 2013; Education Policy Memo, 2010), personal finances is to be included in the Social Studies and Health courses in all public schools, as well as in the Marketing Track in the Vocational schools. In this study, 74.1% (n=234) of the respondents do not teach personal finance and 25.9% (n=82) indicated they currently teach personal finance. More teachers are likely to be requested to teach personal finances in the future in Puerto Rico. Use of the TES may provide teachers and school administrators a tool for measuring the effects of training on teachers and documenting the impact on student achievement over time.

Financial Self-Efficacy Scale

The translation of the Financial Self-Efficacy Scale (Lown, 2011) provides a new tool for observing and measuring this concept in a larger population. Principal Components Analysis on the Financial Self-Efficacy Scale indicated there is only one scale in the instrument. The factor analysis confirmed published reports on the structure and reliability of the scale. This is the first time the Financial Self-Efficacy Scale (FSES) has been administered in Spanish. The reliability of the scale in Spanish is as strong as previously published literature. Lown (2011) had reported Cronbach's alpha at .76, while Cronbach's alpha was measured at .78 in this study. The translation makes it possible to continue researching teachers in languages other than English with the same expected reliability. Lown had indicated additional research on the FSES was needed to confirm

the results of the initial research. The results of this study support the utilization of the FSES with diverse cultures. As will be discussed below, the level of FSES shares a statistically significant relation with a high level of personal finance teaching efficacy.

Personal Finance Teaching Efficacy Belief Instrument

The PFTEBI was created from the Math Teaching Efficacy Beliefs Instrument (MTEBI) to understand the efficacy beliefs of the teacher respondents for teaching personal finances in particular. This is the first time the PFTEBI has been administered in English or Spanish. As with the TES and the FSES, the translation makes it possible to continue researching teachers in languages other than English with the same expected reliability. The MTEBI was created based on the Science Teaching Efficacy Beliefs Instrument (STEBI). Because no other scale was available to measure personal finance teaching efficacy, the MTEBI was adapted to reflect this construct-PFTEBI. The reliability observed in the PFTEBI ($\alpha = .84$) could not be compared with previous results for the MTEBI and the STEBI as these were not reported for the entire scale, but only the subscales. The MTEBI is composed of two subscales – Personal Math Teaching Efficacy (PMTE) and Math Teaching Outcome Expectancy (MTOE). The STEBI is also composed of two subscales – Personal Science Teaching Efficacy (PSTE) and Science Teaching Outcome Expectancy (STOE).

In this study, three subscales were discovered from the factor analysis on the PFTEBI, which was unexpected. The three subscales were labeled PFTOE, PFTE1, and PFTE2. The Personal Finance Teaching Outcome Expectancy subscale (PFTOE) is consistent with previously reported literature because it contains the same questions and has a higher level of reliability as measured by Cronbach's alpha. The Math Teaching

Outcome Expectancy subscale of the MTEBI reliability, as measured by Cronbach's alpha, has been reported between .77 and .82 (Utley, Moseley, & Bryant, 2005; Enochs, Smith, & Huinker, 2000), while Cronbach's alpha for the PFTOE was higher (α=.83).

While the math and science efficacy instruments contained one subscale for Personal Teaching Efficacy, the Personal Finance Teaching Efficacy (PFTE) subscale loaded onto two separate factors in this study (Utley, Moseley, & Bryant,2005; Enochs, Smith, & Huinker, 2000). The personal math teaching efficacy subscale of the MTEBI yielded a Cronbach's alpha of between .77 and .80 (Utley, Moseley, & Bryant, 2005; Enochs, Smith, & Huinker, 2000). This study yielded a Cronbach's alpha of .80 for PFTE1 and a Cronbach's alpha of .81 for PFTE2.

While the questions that loaded onto the two PFTE subscales were those in the first person singular, which is consistent with the literature, the questions that loaded onto the second Personal Finance Teaching Efficacy subscale (PFTE2) dealt with conceptual issues, such as "I do not know how to turn students on to personal finance" and not action issues such as "I continually find better ways to teach personal finance." The questions that loaded onto the PFTE1 subscale were negative (and subsequently reverse coded for this study) and dealt with actions the teacher could take with students to help them learn about personal finances. This may indicate a need to address specific strategies for teachers to consider implementing when dealing with students in order to achieve student learning. Pedagogical techniques may need to be developed and tested that will help teachers address student learning issues. This discovery of the second PFTE subscale will aid with the development of teaching techniques and can be tested in future research. Further research is also warranted to determine if content-based education for teachers

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will affect the PFTE1 subscale of the PFTEBI (i.e., the strategies that will allow teachers to address student learning issues) as discussed above.

Research Question 1

The administration of examinations is a standard mechanism for measuring objective knowledge. Research Question 1 looked at the relationship between financial variables, teaching variables, and demographic and socioeconomic variables to determine the association between these variables and the respondents' level of objective financial knowledge. Overall, the model was not found to be a strong predictor of objective financial knowledge after controlling for socioeconomic and demographic variables. It is noted that only one variable has been observed to be significant in this model. This might indicate the model is lacking other variables that may be affecting the model's ability to determine the level of objective financial knowledge, or it might indicate a problem with the dependent variable itself. Several variables were found to have a significant correlation with objective financial knowledge when the model did not control for the other variables, which is more in line with the literature. Once the individual independent variables were measured against the dependent variable, while controlling for the other independent variables, the model weakened.

The variable that showed an association with the level of objective financial knowledge was financial self-efficacy. This appears to agree with previously published results (Hilgert, Hogarth, & Beverly, 2003; Lown, 2010; Asaad, 2012; FINRA, 2009; Schuchardt, 1998). Table 5.1 shows the results of the individual hypotheses for Research Question 1.

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Table 5.1 Hypotheses for Research Question 1

Hypothesis	Result
1. Older teachers will have a higher level of objective financial knowledge.	Not supported
2. Married teachers will have a higher level of objective financial knowledge.	Not supported
3. Male teachers will have a higher level of objective financial knowledge.	Not supported
4. Teachers who own their home will have a higher level of objective financial knowledge.	Not supported
5. Teachers who attained education beyond a bachelor's will have a higher level of objective financial knowledge.	Not supported
6. Teachers who are in the higher income brackets will have a higher level of objective financial knowledge.	Not supported
7. Teachers who have a higher level of teaching efficacy will have a higher level of objective financial knowledge.	Not supported
8. Teachers who have taken courses in personal finance will have a higher level of objective financial knowledge.	Not supported
9. Teachers who have higher levels of financial satisfaction will have a higher level of objective financial knowledge.	Not supported
10. Teachers who practice a higher number of positive financial behaviors will have a higher level of objective financial knowledge.	Not supported
11. Teachers who have a higher level of financial self-efficacy will have a higher level of objective financial knowledge.	Supported
12. Teachers with a higher level of subjective financial knowledge will have a higher level of objective financial knowledge.	Not supported

According to the table, the only variables that were significant in step 1 were subjective financial knowledge and financial efficacy. Once variables in step 2 were added, only financial self-efficacy was significant. The B coefficient increased as the additional variables were entered into the model, indicating the strength of the variable in the model. It appears that the addition of the teaching variables (i.e., teaching efficacy and having taken a course in personal finance) mitigated the effect of subjective financial knowledge on objective financial knowledge. This may be due to the subjects covered in the course or the time elapsed between having taken the course and the exam. When controlling for these additional variables, financial self-efficacy remains significant.

The questions used to measure objective financial knowledge do not appear to properly measure the construct. Factor analysis appears to confirm the observation that the questions which compose the Objective Financial Knowledge scale (OFK) do not share sufficient structural interrelationships to form any underlying sub dimensions (Prett, Lackey, & Sullivan, 2003). In order to confirm the validity of the OFK Scale, a principal component factor analysis with varimax rotation and Kaiser normalization was conducted in SPSS 18. Four factors emerged. Cronbach's alpha was calculated at .376, which is not considered strong. Items FK1, FK2, FK3, FK7, FK8, and FK9 loaded onto two or more of the four factors, leaving only three items (i.e., FK4, FK5, and FK6). In order to confirm the validity of the reduced item OFK Scale, a principal components analysis was conducted, and because it contained only one factor, the solution could not be rotated. Cronbach's alpha was calculated at .167 for the reduced item OFK scale. This is very weak.

Determinants of Objective Financial Knowledge

This study evaluated two forms of financial knowledge (i.e., objective and subjective). As discussed in Chapter 2, both forms of financial knowledge have been used in research. Both forms of financial knowledge are included in the Personal Finance Education Efficacy Model. The results of the objective financial knowledge assessment were somewhat surprising given that the questions were taken from the Jump$tart Coalition (2008) questions for high school students. The nine questions dealt with common financial planning issues and could be expected to be addressed by the respondents in their normal course of living. The average score was 4.57 (SD = 1.61) out of a possible total of nine. This result of 50.8% is only slightly better than the 48.3% average for the 2008 Jump$tart survey of high school seniors and lower than the scores recorded for college freshman who earned an average score of 59% (Jump$tart, 2008). The average score did improve when compared to previous Puerto Rican teacher groups that had responded to the questions (m = 4.6, SD = 1.6) for training sessions given by the Alliance (2013). Although objective financial knowledge was not found to have a significant relationship with teaching efficacy as was proposed in Hypothesis 7, test scores are standard mechanisms for evaluating knowledge in the school environment. This presents an interesting issue for teaching personal finance from the teacher's perspective. If objective financial knowledge is not associated with personal finance teacher efficacy as was postulated in Hypothesis 33, how are teachers to convey the knowledge and test for student comprehension? The continued testing and reporting of objective financial knowledge in the literature will facilitate the standardization of topics and questions for teacher preparation for financial education.

Questions used to establish levels of objective financial knowledge have not been

standardized (Huston, 2010; Willis, 2009; Way & Holden, 2009a; Robb & Sharpe, 2011).

If there were only one set of questions, teachers may instruct to the questions and

students may learn the answers without developing the cognitive ability to solve the issue

asked by the question. One of the questions included in the survey was related to

spending and asked the respondent to calculate the time it would take an individual to

save a certain amount of money. The respondent was given information regarding the

income and expenses in order to calculate the amount of money available each month to

save. Only 24% (n=76) of the respondents answered this question correctly, and this was

the lowest response result of the nine questions. The question required the respondent to

perform mathematical calculations in order to solve the question (refer to Appendix H).

The question also required the respondent to comprehend what was being asked in order

to solve for the response. Testing for objective financial knowledge includes other

disciplines, such as mathematics (Lusardi & Mitchell, 2011b). This approach may

support the notion of teaching personal finances in various subject matters in schools, in

order to develop the multifaceted understanding and cognitive ability to make beneficial

financial decisions in the future, as is being done in Puerto Rico (Educational Policy

Memo, 2013, Education Policy Memo, 2010).

Financial Behaviors

There are no standard financial behavior questions in the literature, as various

authors have reported (Huston, 2010; Robb & Woodyard, 2011; Xiao, Tang, Serido, &

Shim, 2008; Willis, 2010). For this study, nine financial behaviors were measured by

asking respondents if they engaged in certain financial activities, such as maintaining a

list of monthly expenses, saving money each month, reviewing their credit report, having written financial goals, and not paying ATM fees. These questions were based on the general categories described by various researchers (Hilgert, Hogarth, & Beverly, 2003; Hensley, 2011; Robb & Sharpe, 2009; Jump$tart, 2010). The average score was 5.78 (*SD* = 1.83) on a total possible of nine. These results indicate that respondents engage in roughly two-thirds (64%) of the possible positive financial behaviors included in the assessment. When looking at the impact of financial behaviors on financial knowledge and personal finance teaching efficacy, financial behaviors were found to have a significant relationship with objective financial knowledge, as measured by the Pearson Correlation coefficient (r = .189, ρ < .001). This would indicate Hypothesis 10 was supported. However, within the model and when controlling for the other independent variables, financial behaviors was not observed to have an impact on the level of objective financial knowledge. Although item analysis is outside the scope of this study, it may warrant further research to determine if there are any particular financial behaviors that might be better predictors of objective financial knowledge.

Financial Satisfaction

Within this model, financial satisfaction was not observed to have an impact on the level of objective financial knowledge. Financial satisfaction was observed to determine if any association with the other independent variables was present. A strong association between financial satisfaction and financial behaviors was observed in this study, as measured by the Pearson Correlation coefficient (r = .412, ρ < .01), which appears to support Bandura's assertion that people do things that give them satisfaction. Although causation was not measured in this study, the association between these

variables may prove useful in the development of more universal financial behaviors in future research. The current study also found that financial satisfaction was significantly associated with objective financial knowledge as measured by the Pearson Correlation coefficient (r = .124, ρ < .05) thus supporting Hypothesis 9. The association between financial satisfaction and subjective financial knowledge was measured to be stronger than the association between financial satisfaction and objective financial knowledge. These results appear to be in line with other research, which found a significant association between financial satisfaction and financial knowledge (Robb & Woodyard, 2011), although the associations noted here held when controlling for other factors.

Courses Taken on Personal Finance

Respondents were asked to indicate if they had taken any courses on personal finance. Of the total respondents, 60.4% (n=191) indicated they had not taken any course in personal finances, and 39.6% (n=125) indicated they had. In this model, no significant relationship between having taken a course on personal finances and objective financial knowledge was found although the model had proposed such an association (i.e., Hypothesis 8). This lack of association within the model (i.e., when controlling for the other independent variables) and when measured by the Pearson Correlation coefficient, may be explained by several factors. For example, the time between the exam and when the course was taken may explain the lack of association. It may also be due to the lack of coordination between the course topics and exam topics. Another possibility is the myriad of personal finance topics that may be included in a course and on an exam. There are no standardized topics and questions that are uniform across studies or courses. Further study regarding course work and knowledge retention over time is warranted.

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Financial Self-Efficacy

Financial self-efficacy, as measured by the Financial Self-Efficacy Scale (Lown, 2011), was observed to be as reliable as previously reported in the literature. In the model, the B coefficient for the financial self-efficacy variable increased as steps 2 and 3 were added to the model. Hypothesis 11 was supported in the model. In addition, and as measured by the Pearson Correlation coefficient, financial self-efficacy was associated with financial behaviors (r = .466, ρ < .01) and financial satisfaction (r = .544, ρ < .01).

Objective financial knowledge does not have a strong association with various independent variables when controlling for the other independent variables in this study, although the model is significant. The significant association between objective financial knowledge and the personal financial variables as measured by the Pearson Correlation coefficients (i.e., subjective financial knowledge, financial behaviors, financial satisfaction, and financial self-efficacy) can be viewed in the context of the Personal Finance Education Efficacy Model (Figure 2.2) and SCT only on an individual basis. The cognitive operation of objective financial knowledge (tested financial knowledge) influences behavior and development (Bandura, 1997). Although the independent variables were not shown to be strong determinants of objective financial knowledge when controlling for the other independent variables, the individual association with the personal financial variables may be viewed as congruent with SCT. Future research needs to evaluate the interaction of the independent variables to determine lack of strength observed in this population.

In general, the level of objective financial knowledge does not appear to have a strong association with several of the variables in the model when controlling for the

other independent variables. While other studies have shown an association between the demographic and socioeconomic independent variables and financial knowledge (Bowen, 2002; Hilgert, Hogarth & Beverly, 2003), Hypotheses 1 through 6 were not found to be strong predictors of objective financial knowledge in this model. When the variables are considered individually, older males with higher incomes appear to have a higher level of objective financial knowledge, as measured by the Pearson Correlation coefficients. In general, the model does not appear to be a strong predictor of objective financial knowledge. This study did not evaluate the types of courses, content of courses, or timing of the courses taken by the respondents. Lack of inclusion of these details may affect the strength of the model to determine the level of objective financial knowledge. The test questions, although geared toward basic financial information applicable to high school students, may not have covered the same topics the respondents studied in their personal finance courses. Research on adult financial education has shown stronger levels of predicted objective financial knowledge when the information in the coursework is to be used by the participants in the near future (Amromin, Ben-David, Chomsisengphet, & Evenoff, 2011). In order to take advantage of this education environment, developing a database of standard questions might provide a basis for comparisons between different groups of students and teachers and further the research into best practices in the teaching of personal finances.

Research Question 2

Research Question 2 looked at the relationship between the financial, teaching, and demographic and socioeconomic variables to determine the association between those variables and the respondents' level of subjective financial knowledge. Overall, the

model was found to be a fairly strong predictor of subjective financial knowledge. This appears to be in line with the model, based on SCT, wherein self-evaluation and efficacy are important considerations. Slightly more than 44% of the level of subjective financial knowledge could be explained by the variables in the model. Subjective financial knowledge is important to teachers and their belief in their ability to teach personal finances (Hensley, Richards, & Hansell, 2012). Each of the blocks of variables showed a strong correlation with the level of subjective financial knowledge. The individual financial variables (i.e., financial behaviors, financial satisfaction, subjective financial knowledge and financial self-efficacy) showed a stronger association with subjective financial knowledge than the other variable blocks (i.e., demographic and socioeconomic, and teaching). Table 5.2 shows the results of the individual hypotheses for Research Question 2.

Table 5.2 Hypotheses for Research Question 2

Hypothesis	Result
13. Older teachers will have a higher level of subjective financial knowledge.	Not supported
14. Married teachers will have a higher level of subjective financial knowledge.	Not supported
15. Male teachers will have a higher level of subjective financial knowledge.	Supported
16. Teachers who own their home will have a higher level of subjective financial knowledge.	Not supported
17. Teachers who attained education beyond a bachelor's degree will have a higher level of subjective financial knowledge.	Not supported
18. Teachers who are in the higher income brackets will have a higher level of subjective financial knowledge.	Not supported
19. Teachers who have a higher level of teaching efficacy will have a higher level of subjective financial knowledge.	Not supported
20. Teachers who have taken courses in personal finance will have a higher level of subjective financial knowledge.	Supported
21. Teachers who have higher levels of financial satisfaction will have a higher level of subjective financial knowledge.	Supported
22. Teachers who practice a higher number of positive financial behaviors will have a higher level of subjective financial knowledge.	Supported
23. Teachers who have a higher level of financial self-efficacy will have a higher level of subjective financial knowledge.	Supported
24. Teachers with a higher level of objective financial knowledge will have a higher level of subjective financial knowledge.	Not supported

According to the table, the variables that were significant in Step 1 were financial satisfaction, financial behaviors, and financial self-efficacy. When the variables in Step 2 were added, financial satisfaction, financial behaviors, financial self-efficacy, and having taken a course in personal finances were found to be significant. After the socioeconomic and demographic variables were added in Step 3, gender was also found to be a significant variable in addition to the previous four.

Determinants of Subjective Financial Knowledge

As discussed above, this study evaluated two forms of financial knowledge (i.e., objective financial knowledge and subjective financial knowledge). Subjective financial knowledge was measured in the study to determine the association with other financial, teaching, and demographic and socioeconomic independent variables. This study found subjective financial knowledge to have a strong relationship with other independent variables, which is consistent with the literature (Asaad, 2013; Danes & Haberman, 2007; Gutter, 2010). In addition, the scores observed for subjective financial knowledge were higher than the scores observed for objective financial knowledge, which is also consistent with the literature (Perry & Morris, 2005; Danes & Haberman, 2007; Gutter, 2010).

Financial Behaviors

As previously discussed, there are no standard financial behavior questions in the literature (Huston, 2010; Robb & Woodyard, 2011; Xiao, Tang, Serido, & Shim, 2008; Willis, 2010). For this study, the nine questions were based on the general categories described by various researchers (Hilgert, Hogarth, & Beverly, 2003; Hensley, 2011; Robb & Sharpe, 2009; Jump$tart, 2010). The average score was 5.78 ($SD = 1.83$) on a

total possible of nine. These results indicate that respondents engage in roughly two-thirds (64%) of the possible positive financial behaviors included in the assessment. When looking at the impact of financial behaviors on financial knowledge and personal finance teaching efficacy, financial behaviors were found to have a significant relationship with subjective financial knowledge, as measured by the Pearson Correlation coefficient ($r = .487$, $\rho < .001$). In addition, within the model, financial behaviors were observed to have an impact on the level of objective financial knowledge. Hypothesis 22 is supported within the model (i.e., when controlling for the other variables).

Financial Satisfaction

Financial satisfaction was measured in the study to determine any association with the dependent variables being measured. As previously reported, financial satisfaction was observed to be an important variable in the model to determine subjective financial knowledge. The current study also found that financial satisfaction was significantly associated with subjective financial knowledge, as measured by the Pearson Correlation coefficient ($r = .557$, $\rho < .01$). Hypothesis 21 claimed that higher levels of financial satisfaction would be associated with higher levels of subjective financial knowledge pursuant to the suggestions of SCT. Each of these measures looks at cognitive issues and the individual's impression or determination, not at an objective measure. How satisfied an individual is with his or her personal finances is an important determinant of how he or she views his or her level of financial knowledge.

Courses taken on Personal Finance

Having taken a course on personal finances was reported above as one of the significant variables in the model to predict subjective financial knowledge in Step 1 of

the model. Respondents were asked to indicate if they had taken any courses on personal finance. Of the total respondents, 60.4% (n=191) indicated they had not taken any course in personal finances and 39.6% (n=125) indicated they had. A significant association was observed between having taken a course in personal finance and subjective financial knowledge, as measured by the Pearson Correlation coefficient (r = .366, $\rho < .01$). Hensley, Richards, and Hansell (2012) also observed a strong association between teacher coursework and subjective financial knowledge. Within the model having taken a course in personal finance was also shown to have a significant association with higher levels of objective financial knowledge, when controlling for the other independent variables. Hypothesis 20 was supported. The observation of this association between course work and the model can be viewed through SCT. If an individual has taken a course in personal finance, he or she believes he or she has learned something about personal finances and this belief is associated with his or her belief regarding his or her level of objective financial knowledge. Although this study did not evaluate the causation between the variables, the association between coursework and subjective financial knowledge may influence the design of teacher training programs.

Financial Self-Efficacy

Financial self-efficacy was reported above as one of the significant variables in the model to predict subjective financial knowledge in Step 1 of the model. In addition, a significant association was observed between having taken a course in personal finance and subjective financial knowledge, as measured by the Pearson Correlation coefficient (r = .463, $\rho < .01$). This is consistent with previous literature regarding confidence in managing money and level of financial self-efficacy (Lown, 2011). Within the model

having a higher level of financial self-efficacy was also shown to have a significant

association with higher levels of objective financial knowledge, when controlling for the

other independent variables. The observation of this association between financial self-

efficacy and the model supports Hypothesis 23 pursuant to the suggestions of SCT.

Similar to financial satisfaction, each of these measures (i.e., financial self-efficacy and

objective financial knowledge) looks at cognitive issues and the individual's impression

or determination, not at an objective measure. How confident an individual is with his or

her personal finances is an important determinant of how he or she views his or her level

of financial knowledge.

Gender

As previously noted, females comprise 87% of the sample. Gender has been

shown in the literature to have a positive correlation with subjective financial knowledge

as males have been reported to have higher levels of subjective financial knowledge and

confidence regarding personal finances (Danes & Haberman, 2007; Goldsmith &

Goldsmith, 2006). Gender was observed as one of the significant variables in the model

to predict subjective financial knowledge in Step 3 of the model. Male respondents were

found to have a higher level of objective financial knowledge when controlling for the

other independent variables, supporting Hypothesis 15. In addition, a significant

association was observed between gender and subjective financial knowledge, as

measured by the Pearson Correlation coefficient ($r = -.262$, $\rho < .01$). These observations

are consistent with the literature (Danes & Haberman, 2007; Goldsmith & Goldsmith,

2006).

Several studies found the levels of objective financial knowledge and subjective financial knowledge were not equal, with respondents rating their subjective financial knowledge higher than what their test scores (objective financial knowledge) would indicate (FINRA, 2009; Asaad, 2012; Godsted & McCormick, 2007). This study found similar results. The average score on the financial test (objective financial knowledge), with possible scores ranging from zero to nine, was 4.57 (SD =1.61). The average score on a scale of one to ten for subjective financial knowledge was 5.83 (SD = 2.42).

Subjective and objective financial knowledge differed in other ways in this study. Subjective financial knowledge was found to have a stronger association with having taken a course in personal finance, as measured by Pearson's Correlation Coefficient (r=.487, ρ <.001) than objective financial knowledge (r=.189, ρ <.05). Robb and Woodyard (2011) described teaching confidence as subjective financial knowledge and observed similar relative associations between financial knowledge and training. Several other researchers observed a strong association between confidence in teaching personal finances and training or coursework taken in personal finances (Way & Holden, 2009a; Hensley, Richards, & Hansell, 2012; Pankow, Borr, & Jergensen, 2011). This study found a higher percentage of respondents had taken a course in personal finance (39.56%) than the 37% reported by Way and Holden (2009a).

Subjective financial knowledge and objective financial knowledge were found to be similar in several ways in this study regarding the associations with other independent variables. As previously noted, objective financial knowledge did not have significant associations with the demographic and socioeconomic independent variables. It was observed in this study, for this population, there were no significant associations between

objective financial knowledge and age as postulated in Hypothesis 13, being married as proposed in Hypothesis 14, home ownership as put forth in Hypothesis 16, level of education as claimed in Hypothesis 17, level of income as proposed in Hypothesis 18, or teaching efficacy as postulated in Hypothesis H19. For this population, these variables did not have a significant impact on an individual's level of subjective financial knowledge when controlling for the other variables in the model.

The level of subjective financial knowledge appears to have a strong association with several of the variables in the model. In general, the model appears to be a strong predictor of objective financial knowledge. The strength of the financial satisfaction, financial self-efficacy, financial behaviors, and training agree with Bandura's (1997) assertion of the importance of belief and the effect beliefs have on behaviors.

The significant association between subjective financial knowledge and the other dependent variables can be viewed in the context of the Personal Finance Education Efficacy model (Figure 2.2) and SCT. Belief is a central theorem of SCT and subjective financial knowledge is a belief or level of confidence. This study supports the importance of subjective financial knowledge for teachers of personal finance.

Research Question 3

Research question 3 looked at the relationship between the demographic and socioeconomic variables, teaching variables, and financial variables to determine which of these variables would provide an indication of the respondent's level of personal finance teaching efficacy. Research Question 3 specifically asked if the overall model is better than chance at predicting a teacher's inclusion in the top one-third of the scores for the Personal Finance Teaching Efficacy Beliefs Instrument scale. The variables were

entered in blocks (i.e., financial variables, teaching variables, and demographic and socioeconomic variables). Each block of variables entered improved the measure of fit significantly, as measured by chi-square value, although not in the same proportion. The block composed of the individual financial variables provided a significant improvement to the measure of fit, as measured by chi-square. When the variables of this block were considered on an individual basis, subjective financial knowledge and financial behaviors were found to be significant predictors of the teacher being in the higher level of personal finance teaching efficacy. The addition of this block caused the -2LL measurement to improve by 70.80 ($\rho < .001$).

The block composed of the teaching variables improved the measure of fit, as measured by chi-square significantly, although not every individual variable contributed to this improvement. When the variables in this block were considered on an individual basis, financial behaviors and subjective financial knowledge continued to be significant predictors, while financial training was also found to be a significant predictor of the teacher being in the higher level of personal finance teaching efficacy. The additions of this block caused the -2LL ratio to improve by 23.01 ($\rho < .001$).

The demographic and socioeconomic variables block improved the predication of the model as compared to chance by a non-significant amount. The additions of this block caused the -2LL ratio to improve by 3.02 ($\rho < .001$).When the variables are considered on an individual basis, none were significant predictors of the dependent variable. Age, marital status, gender, home ownership, income, or level of education had no effect on being able to predict if the teacher would have a high level of personal finance teaching efficacy.

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Determinants of High Level of Personal Finance Teaching Efficacy Beliefs

When all the variables are entered into the model, we begin to see the effects of combinations of variables on the measure of fit of the model. This is the model that represents the subjects studied in the research. The teachers live and act in the financial world. As previously discussed, social cognitive theory considers the interaction of the individual with experiences that, in turn, might affect behaviors, which might affect beliefs, which might affect future behaviors, which might, then, affect experiences. The model allows us to evaluate the effects of the combination of these variables and ascertain if there are particular variables that show to be of greater importance than the other variables given the interaction of all the variables. As we have seen in Chapter 4, three variables were found to be significant in the success of a respondent being in the top one-third scores group of the PFTEBI, when controlling for the other variables. The three variables are financial coursework or training, subjective financial knowledge, and financial behaviors. Of the variables found to be non-significant, objective financial knowledge runs contrary to some published reports (Education Commission, 2003; Morton, 2005; Hensley, Richards, & Hansell, 2012) and agrees with others (Wilson, Floden & Ferrini-Mundy, 2001). This may be due to the different measurements used in the different studies. More research is needed regarding objective financial knowledge and teacher efficacy pertaining to personal finances to determine if other factors, such as pedagogy or subject matter content, may be affecting the personal finance teaching efficacy. Table 5.3 shows the results for the individual hypotheses for Research Question 3.

Table 5.3 Hypotheses for Research Question 3

Hypothesis	Result
25. Older teachers will have a higher level of personal finance teaching efficacy.	Not supported
26. Married teachers will have a higher level of personal finance teaching efficacy.	Not supported
27. Male teachers will have a higher level of personal finance teaching efficacy.	Not supported
28. Teachers who own their home will have a higher level of personal finance teaching efficacy.	Not supported
29. Teachers who have attained education beyond a bachelor's degree will have a higher level of personal finance teaching efficacy.	Not supported
30. Teachers who are in the higher income brackets will have a higher level of personal finance teaching efficacy.	Not supported
31. Teachers who have a higher level of teaching efficacy will have a higher level of personal finance teaching efficacy.	Not supported
32. Teachers who have taken courses in personal finance will have a higher level of personal finance teaching efficacy.	Supported[1]
33. Teachers who have a higher level of objective financial knowledge will have a higher level of personal finance teaching efficacy.	Not supported
34. Teachers who practice a higher amount of positive financial behaviors will have a higher level of personal finance teaching efficacy.	Supported
35. Teachers who have higher levels of financial satisfaction will have a higher level of personal finance teaching efficacy.	Not supported
36. Teachers who have higher level of financial self-efficacy will have a higher level of personal finance teaching efficacy.	Not supported
37. Teachers who have higher level of subjective financial knowledge will have a higher level of personal finance teaching efficacy.	Supported

[1]Direction of support is negative.

Determinants of the PFTEBI Subscales

The Personal Finance Teaching Efficacy Beliefs Instrument (PFTEBI) was composed of three factors, as determined by Principal Components Analysis and discussed previously. By substituting each subscale, or factor, for the PFTEBI in the original model, we can see the effects of combinations of variables on the measure of fit of the model and observe the determinants of each scale.

The first factor, PFTOE, has been described as a measurement of the teacher's outcome expectations resulting from their relationship with the students (Enochs et. al., 2000). As reported in Chapter 4, three variables resulted to be significant in the success of a respondent being in the top one-third scores group of the PFTOE, when controlling for the other variables. The three variables are personal teaching efficacy, financial coursework or training, and level of income.

The second factor, PFTE1, has been described as pertaining to what the teacher can control in the relationship with the students (Enochs, et al., 2000). As was discussed in Chapter 4, four variables were found to be significant in the success of a respondent being in the top one-third scores group of the PFTE1, when controlling for the other variables. The four variables are financial behaviors, subjective financial knowledge, general teaching efficacy, and financial coursework or training.

The third factor, PFTE2, had not been previously discussed in the literature. In this study, it has been described as pertaining to concepts and not specific actions regarding the teaching of personal finances. As was discussed in Chapter 4, three variables were found to be significant in the success of a respondent being in the top one-third scores group of the PFTE2, when controlling for the other variables. The three

variables are subjective financial knowledge, personal teaching efficacy, and financial coursework or training.

The financial training variable has been found to be a significant variable in the overall PFTEBI as well as in each of the three factors or subscales. Each time, the variable has been found to lower the odds of the respondent being part of the high PFTEBI, high PFTOE, high PFTE1 and high PFTE2. This observation implies that increased knowledge is not helpful in determining a teacher's level of efficacy. As discussed below, the increased level of knowledge may decrease a teacher's confidence in teaching the material. Once a teacher learns about the many facets of personal finance, he or she may understand they do not dominate the material sufficiently in order to teach it well.

Subjective Financial Knowledge

Subjective financial knowledge was found to be one of the strongest indicators for a teacher belonging to the highest third on the PFTEBI, as postulated in Hypothesis 37. Subjective financial knowledge was also found to be a significant predictor of the two Personal Finance Teaching Efficacy subscales. This would be in agreement with the belief components of SCT, if an individual believes he or she knows about personal finance then he or she will have the confidence to teach it. In addition, subjective financial knowledge was found to have a strong association with teacher efficacy, financial satisfaction, positive financial behaviors, and financial self-efficacy. The strong association between training and subjective financial knowledge, as previously discussed, indicates that teachers need to participate in personal finance training courses.

Information regarding personal finances appears to have a strong impact on a person's belief in his or her level of knowledge.

Financial Behaviors

Another important finding of the study is that financial behavior was found to be one of the strongest indicators for a teacher belonging to the highest third on PFTEBI, as proposed in Hypothesis 34. Financial behaviors were a significant predictor for a teacher to belong to the highest third of the PFTE1 subscale (i.e., the subscale related to actions). Belief alone is not sufficient to attain a high level of personal finance teaching efficacy; acting on that belief is also important. Modeling behaviors learned is considered by Bandura (1997) to be important in SCT. The results observed in this study showing the strong association between the initial scale (PFTEBI) and the subscale (PFTE1) are consistent with SCT and the model.

Courses Taken on Personal Finance

The results of Research Question 3 indicate that teachers might not benefit from receiving training in personal finances; the negative coefficient would indicate that increased training is a predictor of a lower level of personal finance teaching efficacy. Therefore, Hypothesis 32 is not supported, while there is a significant association between training and the level of personal finance teaching efficacy. While, as discussed above, a higher level of subjective financial knowledge is a significant predictor of a high level of personal finance teaching efficacy. And, as it has been previously observed that training is a significant predictor of subjective financial knowledge, a possible interpretation is that while training increases a person's subjective financial knowledge it decreases their confidence in teaching personal finances to students. This may be due to

the complexities and depth of the subject matter in the training classes. Or, it may be due to the focus of the training session on applying the personal finance techniques rather than on teaching the personal finance concepts. Pedagogical techniques need to be addressed in teacher training sessions. As has been previously discussed, the Personal Finance Teaching Efficacy Beliefs Instrument (PFTEBI) was composed of three subscales, including two for Personal Finance Teaching Efficacy (PFTE). Training was found to have a significant negative association with all three subscales of the PFTEBI. These observations indicate training may need to be focused on specific aspects (i.e., each subscale) of personal finance teaching efficacy. The results of the model in Research Question 3 appear to support this observation.

The strong association between subjective financial knowledge and a higher level of personal teaching efficacy beliefs and the strong association between positive financial behaviors and a higher level of personal finance teaching efficacy beliefs indicate the need to emphasize positive financial behaviors in teacher trainings and coursework on personal finances. As training has been found by Henlsey, Richards, and Hansell (2012) to have a strong relationship with subjective financial knowledge, training sessions could be an important mechanism structured to aid in the strengthening of subjective financial knowledge. In order for training to have an impact on personal finance teaching efficacy, the training may need to include specific strategies for teaching personal finances to students.

Based on this study, a person's beliefs have a significant impact on actions, as well as on other beliefs. As Bandura (1997) hypothesized in SCT, a person's beliefs will affect their actions. The observed negative impact on personal finance teaching efficacy

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from having taken a course in personal finances may indicate that teachers who had taken

a course had realized they do not know enough to teach the topic to their students,

although they felt more confident about managing their own finances. The factor analysis

on the Personal Finance Teaching Efficacy Beliefs Instrument appears to support this

observation regarding training. The factor analysis yielded three sub-scales, and one of

these sub-scales appeared to concentrate on the teacher's lack of knowing how to teach

the topic of personal finances to the students. Increasing a person's subjective financial

knowledge through training may have a positive impact on personal finance teaching

efficacy. Content based education may be one way of increasing a teacher's personal

finance teaching efficacy as postulated by several authors (Shulman, 1987; Shulman,

1986; Hill, Schilling, & Lowenberg-Ball, 2004; Hill, Rowan, & Lowenberg-Ball, 2005;

Freeman, 2002; Mishra & Koehler, 2006). Training for teachers would include

information the teacher can apply to their personal lives and information that can be

delivered to students, as described by Hensley (2011). The findings in this study

pertaining to the effect of training on a teacher's level of personal finance teaching

efficacy support the observations of Way and Holden (2009), i.e., that teacher training

needs to include specific pedagogical methods for teaching personal finance to students.

Observations from the population of this study indicate the training may not need

to be modified for demographic or socioeconomic variables. Several of these independent

variables (i.e., age (H25), marital status (H26), gender (H27), owning a home (H28),

level of education (H29), income level (H30), or level of teaching efficacy (H31)) were

not found to be significant predictors of belonging to the highest third of personal finance

teaching efficacy. For this population, these variables did not have a significant impact on

an individual's level of personal finance teaching efficacy beliefs when controlling for the other variables in the model.

A teacher's perception of the current financial environment may also have an impact on his or her level of personal finance teaching efficacy. Puerto Rico has been in a recession since 2007. This may be reason for not observing a significant association between financial satisfaction or financial self-efficacy and belonging to the highest third on the PFTEBI scale. In addition, the severe level of underfunding for teachers' retirement plans has been widely quoted in the news (Breckinridge, 2012). This environment may affect a teacher's perspective on teaching personal finances. If teachers are having a difficult time with adapting their personal finances to the current economic environment, this may affect their level of confidence for teaching personal finances, thus not supporting Hypotheses 35(financial satisfaction) and 36 (financial self-efficacy). Further research is required to better understand these constructs and confirm any associations between these variables.

Implications

The study demonstrates the importance of training in personal finances as the key element in suggesting participation in the high score PFTEBI group. It appears that training provides increased confidence in the level of financial knowledge as well as increased confidence for the teachers to address their own financial behaviors. Having a high level of personal finance teaching efficacy is the goal the education system should strive for. In addition, because teachers with high levels of teaching efficacy have been shown to have greater positive influences on students, the education system should strive to have all teachers of personal finance obtain a high level of personal finance teaching

efficacy belief. Way and Holden (2009) reported that "teachers' subject matter preparation, pedagogical methods, and teaching assignments will be important considerations in designing programs to enhance their capacity to provide meaningful and effective financial education" (p. 11).

This study shows the importance of teacher training on the level of personal finance teaching efficacy beliefs. As previously reported, Way and Holden (2009) proposed that "teachers' subject matter preparation and teaching assignments will be important considerations in designing programs to enhance their capacity to provide meaningful and effective financial education" (p. 11). This study takes Way and Holden's proposal further out from "teaching assignments" to including strategies for teaching personal finance concepts to students.

The results of this study indicate that objective financial knowledge is not a predictor of personal finance teaching efficacy, while subjective financial knowledge is. This may be explained by application of the Social Cognitive Theory (Bandura, 1997) and the importance of belief and behaviors. As discussed above, this study did not consider the level or detail of training courses taken on personal finance. This may add another level of understanding to why objective financial knowledge is not important in predicting personal finance teaching efficacy.

Teacher training programs will need to include several items and be supported by public policy. While some states are attempting to bring financial education into the curriculum, the effort should be coordinated among states to allow for a national standard or at least a national guideline regarding the common or core elements a successful financial education program should contain. Training programs must be designed to

include personal application of the content, teaching methods applicable to students at each level, knowledge measurement techniques, and knowledge retention measurements.

As previously noted, Puerto Rico has been implementing personal finance education in various curricula. This trend can be expected to continue to other subject areas and grade levels as is being done in other jurisdictions. The results of this study can be utilized to create tailored training programs for the Puerto Rico pre-service and in-service teacher population. The goal of the training is to have teachers with a high level of personal finance teaching efficacy because teachers with higher levels of efficacy have been shown to inspire students to a higher level of academic achievement (Bandura, 1997). The training program should include information that will enable a teacher to increase his or her financial self-efficacy and financial behaviors as well as include pedagogical strategies for teaching personal finance at different school levels.

Limitations

There are several limitations of the study that may be due to the design of the study. Factors that may have affected the generalizability of the study included the attributes of the respondents, sample population, location of the sample, length of survey, and choice of measurements. These limitations are discussed below.

Generalizability

The generalizability of the study's findings is limited for a number of reasons. First, although the goal of this study was to focus on Puerto Rican teachers, it must be noted that the sample population cannot be generalized to other areas. Seventy of the 78 municipal towns in Puerto Rico were included in the sample, and therefore the study is

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limited to Puerto Rico. The study employed a combination of judgmental sampling and snowball sampling. The questionnaire was sent to teachers directly who were invited to participate in the study. They were also asked to invite others to participate in the study. This did not allow for an accurate calculation of the response rate, although it may have increased the number of participants, due to an interest in participating in a widely recognized study.

Second, the majority of the respondents have been teaching for five years or less. The literature finds that teachers with fewer years of experience are more likely to participate in studies. This limitation did not allow this study to measure any association between teacher experience and the other variables, such as teacher efficacy, personal finance teaching efficacy, financial satisfaction, financial behaviors, financial knowledge, and financial self-efficacy. Any observed difference based on years of teaching service may have had an impact on the design of teacher training programs for teachers with varying years of teaching experience.

Sample Size

The number of respondents was slightly higher than the researcher had anticipated. The number of respondents who opened the survey instrument but did not complete it was also higher than the researcher had anticipated. This might have been due to the length of the survey. Some of the questions asked were not related to the current survey, but were intended for future research as there is no other database with information on the teacher and teaching of personal finance in Puerto Rico. Language may have also been an issue. Although the questions were presented in both languages, this affected the length of the survey also. Furthermore, the timing of the survey was at

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the end of the school year in Puerto Rico. Many teachers may have been completing end-of-year tasks and did not have the necessary amount of time to complete the survey due to other time constraints. Social research surveys are not conducted frequently in Puerto Rico. Some resistance to completing the survey may have been due to this lack of commonality of surveys in Puerto Rico. Another possible reason is a lack of trust in how the results might be used. Evaluations of teachers and their capacity to teach is a very sensitive topic in the teaching profession. Participation in the study may have been viewed by some as admitting a lack of knowledge or preparation for teaching personal finances, even though no identifying information was requested in the survey.

The length of the survey may have inhibited participation. The survey invitation was sent directly to 2,900 teachers of grades six to 12. Of these, 675 teachers began the survey and 316 completed the survey. The majority of the respondents (566 of 316) answered the first seven questions (i.e., those related to the acknowledgment of the survey and its use). Of the remaining 566 participants, 24% (136) stopped answering the survey when they reached the Teacher Efficacy Scale questions. An additional 18% (78) stopped answering the questions at the Personal Finance Teaching Efficacy Belief Instrument Scale questions. At this point, the respondents may have realized the completed survey would take more time than anticipated and stopped with the hope of returning at a later time to complete the survey. Thirteen respondents spent more than four hours with the survey open in the Qualtrics system. The average time these 13 respondents had the system open was 3,199 minutes, ranging from a minimum of 251 minutes to a maximum of 9,050 minutes. The average time the remaining 314

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respondents had the Qualtrics system open was 32.65 minutes, with a minimum of .33 minutes to a maximum of 216 minutes.

Measurements

The scales used in the study had not previously been translated into Spanish. Although the questions in English were also included, the translations may not have conveyed the same meanings. Including both languages allowed the respondent to modify the translation based on his or her level of language proficiency. The scale metrics appeared to be similar to the English only version, but further research is needed on these Spanish versions of the scales to continue to evaluate the validity and reliability of the measurements

Future Directions

Future research should be conducted to provide tools for teachers, school or program directors, and policymakers as the subject of personal finance continues to be included in more and more curricula. In this study, the differences between objective financial knowledge and subjective financial knowledge (i.e., the scores for subjective financial knowledge were higher than the scores for objective financial knowledge) observed were consistent with the literature (Perry & Morris, 2005; Danes & Haberman, 2007; Gutter, 2010; Xiao, Tang, Serido, & Shim, 2011). Whereas the strength of subjective financial knowledge is consistent with SCT, the weakness of objective financial knowledge observed in this study needs to be researched further, perhaps with other Hispanic populations, to understand if culture has any effect on the level of objective financial knowledge. A national database of questions can be developed so that

teachers do not "teach to the test" and students simply learn the answers without developing the cognitive ability to solve the issue asked by the question. The continued testing and reporting of objective financial knowledge in the literature will facilitate the standardization of topics and questions for financial education for teacher preparation. What information is to be taught? Questions used to establish levels of objective financial knowledge have not been standardized (Huston, 2010; Willis, 2009; Way & Holden, 2009a; Robb & Sharpe, 2011). Continued research on the expanding list of questions will allow for more consistent comparisons between programs and results. Culturally adapted questions may also reveal important considerations for financial education training program design.

Objective Financial Knowledge

The need to understand the components and determinants of objective financial knowledge is important for several reasons. First, teachers need to be aware of the effects their modeling has on students. Second, teachers with higher levels of objective financial knowledge will be able to cite facts and information to students in the course of teaching. Modeling or demonstrating the confidence of knowing the material is part of SCT. And third, student learning is strengthened by observing the teacher's mastery of the information and the teacher's ability to go beyond the basic information being taught (Wilson, Floden, & Ferrini-Mundy, 2001).

Modeling Financial Behaviors

In addition to modeling objective financial knowledge, modeling financial behaviors is also an important part of education as understood through SCT. What financial behaviors should be modeled by the teachers in order to strengthen student

learning? Behaviors used to determine positive financial behaviors have not been standardized, and new scales need to be developed in order to consistently measure associations with financial knowledge and teaching personal finances.

In-service and Pre-service Teachers

Research directed at teachers needs to include in-service and pre-service teachers due to the previously mentioned changes to school curricula. The research will need to be directed at measuring personal finance teaching efficacy beliefs for teachers who participate in training programs to measure the immediate effects of financial training on teachers by comparing pre- and post-levels of personal finance teaching efficacy in Puerto Rico and areas in the U.S. where there is a large concentration of Hispanic educators. Additional investigation needs to be conducted with the pre-service teachers (i.e., those who are not yet active in the teaching profession) in order to understand their levels of teaching efficacy as well as whether, and how, efficacy can be improved for the benefit of the students. Long term studies will allow researchers to understand if current economic conditions such as a recession affect a teacher's level of personal finance teaching efficacy beliefs.

Efficacy Scales

It is recommended that other researchers focus on the efficacy scales used in this study (i.e., FSES, TES, and PFTEBI), in order to corroborate the findings of this study. Repeated use in Spanish will permit the confirmation of the reliability of the scale in a language other than English. In addition, correlations may be discovered based on years teaching that were not observed in the current study. Furthermore, the stability of the TES, FSES, and PFTEBI scores needs to be tracked over time to understand how stable

the efficacy levels are and how the efficacy levels may be affected (i.e., improved) through proper training, experience and behavior modification. For example, will specific training eliminate the second PFTE subscale of the PFTEBI, as observed in this study? Teacher training needs to include content for personal use, content for teaching (i.e., what to teach), and how to teach the material. Shorter surveys may be used over the course of teacher training programs in order to improve response rates and create a larger sample. The larger sample may allow for more generalization of the results to the overall teacher population.

School Directors

School and program directors can use the information from researchers to evaluate teachers, understand which teachers might excel at teaching personal finances, and create a positive academic atmosphere in their schools for teaching personal finances. Evaluations should not be limited to finance or accounting teachers, as the teaching of personal finance concepts may be included in the teaching of other subjects such as mathematics or social studies.

Although the focus of this research is on the teachers, the overarching goal is ultimately to provide students with the tools and lessons that will help them improve their personal finance management skills. These skills will be applied in the short term when evaluating college funding alternatives and in the long term when evaluating proper use of credit and budgeting techniques.

Summary of Discussion

This study explored factors that may affect the capacity of teachers to teach personal finance to high school students in Puerto Rico. The discussion revealed how the

findings in this study support, fully or partially, or do not support the models for predicting financial knowledge and level of personal finance teaching efficacy. The limitations related to this study were discussed along with the implications for developing teacher training programs.

The current study evaluated three research questions to understand the variables that might influence levels of objective financial knowledge, subjective financial knowledge, and personal finance teaching efficacy. The survey was opened to teachers in Puerto Rico and 316 teachers completed the survey within the allotted time frame. The personal finance education efficacy model is comprised of three groups of variables as described by Bandura's (1991) social cognitive theory – personal financial variables, teaching variables, and demographic and socioeconomic variables. Within this model, the current study incorporated three efficacy scales, translated into Spanish, to measure certain aspects of a teacher's confidence in teaching in general, teaching personal finances in particular, and managing their own finances. Principal Components Analyses were performed on the three scales (i.e., Teacher Efficacy Scale (TES), Financial Self-Efficacy Scale (FSES), and the Personal Finance Teaching Efficacy Beliefs Instrument (PFTEBI)), and the results were in line with previously published results, with the exception of the number of subscales or underlying dimensions in the PFTEBI. These analyses provide new perspective and use of the scales in populations of different cultures that had not been previously measured.

Hierarchical multiple regression analysis was used to test the association between the financial, teaching, and demographic and socioeconomic variables in the model and objective financial knowledge. The results showed the variables determined slightly less

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than 10% of the variance in the model. Hierarchical multiple regression analysis was used to test the association between the financial, teaching, and demographic and socioeconomic variables in the model and subjective financial knowledge. The results showed that the model was significant and explained slightly more than 44% of the variance in the model. Binary logistic regression analysis was used to answer a third research question, which looked to understand the variables that would indicate a high level of personal finance teaching efficacy. The overall model was significant and correctly predicted inclusion of the respondent in the high or low level of personal finance teaching efficacy slightly more than 82% of the time.

Teacher training needs to include personal finance ideas, strategies, and actionable items teachers can apply to their own financial situation. By doing so, this approach will enable teachers to model the financial behaviors they are teaching their students. This modeling will also allow the teachers to experience the application of the knowledge learned that might enhance their teaching styles and strategies with students. Teacher training programs also need to include personal finance pedagogy that is flexible enough to address a diverse student body. Each of these elements needs to include measurements and evaluations that will assist with determining the success of the training program at the teacher and the student level. The structure of the training program can be based on the variables in the Personal Financial Education Efficacy Model. This model allows for measurements and continuous modifications to the teacher training program according to the needs of the education system in Puerto Rico and beyond.

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Appendix A - Teacher Survey Dual Language

Confidencial   Uso oficial solamente: # Control_____

Hoja de Consentimiento Informado
Informed Consent for Research

Título del Proyecto: *Examinar la capacidad y preparación de los maestros en Puerto Rico para instruir sobre las finanzas personales. Examining Capacity and Preparation of Teachers for Teaching Personal Finances in Puerto Rico*

Investigador Principal: Kurt A. Schindler, Candidato a PhD, Kansas State University con la Dr. Kristy Archuleta, Asesora (Advisor)

¿De qué se trata el studio (la investigación)? What is it?

- El propósito de la investigación es entender la experiencia, preparación y capacidad de los maestros para enseñar las finanzas personales en las escuelas públicas y privadas en Puerto Rico.
  - The purpose of this study is to understand the background, preparation, and capacity of teachers to teach personal finances in the public and private school systems in Puerto Rico.

Como participante, ¿qué necesito hacer? What will I have to do?

- Llenar el cuestionario.
  - Complete the attached survey
- Se anticipa que necesitará entre 30 y 45 minutos para completar el cuestionario adjunto.
  - The anticipated time to complete the questionnaire is approximately 30 – 45 minutes

¿Cuáles son los beneficios y los riesgos? What are the benefits and risks?

- Tendrá la oportunidad de presentar su perspectiva sobre la enseñanza en general y la enseñanza de las finanzas personales en particular.
  - You will have the opportunity to provide your perspective on teaching in general and teaching personal finances in particular.
- Tendrá la oportunidad de explorar su comportamiento y conocimiento financiero actual y sus experiencias financieras.
  - You will have the opportunity to explore your current financial behaviors and knowledge as well as your personal financial background and experience.
- Va a contribuir a desarrollar una escala para medir la enseñanza de las finanzas personales en Puerto Rico y nos ayudará a entender mejor el estado actual de la preparación y capacidad de nuestros maestros. Se usará esta información para crear e implementar programas efectivos de capacitación de nuestros maestros en Puerto Rico y otras partes del mundo.

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- o You will be helping develop the personal finance teaching scale and providing valuable information that will be used to understand the current state of personal finance teaching capacity and preparation in Puerto Rico. This information can be used to develop effective teacher training programs for personal finance teachers in Puerto Rico and elsewhere.

- Luego de completar el cuestionario en todas sus partes, podrá participar en una rifa de premios. Los premios son billetes enmarcados de Guatemala con un mensaje sobre la importancia de la enseñanza y las escuelas.
    - o Upon your completion of the questionnaire, you may participate in a drawing for gifts. The gifts are framed currency from Guatemala which depict a school classroom.

¿Participar es confidencial? Is it private?

- Toda información recolectada es estrictamente confidencial.
    - o All information we collect for research is confidential.

¿Me puedo dar de baja si deseo? Can I quit if I want to?

- Su participación es voluntaria.
    - o Participating in the research study is voluntary.

Si tuviese alguna duda, ¿con quién me puedo comunicar? Who should I speak with if I have any questions?

- Si tuviese alguna pregunta o duda sobre este proyecto o cualquier parte del proyecto, se puede comunicar con las siguientes personas:
    - o Should you have any questions about this project or its conduct, you can contact any of the following persons:
    - o Dr. Kristy Archuleta, Kansas State University, kristy@ksu.edu
    - o Kurt A. Schindler, Kansas State University, residente de PR 787-249-7061.

Sus responsabilidades y acuerdos. Participant's Agreement and Responsibilities:

- Entiendo que este proyecto es para la investigación y que mi participación es voluntaria. Entiendo que si decido participar puedo retirarme en cualquier momento sin ninguna penalidad, sin tener que explicar mis razones y sin perder algún beneficio que me tocara.
    - o I understand this project is research, and that my participation is completely voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or loss of benefits to which I may otherwise be entitled.

Confidencial   Uso oficial solamente: # Control_____

- Confirmo que con mi firma abajo indico que he leído este documento y entiendo lo que
  se requiere de mí. He leído todas las preguntas presentadas arriba y doy mi
  consentimiento voluntariamente para participar en este proyecto. Mi firma confirma que
  he recibido una copia firmada de este formulario de consentimiento.
    - I verify that my signature below indicates that I have read and understand what my participation in
      this project entails and I know of no reason that I cannot participate in this project. I have had all
      my questions answered and hereby give my voluntary consent for participation in this project. My
      signature acknowledges that I have received a signed and dated copy of this consent form.

Nombre Participante:_____
Participant name

Firma Participante _____   Fecha:_____
Participant signature   Date:

Testigo _____   Fecha: _____
Witness signature   Date:

Si desea enterarse o saber sobre los resultados de esta encuesta, comuníquese con Kurt A.
Schindler al correo electrónico kaspr@k-state.edu luego de concluirse el estudio.

If you would like to learn about the results of the study, please contact Kurt A. Schindler, kaspr@k-state.edu at the
conclusion of the study.

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Confidencial   Uso oficial solamente: # Control_____

Escala de eficacia del maestro (*Teacher Efficacy Scale*) (Hoy & Woolfolk, 1993)
Presentamos a continuación unas observaciones sobre las personas y la enseñanza. El propósito es recopilar información y actitudes actuales de los educadores acerca de estas observaciones. No hay contestaciones correctas ni incorrectas. Estamos interesados en su opinión honesta. Las contestaciones serán confidenciales.

A number of statements about people and teaching are presented below. The purpose is to gather information regarding the actual attitudes of educators concerning these statements. There are no correct or incorrect answers. We are only interested in your frank opinions. Your responses will remain confidential.

Instrucciones: Favor indicar su opinión sobre cada observación circulando la contestación apropiada en la escala a la derecha de cada observación.

Instructions: Please indicate your personal opinion about each statement by circling the appropriate response at the right of each statement.

CLAVE: 1=Muy de acuerdo   2= De acuerdo   3=Un poco más de acuerdo que en desacuerdo
    4=Un poco menos de acuerdo que en desacuerdo   5=En desacuerdo   6=Muy en desacuerdo

KEY: 1=Strongly Agree   2=Moderately Agree   3=Agree slightly more than disagree
    4=Disagree slightly more than agree   5=Moderately Disagree   6=Strongly Disagree

---

1. Lo que un estudiante puede aprender está principalmente
   relacionado con el trasfondo familiar.   1 2 3 4 5 6

   The amount a student can learn is primarily related to family background.

2. Si los estudiantes no reciben disciplina en su hogar, es probable
   que no acepten ninguna disciplina en la clase.   1 2 3 4 5 6

   If students aren't disciplined at home, they aren't likely to accept any discipline.

3. Cuando lo intento bien, puedo llegar a los estudiantes más difíciles.   1 2 3 4 5 6

   When I really try, I can get through to most difficult students.

4. Un(a) maestro(a) está muy limitado(a) en lo que puede lograr debido a que el
   ambiente familiar del estudiante influye mucho en los logros del estudiante.   1 2 3 4 5 6

   A teacher is very limited in what he/she can achieve because a student's home environment
   is a large influence on his/her achievement.

5. Si los padres hicieran más por sus hijos, yo podría hacer más con ellos.   1 2 3 4 5 6

   If parents would do more for their children, I could do more.

Teacher Capacity Measurement   Spring, 2013

6. Si un estudiante no se acuerda de algo que di en la lección anterior, yo sabría
cómo lograr que retenga más en la próxima lección.   1 2 3 4 5 6

   If a student did not remember information I gave in a previous lesson, I would know how
   to increase his/her retention in the next lesson.

7. Si un estudiante empieza a interrumpir y alborotar, me siento confiado(a) que
tengo las destrezas para redirigirlo a la lección de forma rápida.   1 2 3 4 5 6

   If a student in my class becomes disruptive and noisy, I feel assured that I know some
   techniques to redirect him/her quickly.

8. Si uno de mis estudiantes no puede hacer una de las asignaciones, yo podría
medir precisamente si la asignación fue del grado correcto de dificultad.   1 2 3 4 5 6

   If one of my students couldn't do a class Assignment, I would be able to accurately assess
   whether the assignment was at the correct level of difficulty.

9. Si realmente trato, puedo llegar al estudiante más difícil o menos motivado.   1 2 3 4 5 6

   If I really try hard, I can get through to even the most difficult or unmotivated student.

10. Al final del día, el maestro o la maestra no puede hacer mucho dado que la
mayor parte de la motivación del estudiante depende de su ambiente familiar.   1 2 3 4 5 6

   When it comes right down to it, a teacher really can't do much because most of a student's
   motivation and performance depends on his or her home environment.

Teacher Capacity Measurement   Spring, 2013

Confidencial   **Uso oficial solamente: # Control_____**

La escala de auto-eficacia financiera *(The Financial Self-efficacy Scale)* (Lown, 2011)
Deseamos entender su nivel de eficacia financiera personal en esta sección. Presentamos a continuación unas observaciones sobre las finanzas personales. El propósito es recopilar información en cuanto a las actitudes y perspectivas de los maestros sobre estas observaciones. No hay contestaciones correctas ni incorrectas. Estamos interesados en su opinión honesta. Las contestaciones serán confidenciales.

A number of statements about personal finances are presented below. The purpose is to gather information regarding the actual attitudes of teachers concerning these statements. There are no correct or incorrect answers. We are only interested in your frank opinions. Your responses will remain confidential.

Instrucciones: Favor indicar su opinión sobre cada observación circulando la contestación apropiada en la escala a la derecha de cada observación.
  Instructions: Please indicate your personal opinion about each statement by circling the appropriate response at the right of each statement.

CLAVE:	1 = Muy cierto	2=Cierto	3=No tan cierto	4=Nunca cierto
1 = Exactly true	2=Moderately true	3=Hardly true	4=Not at all true

1. Es muy difícil mantener mi plan de gastos cuando surgen
   gastos no esperados.   1   2   3   4
   It is hard to stick to my spending plan when unexpected expenses arise.

2. Es un reto progresar hacia mis metas financieras.   1   2   3   4
   It is challenging to make progress toward my financial goals

3. Cuando surgen gastos no esperados normalmente tengo
   que recurrir a mis tarjetas de crédito.   1   2   3   4
   When unexpected expenses occur I usually have to use credit.

4. Cuando se me presenta un reto financiero, se me hace difícil
   encontrar una solución.   1   2   3   4
   When faced with a financial challenge, I have a hard time figuring out a solution.

5. No confío en mi habilidad para manejar mis finanzas. 1   2   3   4
   I lack confidence in my ability to manage my finances.

6. Me preocupa no tener suficiente dinero para mi retiro. 1   2   3   4
   I worry about running out of money in retirement.

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Uso oficial solamente: # Control_____

Instrumento sobre la eficacia de la enseñanza de las finanzas personales Personal
Finance Teaching Efficacy Beliefs Instrument

Presentamos a continuación unas observaciones sobre las personas y la enseñanza de las finanzas
personales. El propósito es recopilar información y actitudes actuales de los educadores acerca
de estas observaciones. No hay contestaciones correctas ni incorrectas. Estamos interesados en
su opinión honesta. Las contestaciones serán confidenciales.

A number of statements about people and teaching personal finance are presented below. The purpose is to gather
information regarding the actual attitudes of educators concerning these statements. There are no correct or incorrect
answers. We are only interested in your frank opinions. Your responses will remain confidential.

Instrucciones: Favor indicar su opinión sobre cada observación circulando la contestación
apropiada en la escala a la derecha de cada observación.

> Instructions: Please indicate the degree to which you agree or disagree with each statement below by
> circling the appropriate response at the right of each statement:

CLAVE: 1=Muy de acuerdo   2= De acuerdo   3= Ni de acuerdo ni en desacuerdo
4=En desacuerdo   5=Muy en desacuerdo

    KEY: 1=Strongly Agree   2= Agree   3=Uncertain   4= Disagree   5=Strongly Disagree

---

1. Cuando un estudiante sobresale en el tema de las finanzas personales,
   es porque el maestro o la maestra ha puesto más esfuerzo.   1 2 3 4 5

   When a student does better than usual in personal finance, it is often because
   the teacher exerted a little extra effort.

2. Continuamente encuentro mejores maneras de enseñar las finanzas personales.   1 2 3 4 5

   I continually find better ways to teach personal finance.

3. Por más que trato, no logro enseñar finanzas personales tan bien como
   enseño otros temas.   1 2 3 4 5

   Even if I try very hard, I do not teach personal finance as well as I teach most subjects.

4. Cuando las notas de la clase de finanzas personales mejora, es principalmente debido
   a que el maestro o la maestra ha encontrado una mejor manera de enseñar el tema. 1 2 3 4 5

   When the personal finance grades of students improve, it is often due to their
   teacher having found a more effective teaching approach.

Confidencial   **Uso oficial solamente: # Control_____**

5. Sé cómo enseñar los conceptos de las finanzas personales efectivamente.   1 2 3 4 5
    I know how to teach personal finance concepts effectively.

6. No intento ser muy efectivo fiscalizando las actividades de la clase de
    finanzas personales.   1 2 3 4 5
    I do not try to be very effective in monitoring personal finance activities.

7. Si los estudiantes no alcanzan su potencial en la clase de las finanzas personales,
    es probablemente debido a enseñanza inefectiva.   1 2 3 4 5
    If students are underachieving in personal finance, it is most likely due to ineffective personal finance teaching

8. Por lo general, enseño las finanzas personales de forma inefectiva.   1 2 3 4 5
    I generally teach personal finance ineffectively.

9. La falta de un trasfondo financiero fuerte de un estudiante puede ser
    superado por la buena enseñanza.   1 2 3 4 5
    The inadequacy of a student's personal finance background can be overcome by
    good teaching.

10. Cuando un estudiante de promedio bajo sobresale en las finanzas personales,
    normalmente es debido a la atención adicional de la maestra o el maestro.   1 2 3 4 5
    When a low achieving child progresses in personal finance, it is usually due
    to extra attention given by the teacher.

11. Entiendo las finanzas personales suficientemente bien para ser efectivo(a) en la
    enseñanza del tema al nivel de la escuela superior.   1 2 3 4 5
    I understand personal finance well enough to be effective in teaching high school
    level personal finance.

12. La maestra o el maestro es generalmente responsable por los logros académicos
    de los estudiantes en el tema de las finanzas personales.   1 2 3 4 5
    The teacher is generally responsible for the achievement of students in personal finance.

13. El logro académico del estudiante en el tema de las finanzas personales está directamente
    relacionado con la efectividad de la maestra o el maestro y su enseñanza del tema. 1 2 3 4 5
    Students' achievements in personal finance is directly related to their teacher's effectiveness
    in personal finance teaching.

14. Si los padres comentan que su hijo(a) demuestra más interés en el tema de finanzas
    personales, probablemente es debido al desempeño de la maestra o el maestro.   1 2 3 4 5
    If parents comment that their child is showing more interest in personal finance at school,
    it is probably due to the performance of the child's teacher.

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15. Encuentro difícil el uso de manipulativos para explicar por qué funcionan
bien las finanzas personales.   1 2 3 4 5

I find it difficult to use manipulatives to explain to students why personal finance works.

16. Puedo contestar las preguntas de los estudiantes.   1 2 3 4 5

I am typically able to answer students' questions.

17. Me pregunto si tengo las destrezas necesarias para enseñar las finanzas personales. 1 2 3 4 5

I wonder if I have the necessary skills to teach personal finance.

18. Si tengo opción, no invito al Director de la escuela a evaluar mi forma
de enseñar las finanzas personales.   1 2 3 4 5

Given a choice, I do not invite the principal to evaluate my personal finance teaching.

19. Cuando a un estudiante le es difícil comprender un concepto de las finanzas
personales, no encuentro la forma de ayudarle para que lo entienda mejor.   1 2 3 4 5

When a student has difficulty understanding a personal finance concept, I am usually
at a loss as to how to help the student understand it better.

20. Cuando enseño finanzas personales, las preguntas de los estudiantes son
bienvenidas.   1 2 3 4 5

When teaching personal finance, I usually welcome student questions.

21. No sé qué hacer para que los estudiantes tengan mayor interés en el tema
de las finanzas personales.   1 2 3 4 5

I do not know what to do to turn students on to personal finance.

Confidencial   **Uso oficial solamente: # Control_____**

Comportamiento financiero Financial Behaviors

Aquí deseamos medir su comportamiento financiero. Le haremos varias preguntas relacionadas con sus prácticas financieras.   In this section, we would like to measure your personal finance behavior. This section asks questions concerning various financial practices.

1. ¿Mantiene un presupuesto familiar o lista de gastos mensuales de la familia?   ☐ Sí   ☐ No
    Do you have a list of monthly expenses or a monthly family budget?

2. ¿Cubre sus gastos necesarios (comida, casa, ropa, transportación) antes de
    gastar en otras cosas como comer fuera o entretenimiento?   ☐ Sí   ☐ No
    You take care of your financial needs (food, shelter, clothing, transportation)
    before spending on other items such as dining out or entertainment?

3. ¿Guarda dinero cada mes en una cuenta de ahorros o en una cooperativa?   ☐ Sí   ☐ No
    Do you save some money every month to a savings or coop account?

4. ¿Ha obtenido una copia de su informe de crédito en los últimos 12 meses?   ☐ Sí   ☐ No
    Have you obtained a copy of your credit reports within the last 12 months?

5. ¿Ha invertido en un fondo mutuo, una acción o un bono?   ☐ Sí   ☐ No
    Do you own a mutual fund, stock, or bond?

6. ¿Tiene una póliza de seguro activa de auto o de residencia?   ☐ Sí   ☐ No
    You have auto and homeowner's (or renter's) insurance?

7. ¿Ha escrito sus metas financieras para este año?   ☐ Sí   ☐ No
    You have written down your financial goals for this year?

8. ¿Toma medidas para minimizar sus contribuciones sobre ingreso?   ☐ Sí   ☐ No
    You take steps to keep your income taxes low?

9. ¿Paga cargos de tarjeta ATH cuando la usa?   ☐ Sí   ☐ No
    You pay ATM fees when you use your debit card?

¿Cómo compara su comportamiento financiero con el de sus amistades?
    How do you rate your financial behavior when compared to your peers?

	1	2	3	4	5	6	7	8	9	10
Administro mis finanzas peor				de la misma manera					Mejor
Manage my finances		worse		about the same					better

If you wish to continue in English, please skip to pages 17 – 21. Si desea continuar en español, favor contestar las preguntas de esta página (11) hasta la 16.

Conocimiento financiero

Aquí deseamos medir su conocimiento financiero. Le haremos varias preguntas relacionadas con temas de finanzas personales.

1) David acaba de encontrar un trabajo que le paga $2,000 mensuales netos. Necesita pagar $900 de renta y $150 por la compra mensual. También él gasta $250 en transportación. Si presupuesta $100 para ropa, $200 para restaurantes y $250 para todo lo demás, ¿Cuánto tiempo le tomará ahorrar $600?
   a) 3 meses
   b) 4 meses
   c) 1 mes
   d) 2 meses

2) Roberto y María tienen la misma edad. A los 25 años, María comenzó a ahorrar $2,000 por año mientras Roberto no ahorró nada. A los 50 de edad, Roberto se dio cuenta que necesitaba dinero para su retiro y comenzó a ahorrar $4,000 por año mientras que María continuaba ahorrando sus $2,000 anuales. Ahora tienen 75 años los dos. ¿Quién tiene más dinero en su cuenta?
   a) Van a tener la misma cantidad porque han ahorrado la misma cantidad de dinero
   b) Roberto, porque ahorró más dinero por año
   c) María, porque ahorró más dinero
   d) María, porque su dinero ha crecido por más tiempo con mayores intereses compuestos

3) Si te roban tus tarjetas de crédito y el ladrón carga $1,000 a tu cuenta y notificas a la emisora de la tarjeta tan pronto descubres que te la robaron, ¿Cuál es la cantidad máxima que estás obligado a pagar según la ley federal:
   a) $500
   b) $1,000
   c) Nada
   d) $50

4) Si has causado un accidente de auto, ¿Cuál tipo de seguro de auto va a cubrir el daño a tu carro?
   a) Cubierta completa
   b) Responsabilidad pública
   c) A término
   d) Colisión

5) Muchos programas de ahorro están protegidos por el gobierno federal contra pérdida de valor. ¿Cuál de los siguientes no está protegido contra pérdida?
    a) Un bono de ahorros del gobierno federal
    b) Un certificado de depósito
    c) Un bono emitido por uno de los 50 estados
    d) Un bono del Tesoro de los EE. UU.

6) ¿Cuál de los siguientes instrumentos típicamente NO se asocia con gastar?
    a) Tarjeta de débito
    b) Certificado de depósito
    c) Efectivo
    d) Tarjeta de crédito

7) Muchas personas guardan dinero para cubrir gastos inesperados. Si Juan y Elba han guardado dinero para emergencias, ¿Cuál sería la forma MENOS beneficiosa para ellos si les hiciera falta de inmediato?
    a) Invertida en el pronto pago de su hogar
    b) Cuenta de cheques
    c) Acciones
    d) Cuenta de ahorros

8) ¿Cuál de las siguientes oraciones sobre el IVU es correcta?
    a) El IVU nacional promedia 6%
    b) El gobierno te lo quita de tu sueldo
    c) No lo tienes que pagar si tu ingreso es muy bajito
    d) Te cuesta más lo que compras

9) ¿Bajo cuáles de las siguientes circunstancias sería de beneficio financiero para ti tomar prestado dinero para comprar algo hoy y repagarlo con ingresos futuros?
    a) Cuando necesitas un auto para poder obtener un mejor trabajo
    b) Cuando te hacen falta unas vacaciones buenas
    c) Cuando la ropa que te gusta esté en especial
    d) Cuando la tasa de interés en el préstamo es mayor a la tasa de interés de tu cuenta de ahorros

Confidencial   **Uso oficial solamente: # Control_____**

Información sobre usted

Esta es la sección de información demográfica – personal y profesional.

Información Demográfica

Género: ☐ Hombre   ☐ Mujer   **Edad:** _____ (en años)

Número de personas que viven en su casa: _____

Estado Civil: ☐ Casado   ☐ Soltero / Nunca casado   ☐ Divorciado ☐ Viudo

      ☐ Vuelto a casar   ☐ Separado   ☐ Vive con alguien pero no está casado

Si está casado actualmente, ¿por cuántos años ha estado casado? _____

Favor indicar cuántos hijos tiene. ____

Si tiene hijos ¿ha conversado sobre el tema de finanzas personales con ellos? ☐ N/A ☐ Sí ☐ No

---

¿Quién administra las finanzas del hogar?   ☐ Usted   ☐ Su cónyuge   ☐ Ambos

Vivienda	☐ ¿Es dueño de su hogar? ☐ ¿Alquila su hogar?
	☐ ¿Vive en una casa que no es suya y no paga renta?

Nivel de educación completado (favor marcar solamente uno):

☐ Escuela superior   ☐ Grado asociado   ☐ Bachillerato   ☐ Algo de escuela graduada

   ☐ Maestría   ☐ PhD   ☐ Otro _____

¿A cuál edad se enteró de las finanzas personales? _____   ☐ No me acuerdo

¿Por quién? ☐ padres / familiar   ☐ escuela o maestro(a)   ☐ universidad

Si fue en la escuela, ¿cuál fue la clase? _____ (por ej., matemáticas, estudios

sociales, historia, inglés, etc.)

¿Piensa que esta educación financiera le ha ayudado a administrar sus finanzas personales?

    ☐ N/A ☐ Sí   ☐ No

Confidencial   **Uso oficial solamente: # Control_____**

Preparación Profesional

Información del Patrono: Número de años con la escuela actual_____
Favor indicar el número de años que ha sido maestro _____
Favor indicar los cursos o temas que enseña: ☐ economía ☐ sociología ☐ matemáticas ☐
estudios sociales ☐ comercio ☐ mercadeo   ☐ otro_____
Pueblo donde vive _____
Pueblo donde está localizada la escuela donde enseña _____

Favor indicar si ha tomado algún adiestramiento o curso sobre las finanzas personales

___No   ___Sí   _____Año más reciente   _____# Horas Continuas

¿Quién o cuál organización auspició y dio el adiestramiento o curso?

☐ Alianza   ☐ Depto. Educación   ☐ Otra _____

Este adiestramiento o curso:

¿Le motivó a comenzar a enseñar el tema de finanzas personales en su clase? ___Sí ___No

¿Le motivó a considerar y mejorar sus finanzas personales?   ___ Sí ___No

¿Le aumentó su confianza a enseñar las finanzas personales en su clase?   ___ Sí ___No

---

En una escala del 1 al 10, ¿en cuánto estima que era su nivel de confianza para enseñar las

finanzas personales antes de tomar su adiestramiento?

    1   2   3   4   5   6   7   8   9   10
Poca confianza   Mucha confianza

Luego de tomar el adiestramiento, en una escala del 1 al 10, ¿en cuánto estima que era su nivel

de confianza para enseñar las finanzas personales?

    1   2   3   4   5   6   7   8   9   10
Poca confianza   Mucha confianza

Actualmente, ¿enseña finanzas personales a estudiantes? ☐ Sí   ☐ No

Favor indicar el número de años que has estado enseñando finanzas personales _____

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Confidencial   Uso oficial solamente: # Control_____

Situación Financiera Actual

Si hoy perdiera su empleo, ¿por cuántos meses podría vivir con sus ahorros? _____

¿Cuál es el ingreso bruto anual estimado de la familia?

☐ menos de $20,000   ☐ $20,001 a $35,000   ☐ $35,001 a $50,000

☐ $50,001 a $75,000   ☐ $75,001 a $100,000   ☐ más de $100,000

Favor indicar si piensa que su ingreso es suficiente para su estilo de vida.				
1	2	3	4	5
Nada de adecuado.		Puedo comprar lo que deseo		Sobra para ahorrar

Si tuviera que vender todas sus posesiones materiales (incluyendo su hogar) y convertir todas sus inversiones a efectivo y saldar todas sus deudas, ¿estaría en deuda aún, le quedaría sin deber y sin nada, o le sobraría algo

	1	2	3	4	5
	Estoy en deuda		sin deber y sin nada		Me sobra algo

¿Cuán satisfecho está con su situación financiera en general?

	1	2	3	4	5	6	7	8	9	10
	Muy insatisfecho									Muy satisfecho

¿Cómo clasificaría su conocimiento financiero?

	1	2	3	4	5	6	7	8	9	10
	Muy bajito									Muy alto

¿Cómo clasificaría su conocimiento financiero comparado con sus colegas?

	1	2	3	4	5	6	7	8	9	10
	Sé menos que ellos				Sé lo mismo				Sé más que ellos	

Uso oficial solamente: # Control_____

Ya ha terminado la encuesta en español. Las siguientes páginas contienen las preguntas de las páginas 11- 15 redactadas en inglés.

¡Muchas gracias por su participación en esta encuesta! Si desea enterarse o saber sobre los resultados de esta encuesta, comuníquese con Kurt A. Schindler al correo electrónico kaspr@k-state.edu.

Confidencial   Uso oficial solamente: # Control_____

Financial Knowledge

In this section, we would like to measure your knowledge of personal finance. This section asks questions concerning various personal finance topics.

---

1) David just found a job with a take home pay of $2,000 per month. He must pay $900 for rent and $150 for groceries each month. He alos spends $250 per month on transportation. If he budgets $100 per month for clothing, $200 for restaurants and @250 for everything else, how long will it take him to accumulate savings of $600?
    a. 3 months
    b. 4 months
    c. 1 month
    d. 2 months

2) Rob and Mary are the same age. At age 25, Mary began saving $2,000 a year while Rob saved nothing. At age 50, Rob realized that he needed money for retirement and started saving $4,000 per year while Mary kept saving her $2,000. Now they are both 75 years old. Who has the most money in his or her retirement account?
    a. They would each have the same amount because they put away exactly the same
    b. Rob, because he saved more each year
    c. Mary, because she has put away more money
    d. Mary, because her money has grown for a longer time at compound interest

3) If your credit card is stolen and the thief runs up a total debt of $1,000, but you notify the issuer of the card as soon as you discover it is missing, what is the maximum amount that you can be forced to pay according to Federal law?
    a. $500
    b. $1,000
    c. Nothing
    d. $50

4) If you have caused an accident, which type of automobile insurance would cover damage to your own car?
    a. Comprehensive
    b. Liability
    c. Term
    d. Collision

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5) Many savings programs are protected by the Federal government against loss. Which of the following is not?
   a. A U.S. savings bond
   b. A certificate of deposit at the bank
   c. A bond issued by one of the 50 states
   d. A U.S Treasury bond

6) Which of the following instruments is NOT typically associated with spending?
   a. Debit card
   b. Certificate of deposit
   c. Cash
   d. Credit card

7) Many people put aside money to take care of unexpected expenses. If Juan and Elva have money put aside for emergencies, in which of the following forms would it be of LEAST benefit to them if they needed it right away?
   a. Invested in a down payment on the house
   b. Checking account
   c. Stocks
   d. Savings account

8) Which of the following is true about sales taxes?
   a. The national sales tax percentage rate is 6%
   b. The Federal government will deduct it from your paycheck
   c. You don't have to pay the tax if your income is very low
   d. It makes things more expensive for you to buy

9) Under which of the following circumstances would it be financially beneficial to you to borrow money to buy something now and repay it with future income?
   a. When you need to buy a car to get a much better paying job
   b. When you really need a week vacation
   c. When some clothes you like go on sale
   d. When interest on the loan is greater than the interest you get on your savings.

Confidencial   **Uso oficial solamente: # Control_____**

Information about You

In this section, we would like to learn more about you personally and professionally

Demographics

Gender: ☐ Male   ☐ Female   **Age:** _____ (in years)

Number of members in your household: _____

Marital Status: ☐ Married   ☐ Single / Never married   ☐ Divorced   ☐ Widowed

☐ Remarried   ☐ Separated   ☐ Living with someone, not married

If currently married, how many years have you been married? _____

Please indicate how many children you have ____

If you have children, do you discuss personal finances with them? ☐ N/A ☐ Yes   ☐ No

---

Who manages the family finances? ☐ You   ☐ Your spouse   ☐ Both

Do you ☐ Own your home?   ☐ Rent your home?

☐ Live in a home that is not yours and you pay no rent

Level of highest completed education (please check one):

☐ High School Diploma   ☐ Associate Degree   ☐ Bachelor's Degree

☐ Some Graduate School   ☐ Master's Degree   ☐ Ph.D.

At what age were you first introduced to personal finances? _____   ☐ Don't remember

By whom?   ☐ Parents / family   ☐ High School Teacher / Class   ☐ College

If high school or college, what class? _____ (for ex., math, social studies, etc.)

Do you think this education has helped you manage your finances? ☐ N/A ☐ Yes   ☐ No

Professional Preparation

Employer Information: Years in Current School _____
Please indicate how many years you have been a teacher _____
Please indicate the course(s) you currently teach: □ Economics □ sociology □ mathematics, □
social sciences □ commercial □ marketing □ other_____
Town where you live_____ Town where your school is located _____

Please indicate if you have taken a training course on personal finances

___No   ___Yes   ____Most Recent Year   ____Hours Continuing Education

What organization provided the training □ Alliance   □ Dept. Education   □ Other _____

Did this training:

     Cause you to start teaching personal finances in your course lessons?   ___Yes __No

     Cause you to take a closer look at your own personal finances?   ___Yes __No

     Increase your confidence for teaching personal finance in course lessons? ___Yes __No

---

On a scale of 1 to 10, where would you indicate your level of confidence for teaching personal finances was **before** you took the training hours?

      1   2   3   4   5   6   7   8   9   10
      Little Confidence   Great Confidence

After you took the training hours, on a scale of 1 to 10, where would you indicate your level of confidence for teaching personal finances was?

      1   2   3   4   5   6   7   8   9   10
      Little Confidence   Great Confidence

Are you currently teaching personal finance? □ Yes   □ No

                      Years you have taught personal finance_____

Confidencial   Uso oficial solamente: # Control_____

Current financial situation

___

If you lost your job today, how many months could you live using your savings? _____

___

What is your household's approximate annual gross income (before taxes)?

☐ Less than $20,000   ☐ $20,001 to $35,000   ☐ $35,001 to $50,000

☐ $50,001 to $75,000   ☐ $75,001 to $100,000   ☐ More than $100,000

___

Please indicate the extent to which you think your income is enough to live on.

1	2	3	4	5
Not at all adequate		I can afford most everything		And save money

___

Suppose you were to sell all of your major possessions (including your home), turn all of your investments and other assets into cash, and pay off all your debts. Would you be in debt, breakeven of have something left over?

1	2	3	4	5
Be in serious debt		Breakeven		Have money left over

___

How satisfied are you with your overall current financial situation?

1	2	3	4	5	6	7	8	9	10
Very Dissatisfied									Very Satisfied

___

How would you rate your financial knowledge?

1	2	3	4	5	6	7	8	9	10
Lowest level									Highest level

___

How do you rate your financial knowledge when compared to your peers?

1	2	3	4	5	6	7	8	9	10
I know less				I know about the same					I know more

___

Thank you for your participation in our research study!

If you would like to learn about the results of the study, please contact Kurt A. Schindler, kaspr@k-state.edu at the conclusion of the study.

Teacher Capacity Measurement   **Spring, 2013**

Appendix B - Financial Education Programs

Table B.1 Financial Education Programs

Program Title/Sponsor	Source
NEFE	http://hsfpp.nefe.org/loadFile.cfm?contentid=454
Jump$tart	http://www.jumpstart.org/national-standards.html
Council Economic Education	http://www.financingyourfuture.councilforeconed.org/resources/related_lessons.php?lid=67809
CYFI	http://childfinanceinternational.org/images/CYFI_Education_Guide_Feb16.pdf
Aflateen	http://www.aflatoun.org/programme/programme-selected/five-core-elements
Boy Scouts Personal Management MB	http://www.scouting.org/scoutsource/BoyScouts/AdvancementandAwards/MeritBadges/mb-PERM.aspx
Jr. Achievement	http://www.ja.org/programs/programs_high_overview_obj.shtml
Girl Scouts	http://www.girlscouts.org/for_adults/volunteering/money_earning.asp, http://www.girlscouts.org/program/gs_cookies/pdf/2012_financial_literacy_and_cookie_award_names.pdf
Mymoney.gov (Money Smart FDIC)	http://www.fdic.gov/consumers/consumer/moneysmart/young.html

Appendix C - Survey Invitations

Initial Invitation

¡Hola!

Soy Kurt Schindler, planificador financiero certificado y educador financiero. Me dirijo a ti para invitarte a participar en un estudio, o investigación, sobre los maestros en Puerto Rico y su preparación para enseñar finanzas personales en nuestras escuelas públicas y privadas. Este será el primer estudio de este tipo que se hace en Puerto Rico. El estudio se dirige a maestros de todos los temas de sexto grado a cuarto año y no requiere que haya enseñado finanzas personales a sus estudiantes. Deseamos recopilar información de maestros con y sin experiencia en el tema.

Preparo esta investigación como parte de mis estudios doctorales en la planificación financiera en la universidad de Kansas State. Este estudio nos va a ayudar a entender las necesidades de los maestros en Puerto Rico en cuanto a la enseñanza de las finanzas personales. El tema es de suma importancia para nuestro futuro y tenemos que asegurar que nuestros maestros tengan las herramientas y adiestramiento adecuados para llevar a cabo su enseñanza.

Solicito tu participación y pido que contestes las preguntas de la encuesta. Solamente tienes que hacer click https://kstate.qualtrics.com/SE/?SID=SV_9tOEjp0QnfZLOcJ y esto te llevará a la encuesta en línea. Estimo que te tomará entre 30 y 45 minutos para completar la encuesta.

Esta encuesta es estrictamente confidencial y no tendré acceso a la información personal de los maestros que participan. La Universidad de Kansas State custodia la información y yo tendré acceso solamente a las contestaciones para poder hacer los análisis correspondientes.

Los que participan tienen derecho a ver los resultados una vez haya terminado el estudio y los resultados hayan sido publicados por la Universidad. También voy a rifar unos premios entre los participantes.

Agradezco tu consideración y tiempo. Ten la libertad y bondad de pasar este mensaje a todos los maestros que conoces. Los resultados son más fuertes y válidos con mayor participación. Cuento contigo. ¡Se parte de este proyecto pionero para el bien de Puerto Rico!

Muchas gracias.

Second Invitation

2ndo Aviso (Si ha contestado la encuesta, favor hacer caso omiso)

Se necesita respuestas a la encuesta. Si ha entrado al link y ha terminado de contestar las preguntas - ¡muchas gracias! Si ha entrado al link y no ha completado de contestar todas las preguntas, ¡Favor volver a entrar para completarlas! Si no ha entrado aún, ¡favor entrar para contestar las preguntas!

A todos los maestros de Puerto Rico de grados 6 a 12, escuelas privadas y públicas:

Kurt A. Schindler, les ha invitado a participar en un estudio sobre los maestros en Puerto Rico y su preparación para enseñar finanzas personales en nuestras escuelas públicas y privadas. Este será el primer estudio de este tipo que se hace en Puerto Rico. El estudio se dirige a maestros de todos los temas de sexto grado a cuarto año y no requiere que haya enseñado finanzas personales a sus estudiantes. Deseamos recopilar información de maestros con y sin experiencia en el tema.

Kurt prepara esta investigación como parte de sus estudios doctorales en la planificación financiera en la universidad de Kansas State. Este estudio nos va a ayudar a entender las necesidades de los maestros en Puerto Rico en cuanto a la enseñanza de las finanzas personales. El tema es de suma importancia para nuestro futuro y tenemos que asegurar que nuestros maestros tengan las herramientas y adiestramiento adecuados para llevar a cabo su enseñanza.

Solamente tienes que hacer click https://kstate.qualtrics.com/SE/?SID=SV_9tOEjp0QnfZLOcJ y esto te llevará a la encuesta en línea. Estimamos que te tomará unos 30 minutos para completar la encuesta. Es estrictamente confidencial y no tendremos acceso a la información personal de los maestros que participan. La Universidad de Kansas State custodia la información y Kurt tendrá acceso solamente a las contestaciones para poder hacer los análisis correspondientes.

Agradezco su consideración y tiempo. Tenga la libertad y bondad de pasar este mensaje a todos los maestros que conoces. Los resultados son más fuertes y válidos con mayor participación. Cuento con usted.

¡Sea parte de este proyecto pionero para el bien de Puerto Rico!

Final Invitation

¡Estamos en la recta final – La encuesta para maestros de escuelas privadas y públicas de Puerto Rico de grados 6 a 12 cierra el 26 de junio!

Kurt A. Schindler, le invita a participar en su estudio sobre la preparación para enseñar finanzas personales en nuestras escuelas públicas y privadas. Kurt prepara esta investigación como parte de sus estudios doctorales en la planificación financiera en la universidad de Kansas State. Este será el primer estudio de este tipo que se hace en Puerto Rico. El estudio se dirige a maestros de todos los temas de sexto grado a cuarto año y no requiere que haya enseñado finanzas personales a sus estudiantes. Deseamos recopilar información de maestros con y sin experiencia en el tema.

Solamente tiene que hacer click https://kstate.qualtrics.com/SE/?SID=SV_9tOEjp0QnfZLOcJ y esto le llevará a la encuesta en línea. Estimamos que tomará unos 30 minutos para completar la encuesta. Es estrictamente confidencial y no tendremos acceso a la información personal de los maestros que participan. La Universidad de Kansas State custodia la información y Kurt tendrá acceso solamente a las contestaciones para poder hacer los análisis correspondientes.

Tenga la libertad y bondad de pasar este mensaje a todos los maestros que conoce. Los resultados son más fuertes y válidos con mayor participación.

Gracias por su tiempo, apoyo y consideración.

Appendix D - List of Facebook Pages

Amigos de BPPR

APODERATE

Apoyo Facilitador Docente Edu Esp No despedidos

Apoyo Facilitador Educacion Especial

ASOC.J DEPORTIVA E INTEGRADA PARA NINOS CON DISCAPACIDAD INT Y FISICA, INC

Asociación Pro Jóvenes Escuchas de Carraízo, Inc.

Caguas Dos Facilitadores

Che

CIEM School

Educadores de PR

Educadores Puertorriqueños

Educamos

EducaPR

El Boricuazo

El Circo

El Gangster

El Vocero

Facilitadores Edu Esp Bayamón

Facilitadores Edu Esp Caguas

Farmacia del Pozo

Federación de Maestros

Federación Maestros Pie de lucha

Hogares Rafaela Ybarra

Humacao School Supply

La Burbu

Libros Educativos

LIQUID GLOBAL ECONOMY NEWS

Maestros Centro de PR

Maestros con Corazón

Maestros de Educación Especial

Maestros de Inglés

Maestros del Centro de PR

Maestros Jubilados

Manada 82

Popular

Recursos para Maestros

Recursos y Planes Digitales

WKAQ

WORA TV

Facilitadores Distrito Toa Baja

Appendix E - Facebook Pages Posts and Advertisements

Table E.1 Facebook Pages Posts and Advertisements

Post Date	Post Title	Confirmed Reach
May 29, 2013	Initial Open Invitation	9,084
June 2, 2013	Open Invitation to Survey	80
June 2, 2013	Open Invitation to Survey	61
June 3, 2013	Open Invitation to Survey	108
June 9, 2013	Busco Maestros! (Looking for Teachers)	10,936
June 13, 2013	El Nuevo Dia Newspaper Post	53,536
June 15, 2013	Primera Hora Newspaper Article Post	54
June 21, 2013	¡Estamos en la recta final – la encuesta cierra el 26 de junio!	83
June 25, 2013	La Encuesta Cierra (The Survey is closing)	189
Total Reach		74,248

Appendix F - LinkedIn Posts and Results Table

Table F.1 LinkedIn Posts and Results

Date	Views	Likes	Comments	Post
5/31/2013	238	9	0	Original
6/5/2013	191	6	3	Shorter
6/9/2013	185	2	0	Basic
6/11/2013	152	4	2	General
6/13/2013	159	12	0	END.com link
6/15/2013	167	9	0	PH.com link
6/17/2013				Sin comillas link
Totals	1,092	42	5	

Appendix G - Newspaper Articles on Survey

Table G.1 Newspaper Articles on Survey

Author	Publication	Date	Recommend	Likes	Twitter	Views
Andrés Bosa Blog						1621
Joanisabel Gonzalez			47	3	4	
Zoraida Sais Sanchez				107	4	
Luisa García Pilati						

Appendix H - Objective Financial Knowledge Characteristics of Sample

Table H.1 Objective Financial Knowledge Characteristics of Sample

Question	N	Correct	Incorrect	Coding
Q 1. David just found a job with a take home pay of $2,000 per month. He must pay $900 for rent and $150 for groceries each month. He also spends $250 per month on transportation. If he budgets $100 per month for clothing, $200 for restaurants and $250 for everything else, how long will it take him to accumulate savings of $600?	316	75	241	A=0 Incorrect B=1 Correct C=0 Incorrect D=0 Incorrect
Q 2. Rob and Mary are the same age. At age 25, Mary began saving $2,000 a year while Rob saved nothing. At age 50, Rob realized that he needed money for retirement and started saving $4,000 per year while Mary kept saving her $2,000. Now they are both 75 years old. Who has the most money in his or her retirement account?	316	141	175	A=0 Incorrect B=0 Incorrect C=0 Incorrect D=1 Correct

Q 3. If your credit card is stolen and the thief runs up a total debt of $1,000, but you notify the issuer of the card as soon as you discover it is missing, what is the maximum amount that you can be forced to pay according to Federal law?	316	288	28	A=0 Incorrect B=0 Incorrect C=0 Incorrect D=1 Correct
Q 4. If you have caused an accident, which type of automobile insurance would cover damage to your own car?	316	257	59	A=0 Incorrect B=0 Incorrect C=0 Incorrect D=1 Correct
Q 5. Many savings programs are protected by the Federal government against loss. Which of the following is not?	316	199	117	A=0 Incorrect B=0 Incorrect C=1 Correct D=0 Incorrect
Q 6. Which of the following instruments is NOT typically associated with spending?	316	300	16	A=1 Correct B=0 Incorrect C=0 Incorrect D=0 Incorrect
Q 7. Many people put aside money to take care of unexpected expenses. If Juan and Elva have money put aside for emergencies, in which of the following forms would it be of LEAST benefit to them if they needed it right away?	316	147	169	A=1 Correct B=0 Incorrect C=0 Incorrect D=0 Incorrect
Q 8. Which of the following is true about	316	176	140	A=0 Incorrect

sales taxes?				B=0 Incorrect
				C=0 Incorrect
				D=1 Correct
Q 9. Under which of the following circumstances would it be financially beneficial to you to borrow money to buy something now and repay it with future income?	316	202	114	A=1 Correct
				B=0 Incorrect
				C=0 Incorrect
				D=0 Incorrect

Appendix I - Teacher Efficacy Scale Characteristics of Sample

Table I.1 Teacher Efficacy Scale Characteristics of Sample

Question	N	Mean	SD
Q 1. The amount a student can learn is primarily related to family background. (reverse coded)	316	4.17	1.49
Q 2. If students aren't disciplined at home, they aren't likely to accept any discipline. (reverse coded)	316	4.35	1.48
Q 3. When I really try, I can get through to most difficult students.	316	1.68	.95
Q 4. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement. (reverse coded)	316	4.16	1.43
Q 5. If parents would do more for their children, I could do more. (reverse coded)	316	5.14	1.15
Q 6. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.	316	1.97	.98
Q 7. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him/her quickly.	316	1.88	.97
Q 8. If one of my students couldn't do a class Assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.	316	2.20	1.18
Q 9. If I really try hard, I can get through to even the most difficult or unmotivated student.	316	1.73	.96
Q 10. When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment. (reverse coded)	316	3.21	1.46
Total Score	316	39.52	5.83

Appendix J - Financial Self-Efficacy Characteristics of Sample

Table J.1 Financial Self-Efficacy Characteristics of Sample

Question	N	Mean	SD	Coding
Q 1. It is hard to stick to my spending plan when unexpected expenses arise.	316	2.02	.87	1=Exactly True 4= Not at all True
Q 2. It is challenging to make progress toward my financial goals.	316	1.91	.80	1=Exactly True 4= Not at all True
Q 3. When unexpected expenses occur I usually have to use credit.	316	2.73	1.00	1=Exactly True 4= Not at all True
Q 4. When faced with a financial challenge, I have a hard time figuring out a solution.	316	2.76	.90	1=Exactly True 4= Not at all True
Q 5. I lack confidence in my ability to manage my finances.	316	3.16	.91	1=Exactly True 4= Not at all True
Q 6. I worry about running out of money in retirement.	316	1.70	.92	1=Exactly True 4= Not at all True
Total Financial Self-Efficacy Score	316	14.28	3.72	

Appendix K - Financial Behavior Characteristics of Sample

Observations of the components of the financial behavior assessment yielded some interesting results that will need to be addressed in further research. For example, the question with the fewest number of positive responses asked if the respondent took care of financial needs before spending on discretionary items, such as entertainment. Only 5.4% (n=17) answered in the affirmative. Interestingly, the question with the highest number of positive responses was related to investments. This may be due to over half (63%) of respondents indicating they owned a mutual fund, stock, or bond at the time of the survey.

Table K.1 Financial Behavior Characteristics of Sample

Item	N	Mean	SD
Q 1. Do you have a list of monthly expenses or a monthly family budget?	316	.81	.395
Q 2. Do you take care of your financial needs (food, shelter, clothing, transportation) before spending on other items such as dining out or entertainment?	316	.95	.226
Q 3. Do you save some money every month to a savings or coop account?	316	.73	.446
Q 4. Have you obtained a copy of your credit reports within the last 12 months?	316	.50	.501
Q 5. Do you own a mutual fund, stock, or bond?	316	.37	.484
Q 6. Do you have auto and homeowner's (or renter's) insurance?	316	.74	.439
Q 7. Have you written down your financial goals for this year?	316	.39	.489
Q 8. Do you take steps to keep your income taxes low?	316	.64	.480
Q 9. Do you pay ATM fees when you use your debit card? (reverse coded)	316	.66	.476

Appendix L - Personal Finance Efficacy Beliefs Characteristics of Sample

Table L.1 Personal Finance Efficacy Beliefs Characteristics of Sample

Question	N	Mean	SD
1. When a student does better than usual in personal finance, it is often because the teacher exerted a little extra effort. (reverse coded)	316	3.47	.94
2. I continually find better ways to teach personal finance. (reverse coded)	316	3.42	.97
3. Even if I try very hard, I do not teach personal finance as well as I teach most subjects.	316	3.06	1.01
4. When the personal finance grades of students improve, it is often due to their teacher having found a more effective teaching approach. (reverse coded)	316	3.80	.92
5. I know how to teach personal finance concepts effectively. (reverse coded)	316	3.23	1.10
6. I do not try to be very effective in monitoring personal finance activities.	316	3.32	1.01
7. If students are underachieving in personal finance, it is most likely due to ineffective personal finance teaching. (reverse coded)	316	2.95	1.05
8. I generally teach personal finance ineffectively.	316	3.73	1.05
9. The inadequacy of a student's personal finance background can be overcome by good teaching. (reverse coded)	316	4.23	.82
10. When a low achieving child progresses in personal finance, it is usually due to extra attention given by the teacher. (reverse coded)	316	3.58	.95
11. I understand personal finance well enough to be effective in	316	3.42	1.15

teaching high school level personal finance. (reverse coded)			
12. The teacher is generally responsible for the achievement of students in personal finance. (reverse coded)	316	3.27	1.03
13. Students' achievements in personal finance is directly related to their teacher's effectiveness in personal finance teaching. (reverse coded)	316	3.50	.96
14. If parents comment that their child is showing more interest in personal finance at school, it is probably due to the performance of the child's teacher. (reverse coded)	316	3.71	.93
15. I find it difficult to use manipulatives to explain to students why personal finance works.	316	3.44	1.14
16. I am typically able to answer students' questions. (reverse coded)	316	3.56	.94
17. I wonder if I have the necessary skills to teach personal finance.	316	2.63	1.19
18. Given a choice, I do not invite the principal to evaluate my personal finance teaching.	316	3.51	1.17
19. When a student has difficulty understanding a personal finance concept, I am usually at a loss as to how to help the student understand it better.	316	3.66	1.09
20. When teaching personal finance, I usually welcome student questions. (reverse coded)	316	4.33	.90
21. I do not know what to do to turn students on to personal finance.	316	3.34	1.19
Total Personal Finance Teaching Efficacy Belief Score	316	63.11	9.34

Appendix M - Research Question 1

VIF Table

Table M.1 VIF and Tolerance for the Independent Variables

	Tolerance	*VIF*	*Average*
FinSat	.542	1.843	
FB	.655	1.562	
FSES	.592	1.689	
Sbj FinKnow	.534	1.872	1.74
TES	.922	1.084	
Course	.834	1.200	1.54
Age	.799	1.251	
Gndr	.872	1.146	
Married	.800	1.249	
Home	.762	1.313	
Educ	.924	1.083	
Inc	.737	1.357	1.39

Histogram

Figure M.1 Histogram of the Standardized Residuals of the Dependent Variable Objective Financial Knowledge

Histogram

Dependent Variable: FKTotal

Mean = 1.26E-16
Std. Dev. = 0.981
N = 316

227
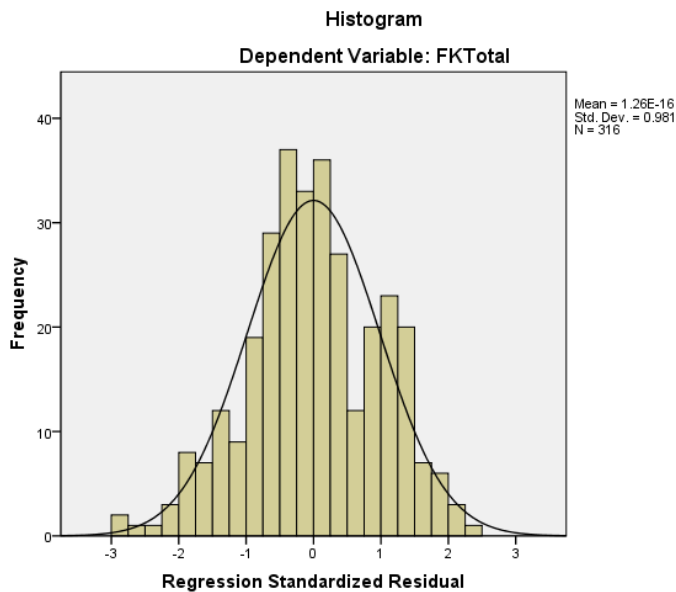
P-P Plot

Figure M.2 Normal P-P Plot of Regression Standardized Residual Objective Financial Knowledge

Hierarchical Regressions

Notes

Output Created		02-Mar-2014 06:50:13
Comments		
Input	Data	C:\Users\Kurt\Documents\K State\Dissertation\Survey Data\Data Completed Surveys 6 30 13 UPDTD 3 2 14.sav
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	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	316
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE ZPP /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT FKTotal /METHOD=ENTER FBtotal FinKnow FinSat FSEStotal /METHOD=ENTER TEStotalnew FinTrng /METHOD=ENTER Married OwnHome College Income GNDR AGE /RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID) /CASEWISE PLOT(ZRESID) OUTLIERS(3).

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	Elapsed Time	00:00:00.489
	Memory Required	19632 bytes
	Additional Memory Required for Residual Plots	464 bytes

[DataSet1] C:\Users\Kurt\Documents\K State\Dissertation\Survey Data\Data Completed Surveys 6 30 13 UPDTD 3 2 14.sav

Descriptive Statistics

	Mean	Std. Deviation	N
FKTotal	4.5728	1.60488	316
FBtotal	5.7816	1.82916	316
FinKnow	5.83	2.420	316
FinSat	5.09	2.789	316
FSEStotal	14.2753	3.71486	316
TEStotalnew	39.5190	5.82520	316
FinTrng	.40	.490	316
Married	.5538	.49789	316
OwnHome	.7880	.40939	316
College	.7405	.43905	316
Income	.5348	.49958	316
GNDR	.87	.337	316
AGE	45.02	9.498	316

Correlations

		FKTotal	FBtotal	FinKnow	FinSat	FSEStotal	TEStotalnew	FinTrng	Married	OwnHome	College	Income	GNDR	AGE
Pearson Correlation	FKTotal	1.000	.189	.215	.124	.240	.041	.075	.074	.009	.124	-.121	.137	.137
	FBtotal	.189	1.000	.487	.412	.466	.133	.144	.188	.151	.194	-.113	.223	.223
	FinKnow	.215	.487	1.000	.557	.463	.113	.122	.164	.131	.174	-.262	.194	.194
	FinSat	.124	.412	.557	1.000	.544	.142	.184	.286	.068	.246	-.170	.109	.109
	FSEStotal	.240	.466	.463	.544	1.000	.235	.183	.201	.046	.163	-.060	.081	.081
	TEStotalnew	.041	.133	.113	.142	.235	1.000	.024	.068	.075	.035	.070	-.045	-.045

		FKTotal	FBtotal	FinKnow	FinSat	FSEStotal	TEStotalnew	FinTrng	Married	OwnHome	College	Income	GNDR	AGE
	FinTrng	.107	.235	.366	.272	.182	.101	-.003	.182	.080	.080	-.092	.141	.141
	Married	.075	.144	.122	.184	.183	.024	1.000	.235	.006	.401	-.081	.108	.108
	OwnHome	.074	.188	.164	.286	.201	.068	.235	1.000	.064	.277	-.016	.345	.345
	College	.009	.151	.131	.068	.046	.075	.006	.064	1.000	.186	-.143	.107	.107
	Income	.124	.194	.174	.246	.163	.035	.401	.277	.186	1.000	-.171	.234	.234
	GNDR	-.121	-.113	-.262	-.170	-.060	.070	-.081	-.016	-.143	-.171	1.000	-.175	-.175
	AGE	.137	.223	.194	.109	.081	-.045	.108	.345	.107	.234	-.175	1.000	1.000
Sig. (1-tailed)	FKTotal	.	.000	.000	.014	.000	.231	.029	.093	.094	.438	.014	.016	.008
	FBtotal	.000	.	.000	.000	.000	.009	.000	.005	.000	.004	.000	.022	.000
	FinKnow	.000	.000	.	.000	.000	.022	.000	.015	.002	.010	.001	.000	.000
	FinSat	.014	.000	.000	.	.000	.006	.000	.001	.000	.114	.000	.001	.027
	FSEStotal	.000	.000	.000	.000	.	.000	.001	.001	.000	.208	.002	.143	.075
	TEStotalnew	.231	.009	.022	.006	.000	.	.036	.334	.115	.091	.266	.107	.215
	FinTrng	.029	.000	.000	.000	.001	.036	.	.479	.001	.077	.079	.051	.006
	Married	.093	.005	.015	.001	.001	.334	.479	.	.000	.458	.000	.075	.028
	OwnHome	.094	.000	.002	.000	.000	.115	.001	.000	.	.129	.000	.389	.000
	College	.438	.004	.010	.114	.208	.091	.077	.458	.129	.	.000	.006	.029
	Income	.014	.000	.001	.000	.002	.266	.079	.000	.000	.000	.	.001	.000
	GNDR	.016	.022	.000	.001	.143	.107	.051	.075	.389	.006	.001	.	.001
	AGE	.008	.000	.000	.027	.075	.215	.006	.028	.000	.029	.000	.001	.
N	FKTotal	316	316	316	316	316	316	316	316	316	316	316	316	316
	FBtotal	316	316	316	316	316	316	316	316	316	316	316	316	316
	FinKnow	316	316	316	316	316	316	316	316	316	316	316	316	316
	FinSat	316	316	316	316	316	316	316	316	316	316	316	316	316
	FSEStotal	316	316	316	316	316	316	316	316	316	316	316	316	316
	TEStotalnew	316	316	316	316	316	316	316	316	316	316	316	316	316
	FinTrng	316	316	316	316	316	316	316	316	316	316	316	316	316
	Married	316	316	316	316	316	316	316	316	316	316	316	316	316
	OwnHome	316	316	316	316	316	316	316	316	316	316	316	316	316

	College	316	316	316	316	316	316	316	316	316	316	316	316	316
	Income	316	316	316	316	316	316	316	316	316	316	316	316	316
	GNDR	316	316	316	316	316	316	316	316	316	316	316	316	316
	AGE	316	316	316	316	316	316	316	316	316	316	316	316	316

Variables Entered/Removed[b]

Model		Variables Entered	Variables Removed	Method
dimension0	1	FSEStotal, FinKnow, FBtotal, FinSat[a]	.	Enter
	2	TEStotalnew, FinTrng[a]	.	Enter
	3	College, Married, AGE, GNDR, OwnHome, Income[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: FKTotal

Model Summary[d]

Model		R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
						R Square Change	F Change	df1
dimension0	1	.279[a]	.078	.066	1.55104	.078	6.562	4
	2	.281[b]	.079	.061	1.55503	.001	.205	2
	3	.311[c]	.097	.061	1.55496	.018	1.004	6

a. Predictors: (Constant), FSEStotal, FinKnow, FBtotal, FinSat

b. Predictors: (Constant), FSEStotal, FinKnow, FBtotal, FinSat, TEStotalnew, FinTrng

c. Predictors: (Constant), FSEStotal, FinKnow, FBtotal, FinSat, TEStotalnew, FinTrng, College, Married, GNDR, OwnHome, Income

d. Dependent Variable: FKTotal

Model Summary[d]

Model		Change Statistics	
		Sig. F Change	Durbin-Watson
dimension0	1	.000	
	2	.815	
	3	.422	1.828

Model Summary^d

Model	Change Statistics	
	Sig. F Change	Durbin-Watson
1	.000	
dimension0 2	.815	
3	.422	1.828

d. Dependent Variable: FKTotal

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	63.142	4	15.785	6.562	.000^a
	Residual	748.184	311	2.406		
	Total	811.326	315			
2	Regression	64.132	6	10.689	4.420	.000^b
	Residual	747.194	309	2.418		
	Total	811.326	315			
3	Regression	78.703	12	6.559	2.712	.002^c
	Residual	732.623	303	2.418		
	Total	811.326	315			

a. Predictors: (Constant), FSEStotal, FinKnow, FBtotal, FinSat

b. Predictors: (Constant), FSEStotal, FinKnow, FBtotal, FinSat, TEStotalnew, FinTrng

c. Predictors: (Constant), FSEStotal, FinKnow, FBtotal, FinSat, TEStotalnew, FinTrng, College, Married, AGE, GNDR, OwnHome, Income

d. Dependent Variable: FKTotal

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	2.769	.379		7.306	.000					
FBtotal	.058	.058	.066	1.009	.314	.189	.057	.055	.684	1.461
FinKnow	.094	.047	.142	2.019	.044	.215	.114	.110	.598	1.671
FinSat	-.049	.041	-.085	-1.197	.232	.124	-.068	-.065	.581	1.720
FSEStotal	.082	.030	.189	2.743	.006	.240	.154	.149	.622	1.608
2 (Constant)	2.952	.652		4.528	.000					
FBtotal	.057	.058	.065	.979	.329	.189	.056	.053	.681	1.468
FinKnow	.088	.048	.132	1.815	.070	.215	.103	.099	.564	1.774
FinSat	-.051	.041	-.089	-1.232	.219	.124	-.070	-.067	.577	1.732
FSEStotal	.084	.030	.195	2.769	.006	.240	.156	.151	.602	1.661
TEStotalnew	-.005	.016	-.019	-.332	.740	.041	-.019	-.018	.941	1.063
FinTrng	.110	.194	.033	.566	.572	.107	.032	.031	.853	1.173
3 (Constant)	2.724	.828		3.291	.001					
FBtotal	.044	.059	.050	.740	.460	.189	.042	.040	.655	1.526
FinKnow	.071	.050	.107	1.430	.154	.215	.082	.078	.534	1.872
FinSat	-.060	.043	-.104	-1.404	.161	.124	-.080	-.077	.542	1.843
FSEStotal	.087	.031	.202	2.845	.005	.240	.161	.155	.592	1.689
TEStotalnew	-.001	.016	-.003	-.045	.964	.041	-.003	-.002	.922	1.084
FinTrng	.101	.196	.031	.514	.608	.107	.029	.028	.834	1.200

Married	-.005	.197	-.002	-.028	.978	.075	-.002	-.002	.800	1.249
OwnHome	-.046	.245	-.012	-.188	.851	.074	-.011	-.010	.762	1.313
College	-.173	.208	-.047	-.833	.405	.009	-.048	-.045	.924	1.083
Income	.219	.204	.068	1.072	.284	.124	.061	.059	.737	1.357
GNDR	-.341	.279	-.072	-1.225	.221	-.121	-.070	-.067	.872	1.146
AGE	.013	.010	.076	1.248	.213	.137	.071	.068	.799	1.251

a. Dependent Variable: FKTotal

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	TEStotalnew	-.017[a]	-.298	.766	-.017	.944	1.059	.581
	FinTrng	.032[a]	.548	.584	.031	.856	1.169	.564
	Married	.030[a]	.537	.591	.030	.954	1.048	.577
	OwnHome	.027[a]	.476	.635	.027	.910	1.098	.560
	College	-.023[a]	-.420	.675	-.024	.970	1.030	.581
	Income	.082[a]	1.450	.148	.082	.929	1.077	.568
	GNDR	-.086[a]	-1.514	.131	-.086	.923	1.083	.572
	AGE	.094[a]	1.679	.094	.095	.937	1.067	.581
2	Married	.032[b]	.567	.571	.032	.950	1.053	.564
	OwnHome	.024[b]	.419	.676	.024	.899	1.113	.558
	College	-.023[b]	-.415	.678	-.024	.966	1.035	.561
	Income	.082[b]	1.445	.149	.082	.929	1.077	.564
	GNDR	-.085[b]	-1.490	.137	-.085	.915	1.093	.540
	AGE	.092[b]	1.620	.106	.092	.927	1.078	.559

a. Predictors in the Model: (Constant), FSEStotal, FinKnow, FBtotal, FinSat

b. Predictors in the Model: (Constant), FSEStotal, FinKnow, FBtotal, FinSat, TEStotalnew, FinTrng

Excluded Variables[c]

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		Minimum Tolerance
					Tolerance	VIF	
1 TEStotalnew	-.017[a]	-.298	.766	-.017	.944	1.059	.581
FinTrng	.032[a]	.548	.584	.031	.856	1.169	.564
Married	.030[a]	.537	.591	.030	.954	1.048	.577
OwnHome	.027[a]	.476	.635	.027	.910	1.098	.560
College	-.023[a]	-.420	.675	-.024	.970	1.030	.581
Income	.082[a]	1.450	.148	.082	.929	1.077	.568
GNDR	-.086[a]	-1.514	.131	-.086	.923	1.083	.572
AGE	.094[a]	1.679	.094	.095	.937	1.067	.581
2 Married	.032[b]	.567	.571	.032	.950	1.053	.564
OwnHome	.024[b]	.419	.676	.024	.899	1.113	.558
College	-.023[b]	-.415	.678	-.024	.966	1.035	.561
Income	.082[b]	1.445	.149	.082	.929	1.077	.564
GNDR	-.085[b]	-1.490	.137	-.085	.915	1.093	.540
AGE	.092[b]	1.620	.106	.092	.927	1.078	.559

a. Predictors in the Model: (Constant), FSEStotal, FinKnow, FBtotal, FinSat

b. Predictors in the Model: (Constant), FSEStotal, FinKnow, FBtotal, FinSat, TEStotalnew, FinTrng

c. Dependent Variable: FKTotal

Collinearity Diagnostics[a]

Model	Dimension		Eigenvalue	Condition Index	Variance Proportions				
					(Constant)	FBtotal	FinKnow	FinSat	FSEStotal
1		1	4.713	1.000	.00	.00	.00	.01	.00
	dimension1	2	.141	5.777	.08	.03	.01	.63	.01
		3	.072	8.083	.05	.00	.90	.22	.04
		4	.047	10.053	.18	.96	.09	.00	.06
		5	.027	13.143	.69	.00	.00	.15	.89
2		1	6.155	1.000	.00	.00	.00	.00	.00
	dimension1	2	.517	3.451	.00	.00	.00	.00	.00
		3	.161	6.183	.02	.00	.03	.54	.00
		4	.074	9.101	.01	.05	.71	.31	.01
		5	.052	10.915	.02	.86	.26	.00	.00
		6	.031	14.143	.03	.06	.00	.15	.99
		7	.010	24.316	.92	.01	.00	.01	.00
3 dimension0		1	10.707	1.000	.00	.00	.00	.00	.00
		2	.601	4.222	.00	.00	.00	.00	.00
		3	.508	4.591	.00	.00	.00	.00	.00
		4	.303	5.947	.00	.00	.00	.00	.00
		5	.231	6.806	.00	.00	.03	.20	.00
		6	.212	7.103	.00	.00	.03	.05	.00
		7	.162	8.138	.00	.00	.01	.00	.00
	dimension1	8	.098	10.457	.00	.05	.10	.45	.00
		9	.057	13.672	.01	.00	.71	.10	.02
		10	.052	14.305	.01	.81	.12	.01	.01
		11	.037	17.056	.00	.08	.00	.17	.55
		12	.025	20.790	.02	.05	.00	.01	.41
		13	.008	36.539	.96	.00	.00	.00	.01

a. Dependent Variable: FKTotal

Collinearity Diagnostics[a]

Model	Dimension		Variance Proportions							
			TEStotalnew	FinTrng	Married	OwnHome	College	Income	GNDR	AGE
1	dimension1	1								
		2								
		3								
		4								
		5								
2	dimension1	1	.00	.01						
		2	.00	.89						
		3	.02	.05						
		4	.02	.04						
		5	.03	.00						
		6	.05	.00						
		7	.89	.01						
3	dimension1	1	.00	.00	.00	.00	.00	.00	.00	.00
		2	.00	.54	.12	.00	.00	.07	.00	.00
		3	.00	.22	.13	.00	.01	.21	.03	.00
		4	.00	.01	.41	.00	.26	.32	.01	.00
		5	.00	.14	.18	.00	.24	.02	.03	.00
		6	.00	.02	.15	.09	.30	.23	.10	.00
		7	.00	.01	.00	.76	.06	.12	.05	.00
		8	.00	.01	.00	.00	.10	.00	.29	.04
		9	.02	.03	.00	.05	.01	.01	.31	.06
		10	.02	.00	.00	.01	.00	.00	.02	.06

(dimension0)

11	.03	.00	.01	.04	.00	.01	.05	.26
12	.33	.00	.00	.03	.01	.00	.06	.31
13	.59	.01	.00	.01	.00	.00	.06	.27

a. Dependent Variable: FKTotal

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.0976	5.8956	4.5728	.49985	316
Residual	-4.32763	3.51602	.00000	1.52505	316
Std. Predicted Value	-2.951	2.646	.000	1.000	316
Std. Residual	-2.783	2.261	.000	.981	316

a. Dependent Variable: FKTotal

Appendix N - Research Question 2

VIF Table

Table N.1 VIF and Tolerance for the Independent Variables for Research Question 2

	Tolerance	VIF	Average
FinSat	.604	1.656	
FB	.693	1.443	
FSES	.589	1.698	1.600
Course	.880	1.137	
TES	.922	1.084	
FKTotal	.909	1.100	1.353
Age	.800	1.251	
Gndr	.896	1.116	
Married	.800	1.249	
Home	.765	1.307	
Educ	.924	1.083	
Inc	.735	1.361	1.290

Histogram

Figure N.1 Histogram of the Standardized Residuals of the Dependent Variable Subjective Financial Knowledge

Histogram
Dependent Variable: FinKnow

Mean = 1.83E-16
Std. Dev. = 0.981
N = 316
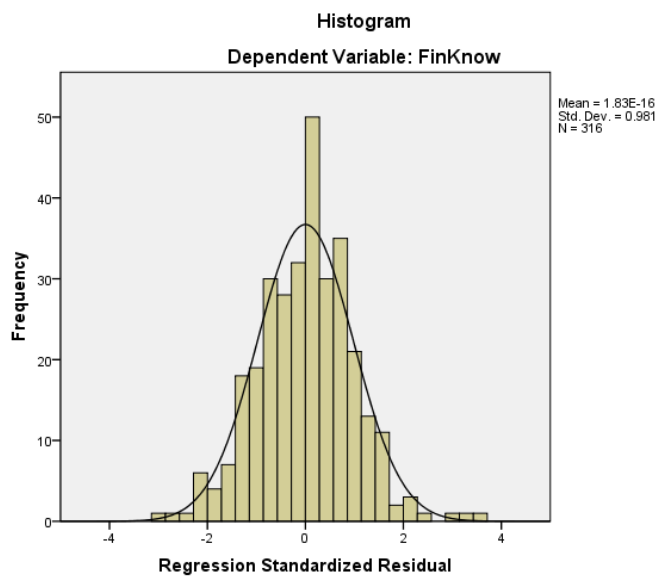
P-P Plot

Figure N.2 Normal P-P Plot of Regression Standardized Residual Subjective
Financial Knowledge

Hierarchical Regressions

Notes

Output Created		02-Mar-2014 07:02:56
Comments		
Input	Data	C:\Users\Kurt\Documents\K State\Dissertation\Survey Data\Data Completed Surveys 6 30 13 UPDTD 3 2 14.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	316
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION
		/DESCRIPTIVES MEAN STDDEV CORR SIG N
		/MISSING LISTWISE
		/STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE ZPP
		/CRITERIA=PIN(.05) POUT(.10)
		/NOORIGIN
		/DEPENDENT FinKnow
		/METHOD=ENTER FBtotal FinSat FSEStotal
		/METHOD=ENTER TEStotalnew FinTrng FKTotal
		/METHOD=ENTER Married OwnHome College Income GNDR AGE
		/RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID)
		/CASEWISE PLOT(ZRESID) OUTLIERS(3).
Resources	Processor Time	00:00:00.500
	Elapsed Time	00:00:00.450
	Memory Required	19632 bytes
	Additional Memory Required for Residual Plots	464 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
FinKnow	5.83	2.420	316
FBtotal	5.7816	1.82916	316
FinSat	5.09	2.789	316
FSEStotal	14.2753	3.71486	316
TEStotalnew	39.5190	5.82520	316
FinTrng	.40	.490	316
FKTotal	4.5728	1.60488	316
Married	.5538	.49789	316
OwnHome	.7880	.40939	316
College	.7405	.43905	316
Income	.5348	.49958	316
GNDR	.87	.337	316
AGE	45.02	9.498	316

Correlations

		FinKnow	FBtotal	FinSat	FSEStotal	TEStotalnew	FinTrng	FKTotal	Married	OwnHome	College	Income	GNDR	AGE
Pearson Correlation	FinKnow	1.000	.487	.557	.463	.113	.366	.122	.164	.131	.174	-.262	.194	.194
	FBtotal	.487	1.000	.412	.466	.133	.235	.144	.188	.151	.194	-.113	.223	.223
	FinSat	.557	.412	1.000	.544	.142	.272	.184	.286	.068	.246	-.170	.109	.109
	FSEStotal	.463	.466	.544	1.000	.235	.182	.183	.201	.046	.163	-.060	.081	.081
	TEStotalnew	.113	.133	.142	.235	1.000	.101	.024	.068	.075	.035	.070	-.045	-.045
	FinTrng	.366	.235	.272	.182	.101	1.000	-.003	.182	.080	.080	-.092	.141	.141
	FKTotal	.215	.189	.124	.240	.041	.107	.075	.074	.009	.124	-.121	.137	.137
	Married	.122	.144	.184	.183	.024	-.003	1.000	.235	.006	.401	-.081	.108	.108
	OwnHome	.164	.188	.286	.201	.068	.182	.235	1.000	.064	.277	-.016	.345	.345
	College	.131	.151	.068	.046	.075	.080	.006	.064	1.000	.186	-.143	.107	.107
	Income	.174	.194	.246	.163	.035	.080	.401	.277	.186	1.000	-.171	.234	.234
	GNDR	-.262	-.113	-.170	-.060	.070	-.092	-.081	-.016	-.143	-.171	1.000	-.175	-.175
	AGE	.194	.223	.109	.081	-.045	.141	.108	.345	.107	.234	-.175	1.000	1.000

Sig. (1-tailed)	FinKnow	.	.000	.000	.000	.022	.000	.015	.002	.010	.001	.000	.000	.000
	FBtotal	.000	.	.000	.000	.009	.000	.005	.000	.004	.000	.022	.000	.000
	FinSat	.000	.000	.	.000	.006	.000	.001	.000	.114	.000	.001	.027	.027
	FSEStotal	.000	.000	.000	.	.000	.001	.001	.000	.208	.002	.143	.075	.075
	TEStotalnew	.022	.009	.006	.000	.	.036	.334	.115	.091	.266	.107	.215	.215
	FinTrng	.000	.000	.000	.001	.036	.	.479	.001	.077	.079	.051	.006	.006
	FKTotal	.000	.000	.014	.000	.231	.029	.093	.094	.438	.014	.016	.008	.008
	Married	.015	.005	.001	.001	.334	.479	.	.000	.458	.000	.075	.028	.028
	OwnHome	.002	.000	.000	.000	.115	.001	.000	.	.129	.000	.389	.000	.000
	College	.010	.004	.114	.208	.091	.077	.458	.129	.	.000	.006	.029	.029
	Income	.001	.000	.000	.002	.266	.079	.000	.000	.000	.	.001	.000	.000
	GNDR	.000	.022	.001	.143	.107	.051	.075	.389	.006	.001	.	.001	.001
	AGE	.000	.000	.027	.075	.215	.006	.028	.000	.029	.000	.001	.	.
N	FinKnow	316	316	316	316	316	316	316	316	316	316	316	316	316
	FBtotal	316	316	316	316	316	316	316	316	316	316	316	316	316
	FinSat	316	316	316	316	316	316	316	316	316	316	316	316	316
	FSEStotal	316	316	316	316	316	316	316	316	316	316	316	316	316
	TEStotalnew	316	316	316	316	316	316	316	316	316	316	316	316	316
	FinTrng	316	316	316	316	316	316	316	316	316	316	316	316	316
	FKTotal	316	316	316	316	316	316	316	316	316	316	316	316	316
	Married	316	316	316	316	316	316	316	316	316	316	316	316	316
	OwnHome	316	316	316	316	316	316	316	316	316	316	316	316	316
	College	316	316	316	316	316	316	316	316	316	316	316	316	316
	Income	316	316	316	316	316	316	316	316	316	316	316	316	316
	GNDR	316	316	316	316	316	316	316	316	316	316	316	316	316
	AGE	316	316	316	316	316	316	316	316	316	316	316	316	316

Variables Entered/Removed[b]

Model		Variables Entered	Variables Removed	Method
dimension0	1	FSEStotal, FBtotal, FinSat[a]		. Enter

2	TEStotalnew, FKTotal, FinTrng[a]		.	Enter
3	College, Married, GNDR, AGE, OwnHome, Income[a]		.	Enter

a. All requested variables entered.

b. Dependent Variable: FinKnow

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
dimension 0	.634[a]	.402	.396	1.881	.402	69.806	3	312
	.665[b]	.442	.432	1.825	.041	7.519	3	309
	.685[c]	.469	.448	1.798	.027	2.580	6	303

a. Predictors: (Constant), FSEStotal, FBtotal, FinSat

b. Predictors: (Constant), FSEStotal, FBtotal, FinSat, TEStotalnew, FKTotal, FinTrng

c. Predictors: (Constant), FSEStotal, FBtotal, FinSat, TEStotalnew, FKTotal, FinTrng, College, Married, GNDR, AGE, OwnHome, Income

d. Dependent Variable: FinKnow

Model Summary[d]

Model		Change Statistics	
		Sig. F Change	Durbin-Watson
dimension0	1	.000	
	2	.000	
	3	.019	1.830

d. Dependent Variable: FinKnow

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	741.180	3	247.060	69.806	.000[a]
	Residual	1104.247	312	3.539		
	Total	1845.427	315			
2	Regression	816.306	6	136.051	40.850	.000[b]
	Residual	1029.121	309	3.330		

	Total	1845.427	315			
3	Regression	866.322	12	72.194	22.341	.000ᶜ
	Residual	979.105	303	3.231		
	Total	1845.427	315			

a. Predictors: (Constant), FSEStotal, FBtotal, FinSat

b. Predictors: (Constant), FSEStotal, FBtotal, FinSat, TEStotalnew, FKTotal, FinTrng

c. Predictors: (Constant), FSEStotal, FBtotal, FinSat, TEStotalnew, FKTotal, FinTrng, College, Married, GNDR, AGE, OwnHome, Income

d. Dependent Variable: FinKnow

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	.862	.457		1.886	.060					
FBtotal	.358	.067	.271	5.343	.000	.487	.290	.234	.747	1.339
FinSat	.324	.046	.373	6.981	.000	.557	.368	.306	.672	1.488
FSEStotal	.087	.036	.134	2.434	.015	.463	.137	.107	.634	1.578
2 (Constant)	.773	.789		.980	.328					
FBtotal	.310	.066	.234	4.709	.000	.487	.259	.200	.728	1.374
FinSat	.291	.046	.335	6.362	.000	.557	.340	.270	.650	1.539
FSEStotal	.079	.036	.121	2.203	.028	.463	.124	.094	.597	1.676
TEStotalnew	-.007	.018	-.017	-.380	.704	.113	-.022	-.016	.941	1.063
FinTrng	.944	.221	.191	4.272	.000	.366	.236	.181	.902	1.109
FKTotal	.121	.066	.080	1.815	.070	.215	.103	.077	.931	1.074
3 (Constant)	1.014	.972		1.044	.297					
FBtotal	.282	.067	.213	4.245	.000	.487	.237	.178	.693	1.443
FinSat	.282	.047	.325	6.032	.000	.557	.327	.252	.604	1.656
FSEStotal	.089	.036	.137	2.514	.012	.463	.143	.105	.589	1.698
TEStotalnew	.000	.018	-.001	-.015	.988	.113	-.001	-.001	.922	1.084
FinTrng	.909	.221	.184	4.122	.000	.366	.230	.173	.880	1.137
FKTotal	.095	.066	.063	1.430	.154	.215	.082	.060	.909	1.100
Married	.036	.227	.007	.157	.876	.122	.009	.007	.800	1.249
OwnHome	-.325	.283	-.055	-1.148	.252	.164	-.066	-.048	.765	1.307
College	.202	.240	.037	.841	.401	.131	.048	.035	.924	1.083
Income	-.118	.236	-.024	-.497	.620	.174	-.029	-.021	.735	1.361
GNDR	-.991	.318	-.138	-3.118	.002	-.262	-.176	-.130	.896	1.116
AGE	.016	.012	.061	1.303	.193	.194	.075	.055	.800	1.251

a. Dependent Variable: FinKnow

Excluded Variables^c

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	TEStotalnew	-.008^a	-.167	.868	-.009	.944	1.059	.615
	FinTrng	.195^a	4.358	.000	.240	.908	1.101	.634
	FKTotal	.091^a	2.019	.044	.114	.934	1.070	.616
	Married	-.010^a	-.226	.821	-.013	.954	1.048	.630
	OwnHome	-.022^a	-.482	.630	-.027	.911	1.098	.633
	College	.060^a	1.350	.178	.076	.976	1.024	.633
	Income	.009^a	.192	.848	.011	.929	1.076	.634
	GNDR	-.165^a	-3.782	.000	-.210	.966	1.036	.632
	AGE	.086^a	1.930	.055	.109	.949	1.054	.633
2	Married	.000^b	-.005	.996	.000	.949	1.054	.593
	OwnHome	-.044^b	-.982	.327	-.056	.901	1.110	.596
	College	.054^b	1.247	.213	.071	.970	1.031	.596
	Income	.002^b	.048	.962	.003	.923	1.084	.597
	GNDR	-.151^b	-3.508	.001	-.196	.945	1.058	.595
	AGE	.061^b	1.388	.166	.079	.925	1.081	.596

a. Predictors in the Model: (Constant), FSEStotal, FBtotal, FinSat

b. Predictors in the Model: (Constant), FSEStotal, FBtotal, FinSat, TEStotalnew, FKTotal, FinTrng

c. Dependent Variable: FinKnow

Collinearity Diagnostics^a

Model	Dimension		Eigenvalue	Condition Index	Variance Proportions				
					(Constant)	FBtotal	FinSat	FSEStotal	TEStotalnew
1		1	3.785	1.000	.00	.00	.01	.00	
dimension0	dimension1	2	.140	5.204	.07	.03	.81	.01	
		3	.048	8.863	.23	.96	.01	.09	
		4	.027	11.777	.69	.00	.17	.90	

			Eigenvalue	Condition Index					
2		1	6.124	1.000	.00	.00	.00	.00	.00
		2	.528	3.405	.00	.00	.00	.00	.00
		3	.171	5.993	.01	.00	.66	.00	.01
	dimension1	4	.081	8.705	.01	.09	.09	.01	.02
		5	.056	10.484	.03	.82	.06	.00	.06
		6	.031	14.126	.03	.08	.19	.99	.04
		7	.010	24.540	.92	.01	.00	.00	.87
3		1	10.697	1.000	.00	.00	.00	.00	.00
		2	.593	4.247	.00	.00	.00	.00	.00
		3	.517	4.549	.00	.00	.00	.00	.00
		4	.303	5.944	.00	.00	.00	.00	.00
		5	.224	6.915	.00	.00	.09	.00	.00
		6	.194	7.433	.00	.01	.35	.00	.00
	dimension1	7	.164	8.080	.00	.01	.01	.00	.00
		8	.119	9.484	.00	.00	.13	.00	.00
		9	.070	12.359	.00	.34	.16	.01	.00
		10	.051	14.463	.02	.50	.04	.00	.05
		11	.036	17.161	.00	.08	.20	.56	.04
		12	.025	20.778	.02	.06	.02	.42	.32
		13	.008	36.803	.96	.00	.00	.00	.58

a. Dependent Variable: FinKnow

Collinearity Diagnostics[a]

Model		Dimension		Variance Proportions							
				FinTrng	FKTotal	Married	OwnHome	College	Income	GNDR	AGE
dimension0	1	dimension n1	1								
			2								
			3								
			4								
	2	dimension n1	1	.01	.00						
			2	.93	.00						

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	3	.05	.08						
	4	.00	.85						
	5	.01	.03						
	6	.00	.01						
	7	.00	.03						
3	1	.00	.00	.00	.00	.00	.00	.00	.00
	2	.60	.00	.12	.00	.00	.07	.00	.00
	3	.23	.00	.13	.00	.01	.21	.03	.00
	4	.01	.00	.41	.00	.26	.31	.01	.00
	5	.05	.00	.32	.04	.50	.14	.00	.00
	6	.08	.00	.01	.00	.08	.17	.14	.00
	7	.01	.04	.00	.80	.03	.06	.00	.00
dimensio n1	8	.00	.38	.00	.02	.02	.02	.36	.01
	9	.00	.44	.00	.01	.07	.00	.13	.04
	10	.00	.09	.00	.05	.02	.00	.13	.16
	11	.00	.02	.01	.04	.00	.01	.07	.22
	12	.00	.00	.00	.03	.01	.00	.07	.31
	13	.01	.02	.00	.01	.00	.00	.06	.26

a. Dependent Variable: FinKnow

Casewise Diagnostics[a]

Case Number		Std. Residual	FinKnow	Predicted Value	Residual
	19	3.545	10	3.63	6.373
dimens ion0	175	-3.056	1	6.49	-5.494
	247	3.162	9	3.32	5.684

a. Dependent Variable: FinKnow

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.80	10.23	5.83	1.658	316
Residual	-5.494	6.373	.000	1.763	316
Std. Predicted Value	-2.428	2.656	.000	1.000	316
Std. Residual	-3.056	3.545	.000	.981	316

a. Dependent Variable: FinKnow

Appendix O - Research Question 3

Hierarchical Logistic Regressions

LOGISTIC REGRESSION VARIABLES PFTEBIHIGH
 /METHOD=ENTER FBtotal FinKnow FinSat FSEStotal
 /METHOD=ENTER TEStotalnew FinTrng FKTotal
 /METHOD=ENTER Married OwnHome College Income AGE GNDR
 /CONTRAST (FinTrng)=Indicator
 /CONTRAST (Married)=Indicator
 /CONTRAST (OwnHome)=Indicator
 /CONTRAST (College)=Indicator
 /CONTRAST (Income)=Indicator
 /CONTRAST (GNDR)=Indicator
 /SAVE=PRED PGROUP COOK LEVER DFBETA RESID LRESID SRESID ZRESID
DEV
 /CLASSPLOT
 /CASEWISE OUTLIER(2)
 /PRINT=GOODFIT CORR ITER(1) CI(95)
 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

Logistic Regression

Notes

Output Created		02-Mar-2014 06:22:44
Comments		
Input	Data	C:\Users\Kurt\Documents\K State\Dissertation\Survey Data\Data Completed Surveys 6 30 13 UPDTD 2 28 14.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	316
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing

Syntax		LOGISTIC REGRESSION VARIABLES PFTEBIHIGH
		/METHOD=ENTER FBtotal FinKnow FinSat FSEStotal
		/METHOD=ENTER TEStotalnew FinTrng FKTotal
		/METHOD=ENTER Married OwnHome College Income AGE GNDR
		/CONTRAST (FinTrng)=Indicator
		/CONTRAST (Married)=Indicator
		/CONTRAST (OwnHome)=Indicator
		/CONTRAST (College)=Indicator
		/CONTRAST (Income)=Indicator
		/CONTRAST (GNDR)=Indicator
		/SAVE=PRED PGROUP COOK LEVER DFBETA RESID LRESID SRESID ZRESID DEV
		/CLASSPLOT
		/CASEWISE OUTLIER(2)
		/PRINT=GOODFIT CORR ITER(1) CI(95)
		/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.032
	Elapsed Time	00:00:00.031
Variables Created or Modified	PRE_4	Predicted probability
	PGR_4	Predicted group
	COO_4	Analog of Cook's influence statistics
	LEV_4	Leverage value
	RES_4	Difference between observed and predicted probabilities
	LRE_4	Logit residual
	SRE_4	Standard residual
	ZRE_4	Normalized residual
	DEV_4	Deviance value
	DFB0_4	DFBETA for constant
	DFB1_4	DFBETA for FBtotal
	DFB2_4	DFBETA for FinKnow
	DFB3_4	DFBETA for FinSat
	DFB4_4	DFBETA for FSEStotal
	DFB5_4	DFBETA for TEStotalnew
	DFB6_4	DFBETA for FinTrng(1)
	DFB7_4	DFBETA for FKTotal
	DFB8_4	DFBETA for Married(1)

DFB9_4	DFBETA for OwnHome(1)	
DFB10_4	DFBETA for College(1)	
DFB11_4	DFBETA for Income(1)	
DFB12_4	DFBETA for AGE	
DFB13_4	DFBETA for GNDR(1)	

[DataSet1] C:\Users\Kurt\Documents\K State\Dissertation\Survey Data\Data Completed Surveys 6 30 13 UPDTD 2 28 14.sav

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	316	100.0
	Missing Cases	0	.0
	Total	316	100.0
Unselected Cases		0	.0
Total		316	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
dimens .00	0
ion0 1.00	1

Categorical Variables Codings

			Parameter coding
		Frequency	(1)
GNDR	0	41	1.000
	1	275	.000
Married	.00	141	1.000
	1.00	175	.000
OwnHome	.00	67	1.000
	1.00	249	.000

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College	.00	82	1.000
	1.00	234	.000
Income	.00	147	1.000
	1.00	169	.000
FinTrng	0	191	1.000
	1	125	.000

Block 0: Beginning Block

Iteration History[a,b,c]

Iteration		-2 Log likelihood	Coefficients
			Constant
Step 0	1	347.128	-1.051
	2	346.334	-1.164
	3	346.334	-1.167
	4	346.334	-1.167

a. Constant is included in the model.
b. Initial -2 Log Likelihood: 346.334
c. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Classification Table[a,b]

Observed		Predicted		
		High PFTEBI Score		
		.00	1.00	Percentage Correct
Step 0 High PFTEBI Score	.00	241	0	100.0
	1.00	75	0	.0
Overall Percentage				76.3

a. Constant is included in the model.
b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-1.167	.132	77.940	1	.000	.311

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	FBtotal	24.507	1	.000
		FinKnow	52.204	1	.000
		FinSat	20.939	1	.000
		FSEStotal	9.697	1	.002
	Overall Statistics		56.012	4	.000

Block 1: Method = Enter

Iteration History[a,b,c,d]

Iteration		-2 Log likelihood	Coefficients				
			Constant	FBtotal	FinKnow	FinSat	FSEStotal
Step 1	1	295.181	-2.831	.111	.249	.031	-.033
	2	278.410	-4.588	.204	.427	.027	-.046
	3	276.303	-5.506	.255	.518	.020	-.050
	4	276.254	-5.674	.264	.534	.019	-.051
	5	276.254	-5.678	.264	.535	.019	-.051
	6	276.254	-5.678	.264	.535	.019	-.051

a. Method: Enter

b. Constant is included in the model.

c. Initial -2 Log Likelihood: 346.334

d. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	70.080	4	.000
	Block	70.080	4	.000
	Model	70.080	4	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	276.254[a]	.199	.299

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	6.028	8	.644

Contingency Table for Hosmer and Lemeshow Test

		High PFTEBI Score = .00		High PFTEBI Score = 1.00		
		Observed	Expected	Observed	Expected	Total
Step 1	1	31	31.683	1	.317	32
	2	31	30.970	1	1.030	32
	3	32	29.726	0	2.274	32
	4	28	29.224	5	3.776	33
	5	27	26.752	5	5.248	32
	6	26	24.673	6	7.327	32
	7	19	21.805	13	10.195	32
	8	20	19.594	12	12.406	32
	9	18	17.027	14	14.973	32
	10	9	9.545	18	17.455	27

Classification Table[a]

Observed		Predicted		
		High PFTEBI Score		
		.00	1.00	Percentage Correct
Step 1	High PFTEBI Score .00	228	13	94.6
	1.00	53	22	29.3
	Overall Percentage			79.1

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	FBtotal	.264	.112	5.567	1	.018	1.302	1.046	1.622
	FinKnow	.535	.101	27.803	1	.000	1.707	1.399	2.082
	FinSat	.019	.071	.070	1	.792	1.019	.887	1.170
	FSEStotal	-.051	.052	.949	1	.330	.950	.858	1.053

Constant	-5.678	.930	37.284	1	.000	.003			

a. Variable(s) entered on step 1: FBtotal, FinKnow, FinSat, FSEStotal.

Correlation Matrix

		Constant	FBtotal	FinKnow	FinSat	FSEStotal
Step 1	Constant	1.000	-.446	-.512	.219	-.382
	FBtotal	-.446	1.000	-.036	-.137	-.283
	FinKnow	-.512	-.036	1.000	-.316	-.109
	FinSat	.219	-.137	-.316	1.000	-.375
	FSEStotal	-.382	-.283	-.109	-.375	1.000

```
Step number: 1

            Observed Groups and Predicted Probabilities

        20 +                                                                        +
            I1                                                                       I
            I0                                                                       I
    F       I0                                                                       I
    R    15 +00                                                                      +
    E       I00                                                                      I
    Q       I00        0                                                             I
    U       I0000      0                                                             I
    E    10 +0000      0                                                             +
    N       I0000   0 0 1  1 1                                                       I
    C       I00000000 0 0   0 0     0                      1   1                      I
    Y       I0000000 0 0   000   1100       1       1 0  11  1                        I
         5 +00000000010 00001 1100       0 1  11 01 10  1                            +
            I00000000000100000 0100    111 0 0  11 001101 0            1 1            I
            I0000000000000000000000000 0 000101010000000000 01  111 01111 1 1 0  1 1 1  I
            I000000000000000000000000010000000000100000000010100000 00100 1 0 0  011 1 100    1 0  I
Predicted --------+--------+--------+--------+--------+--------+--------+--------+--------+----------
   Prob:   0       .1       .2       .3       .4       .5       .6       .7       .8       .9       1
  Group:  00000000000000000000000000000000000000000000000000011111111111111111111111111111111111111111111111111

          Predicted Probability is of Membership for 1.00
          The Cut Value is .50
          Symbols: 0 - .00
                   1 - 1.00
          Each Symbol Represents 1.25 Cases.
```

Block 2: Method = Enter

Iteration History[a,b,c,d]

Iteration		-2 Log likelihood	Coefficients					
			Constant	FBtotal	FinKnow	FinSat	FSEStotal	TEStotalnew
Step 1	1	277.765	-2.473	.092	.195	.014	-.034	.018
	2	256.635	-4.461	.183	.372	-.002	-.057	.033
	3	253.355	-5.685	.239	.482	-.015	-.070	.041
	4	253.240	-5.967	.251	.507	-.017	-.073	.043
	5	253.240	-5.978	.251	.508	-.017	-.073	.043
	6	253.240	-5.978	.251	.508	-.017	-.073	.043

a. Method: Enter
b. Constant is included in the model.
c. Initial -2 Log Likelihood: 276.254
d. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Iteration History[a,b,c,d]

Iteration		Coefficients	
		FinTrng(1)	FKTotal
Step 1	1	-.911	-.001
	2	-1.231	.004
	3	-1.376	.007
	4	-1.408	.007
	5	-1.409	.007
	6	-1.409	.007

a. Method: Enter
b. Constant is included in the model.
c. Initial -2 Log Likelihood: 276.254
d. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	23.014	3	.000
	Block	23.014	3	.000
	Model	93.093	7	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	253.240[a]	.255	.383

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	9.217	8	.324

Contingency Table for Hosmer and Lemeshow Test

		High PFTEBI Score = .00		High PFTEBI Score = 1.00		
		Observed	Expected	Observed	Expected	Total
Step 1	1	31	31.802	1	.198	32
	2	32	31.330	0	.670	32
	3	31	30.342	1	1.658	32
	4	28	29.261	4	2.739	32
	5	28	28.055	4	3.945	32
	6	30	25.972	2	6.028	32
	7	22	22.986	10	9.014	32
	8	17	18.492	15	13.508	32
	9	13	14.804	19	17.196	32
	10	9	7.958	19	20.042	28

Classification Table[a]

Observed	Predicted

		High PFTEBI Score		
		.00	1.00	Percentage Correct
Step 1 High PFTEBI Score .00		223	18	92.5
	1.00	40	35	46.7
	Overall Percentage			81.6

a. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Step 1[a] FBtotal	.251	.117	4.619	1	.032	1.285	1.022	1.616
FinKnow	.508	.108	22.169	1	.000	1.661	1.345	2.052
FinSat	-.017	.074	.052	1	.820	.983	.850	1.137
FSEStotal	-.073	.058	1.587	1	.208	.929	.829	1.042
TEStotalnew	.043	.027	2.441	1	.118	1.044	.989	1.101
FinTrng(1)	-1.409	.326	18.704	1	.000	.244	.129	.463
FKTotal	.007	.102	.005	1	.944	1.007	.825	1.229
Constant	-5.978	1.446	17.099	1	.000	.003		

a. Variable(s) entered on step 1: TEStotalnew, FinTrng, FKTotal.

Correlation Matrix

	Constant	FBtotal	FinKnow	FinSat	FSEStotal	TEStotalnew
Step 1 Constant	1.000	-.285	-.431	.137	-.037	-.715
FBtotal	-.285	1.000	-.036	-.106	-.315	.039
FinKnow	-.431	-.036	1.000	-.331	-.113	.144
FinSat	.137	-.106	-.331	1.000	-.350	-.034
FSEStotal	-.037	-.315	-.113	-.350	1.000	-.246
TEStotalnew	-.715	.039	.144	-.034	-.246	1.000
FinTrng(1)	-.141	-.002	.010	.099	.036	.000
FKTotal	-.211	-.061	-.067	.054	-.166	.038

Correlation Matrix

		FinTrng(1)	FKTotal
Step 1	Constant	-.141	-.211
	FBtotal	-.002	-.061
	FinKnow	.010	-.067
	FinSat	.099	.054
	FSEStotal	.036	-.166
	TEStotalnew	.000	.038
	FinTrng(1)	1.000	-.005
	FKTotal	-.005	1.000

```
          Step number: 1
          Observed Groups and Predicted Probabilities

      32 +                                                                              +
         I                                                                              I
         I0                                                                             I
 F       I0                                                                             I
 R    24 +0                                                                             +
 E       I0                                                                             I
 Q       I00                                                                            I
 U       I00                                                                            I
 E    16 +00                                                                            +
 N       I000   0                                                                       I
 C       I000   00 1 1                                                                  I
 Y       I000   00 1 0        0                                                         I
       8 +0000000 0000 1     0                         1                                +
         I000000000000 00 1 0 0        1               01 1                             I
         I0000000000000000 0 000 0110111 0101    111   1  0011  11  1    1 1   1           1              I
         I0000000000000000000000000000000000010 0001 00100100000 10 001 000 0  110101 100 011             I
Predicted ---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+----------
    Prob:  0      .1        .2        .3        .4        .5        .6        .7        .8        .9         1
   Group:  000000000000000000000000000000000000000000000000000011111111111111111111111111111111111111111111111111111

          Predicted Probability is of Membership for 1.00
          The Cut Value is .50          Symbols: 0 - .00  1 - 1.00          Each Symbol Represents 2 Cases.
```

Block 3: Method = Enter

<div align="center">Iteration History^{a,b,c,d}</div>

Iteration		-2 Log likelihood	Coefficients						
			Constant	FBtotal	FinKnow	FinSat	FSEStotal	TEStotalnew	FinTrng(1)
Step 1	1	276.110	-2.280	.100	.200	.023	-.034	.016	-.921
	2	254.036	-4.058	.204	.385	.014	-.065	.030	-1.244
	3	250.369	-5.225	.270	.505	.003	-.083	.038	-1.388
	4	250.220	-5.526	.286	.535	.001	-.087	.040	-1.419
	5	250.220	-5.540	.286	.537	.001	-.088	.041	-1.421
	6	250.220	-5.540	.286	.537	.001	-.088	.041	-1.421

a. Method: Enter

b. Constant is included in the model.

c. Initial -2 Log Likelihood: 253.240

d. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

<div align="center">Iteration History^{a,b,c,d}</div>

Iteration		Coefficients						
		FKTotal	Married(1)	OwnHome(1)	College(1)	Income(1)	AGE	GNDR(1)
Step 1	1	.010	.051	.090	-.115	.097	-.007	-.147
	2	.027	.044	.099	-.161	.145	-.013	-.287
	3	.037	.019	.074	-.184	.177	-.017	-.379
	4	.040	.010	.064	-.191	.187	-.018	-.403
	5	.040	.010	.063	-.192	.187	-.018	-.404
	6	.040	.010	.063	-.192	.187	-.018	-.404

a. Method: Enter

b. Constant is included in the model.

c. Initial -2 Log Likelihood: 253.240

d. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	3.020	6	.806
	Block	3.020	6	.806
	Model	96.114	13	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	250.220[a]	.262	.394

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	11.766	8	.162

Contingency Table for Hosmer and Lemeshow Test

		High PFTEBI Score = .00		High PFTEBI Score = 1.00		
		Observed	Expected	Observed	Expected	Total
Step 1	1	31	31.830	1	.170	32
	2	32	31.389	0	.611	32
	3	31	30.409	1	1.591	32
	4	27	29.295	5	2.705	32
	5	29	28.091	3	3.909	32
	6	29	26.158	3	5.842	32
	7	23	23.082	9	8.918	32
	8	19	18.820	13	13.180	32
	9	10	13.988	22	18.012	32
	10	10	7.938	18	20.062	28

Classification Table^a

Observed	Predicted		
	High PFTEBI Score		
	.00	1.00	Percentage Correct
Step 1 High PFTEBI Score .00	221	20	91.7
1.00	35	40	53.3
Overall Percentage			82.6

a. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Step 1^a FBtotal	.286	.122	5.516	1	.019	1.331	1.049	1.691
FinKnow	.537	.114	22.279	1	.000	1.711	1.369	2.138
FinSat	.001	.077	.000	1	.989	1.001	.860	1.165
FSEStotal	-.088	.059	2.191	1	.139	.916	.816	1.029
TEStotalnew	.041	.028	2.100	1	.147	1.041	.986	1.100
FinTrng(1)	-1.421	.334	18.089	1	.000	.242	.125	.465
FKTotal	.040	.106	.142	1	.707	1.041	.845	1.282
Married(1)	.010	.351	.001	1	.977	1.010	.508	2.008
OwnHome(1)	.063	.483	.017	1	.896	1.065	.413	2.746
College(1)	-.192	.402	.228	1	.633	.825	.376	1.814
Income(1)	.187	.372	.254	1	.614	1.206	.582	2.498
AGE	-.018	.019	.897	1	.343	.983	.948	1.019
GNDR(1)	-.404	.473	.731	1	.392	.667	.264	1.686
Constant	-5.540	1.717	10.410	1	.001	.004		

a. Variable(s) entered on step 1: Married, OwnHome, College, Income, AGE, GNDR.

Correlation Matrix

	Constant	FBtotal	FinKnow	FinSat	FSEStotal	TEStotalnew	FinTrng(1)	FKTotal	Married(1)	OwnHome(1)	College(1)	Income(1)	AGE	GNDR(1)
Step Constant	1.000	-.213	-.319	.036	-.041	-.637	-.130	-.202	-.093	-.183	-.143	-.184	-.413	.029

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1														
FBtotal	-.213	1.000	-.006	-.083	-.329	.061	-.024	-.008	-.033	.038	.004	.101	-.186	.028
FinKnow	-.319	-.006	1.000	-.304	-.155	.127	.025	-.023	-.001	-.101	.024	-.014	-.106	-.222
FinSat	.036	-.083	-.304	1.000	-.346	-.015	.078	.074	.042	.161	-.019	.077	.052	-.077
FSEStotal	-.041	-.329	-.155	-.346	1.000	-.244	.044	-.186	.029	.007	.003	-.061	.096	.070
TEStotalnew	-.637	.061	.127	-.015	-.244	1.000	-.007	.046	.010	.059	.114	.018	-.012	.097
FinTrng(1)	-.130	-.024	.025	.078	.044	-.007	1.000	-.007	.122	-.125	-.060	-.030	.037	-.009
FKTotal	-.202	-.008	-.023	.074	-.186	.046	-.007	1.000	.014	-.018	.007	.125	-.079	-.085
Married(1)	-.093	-.033	-.001	.042	.029	.010	.122	.014	1.000	-.155	.105	-.290	.003	.051
OwnHome(1)	-.183	.038	-.101	.161	.007	.059	-.125	-.018	-.155	1.000	.017	-.164	.252	-.043
College(1)	-.143	.004	.024	-.019	.003	.114	-.060	.007	.105	.017	1.000	-.117	.014	.129
Income(1)	-.184	.101	-.014	.077	-.061	.018	-.030	.125	-.290	-.164	-.117	1.000	.102	.125
AGE	-.413	-.186	-.106	.052	.096	-.012	.037	-.079	.003	.252	.014	.102	1.000	-.113
GNDR(1)	.029	.028	-.222	-.077	.070	.097	-.009	-.085	.051	-.043	.129	.125	-.113	1.000

```
Step number: 1

Observed Groups and Predicted Probabilities

      32 +                                                                        +
          I0                                                                       I
          I0                                                                       I
  F       I0                                                                       I
  R    24 +0                                                                       +
  E       I0                                                                       I
  Q       I00                                                                      I
  U       I00                                                                      I
  E    16 +00                                                                      +
  N       I000                                                                     I
  C       I000     0                                                               I
  Y       I00000100  10                                                            I
       8 +0000000001100    0            1                    1                      +
          I000000000100000 00    1      1 1            1          1  1             I
          I0000000000000000 00 0100 0 11 0  11 0  0  1   1 1  0    1 1   11 1 1    I
          I0000000000000000000000000000000000 0000  0110000 101011110 0000000111 000 1 0 0 0 111    I
Predicted ---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+----------
   Prob:   0      .1        .2        .3        .4        .5        .6        .7        .8        .9        1
  Group:  00000000000000000000000000000000000000000000000000011111111111111111111111111111111111111111111111111111111

        Predicted Probability is of Membership for 1.00
        The Cut Value is .50
        Symbols: 0 - .00
                 1 - 1.00
        Each Symbol Represents 2 Cases.
```

Casewise List[b]

Case	Selected Status[a]	Observed	Predicted	Predicted Group	Temporary Variable

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		High PFTEBI Score			Resid	ZResid
3	S	1**	.091	0	.909	3.157
29	S	1**	.142	0	.858	2.456
37	S	1**	.093	0	.907	3.129
51	S	1**	.093	0	.907	3.121
75	S	1**	.103	0	.897	2.945
104	S	1**	.095	0	.905	3.091
116	S	1**	.053	0	.947	4.224
125	S	1**	.004	0	.996	16.498
228	S	1**	.101	0	.899	2.977
284	S	1**	.108	0	.892	2.875

(dimension0 labels rows 75–284 on the left)

a. S = Selected, U = Unselected cases, and ** = Misclassified cases.

b. Cases with studentized residuals greater than 2.000 are listed.

Appendix P - Contingency Table for Hosmer and Lemeshow Test

The Contingency Table for Hosmer and Lemeshow Test (below) shows the observed and expected values for each category of the High PFTEBI score as used to calculate the Hosmer and Lemeshow chi-square.

Table P.1 Contingency Table for Hosmer and Lemeshow Test

	High PFTEBI Score = .00		High PFTEBI Score = 1.00		Total
	Observed	Expected	Observed	Expected	
Step 1					
1	31	31.830	1	.170	32
2	32	31.389	0	.611	32
3	31	30.409	1	1.591	32
4	27	29.295	5	2.705	32
5	29	28.091	3	3.909	32
6	29	26.158	3	5.842	32
7	23	23.082	9	8.918	32
8	19	18.820	13	13.180	32
9	10	13.988	22	18.012	32
10	10	7.938	18	20.062	28

Appendix Q - Codebook

Notes

Output Created		23-Apr-2014 20:30:24
Comments		
Input	Data	C:\Users\Kurt\Documents\K State\Dissertation\Survey Data\Data Completed Surveys 6 30 13 UPDTD 3 2 14.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	316
Syntax		CODEBOOK GNDR [n] AGE [s] FinTrng [n] FinSat [n] FinKnow [n] FSEStotal [s] FKTotal [s] FBtotal [s] TESPTEnew [s] TESGTEnew [s] TEStotalnew [s] PFTOERvrs [s] PFTE1Rvrs [s] PFTE2Rvrs [s] PFTEBITotalRvrs [s] Married [s] OwnHome [s] College [s] Income [s] /VARINFO POSITION LABEL TYPE FORMAT MEASURE ROLE VALUELABELS MISSING ATTRIBUTES /OPTIONS VARORDER=VARLIST SORT=ASCENDING MAXCATS=200 /STATISTICS COUNT PERCENT MEAN STDDEV QUARTILES.
Resources	Processor Time	00:00:00.063
	Elapsed Time	00:00:00.142

[DataSet1] C:\Users\Kurt\Documents\K State\Dissertation\Survey Data\Data Completed Surveys 6 30 13 UPDTD 3 2 14.sav

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GNDR

		Value	Count	Percent
Standard Attributes	Position	63		
	Label	<none>		
	Type	Numeric		
	Format	F1		
	Measurement	Nominal		
	Role	Input		
Valid Values	0		41	13.0%
	1		275	87.0%

AGE

		Value
Standard Attributes	Position	64
	Label	<none>
	Type	Numeric
	Format	F2
	Measurement	Scale
	Role	Input
N	Valid	316
	Missing	0
Central Tendency and Dispersion	Mean	45.02
	Standard Deviation	9.498
	Percentile 25	38.00
	Percentile 50	46.00
	Percentile 75	53.00

FinTrng

		Value	Count	Percent
Standard Attributes	Position	83		
	Label	<none>		
	Type	Numeric		
	Format	F1		
	Measurement	Nominal		
	Role	Input		
Valid Values	0		191	60.4%
	1		125	39.6%

FinSat

		Value	Count	Percent
Standard Attributes	Position	97		
	Label	<none>		
	Type	Numeric		
	Format	F2		
	Measurement	Nominal		
	Role	Input		
Valid Values	1		54	17.1%
	2		19	6.0%
	3		24	7.6%
	4		28	8.9%
	5		54	17.1%
	6		29	9.2%
	7		39	12.3%
	8		29	9.2%

9		17	5.4%
10		23	7.3%

FinKnow

		Value	Count	Percent
Standard Attributes	Position	98		
	Label	<none>		
	Type	Numeric		
	Format	F2		
	Measurement	Nominal		
	Role	Input		
Valid Values	1		29	9.2%
	2		10	3.2%
	3		16	5.1%
	4		23	7.3%
	5		58	18.4%
	6		38	12.0%
	7		46	14.6%
	8		65	20.6%
	9		18	5.7%
	10		13	4.1%

FSEStotal

		Value
Standard Attributes	Position	101
	Label	<none>
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	316
	Missing	0

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Central Tendency and Dispersion	Mean	14.2753
	Standard Deviation	3.71486
	Percentile 25	12.0000
	Percentile 50	14.0000
	Percentile 75	17.0000

FKTotal

		Value
Standard Attributes	Position	102
	Label	\<none\>
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	316
	Missing	0
Central Tendency and Dispersion	Mean	4.5728
	Standard Deviation	1.60488
	Percentile 25	4.0000
	Percentile 50	4.5000
	Percentile 75	6.0000

FBtotal

		Value
Standard Attributes	Position	104
	Label	\<none\>
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	316

		Value
	Missing	0
Central Tendency and Dispersion	Mean	5.7816
	Standard Deviation	1.82916
	Percentile 25	4.5000
	Percentile 50	6.0000
	Percentile 75	7.0000

TESPTEnew

		Value
Standard Attributes	Position	121
	Label	<none>
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	316
	Missing	0
Central Tendency and Dispersion	Mean	25.5443
	Standard Deviation	3.49983
	Percentile 25	24.0000
	Percentile 50	26.0000
	Percentile 75	28.0000

TESGTEnew

		Value
Standard Attributes	Position	127
	Label	<none>
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input

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N	Valid	316
	Missing	0
Central Tendency and Dispersion	Mean	21.0253
	Standard Deviation	4.90733
	Percentile 25	17.5000
	Percentile 50	22.0000
	Percentile 75	24.5000

TEStotalnew

		Value
Standard Attributes	Position	128
	Label	\<none>
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	316
	Missing	0
Central Tendency and Dispersion	Mean	39.5190
	Standard Deviation	5.82520
	Percentile 25	35.0000
	Percentile 50	39.0000
	Percentile 75	43.0000

PFTOERvrs

		Value
Standard Attributes	Position	143
	Label	\<none>
	Type	Numeric
	Format	F8.2
	Measurement	Scale

	Role	Input
N	Valid	316
	Missing	0
Central Tendency and Dispersion	Mean	25.5601
	Standard Deviation	4.58357
	Percentile 25	22.0000
	Percentile 50	26.0000
	Percentile 75	28.0000

PFTE1Rvrs

		Value
Standard Attributes	Position	144
	Label	<none>
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	316
	Missing	0
Central Tendency and Dispersion	Mean	31.0158
	Standard Deviation	6.07334
	Percentile 25	27.0000
	Percentile 50	31.0000
	Percentile 75	36.0000

PFTE2Rvrs

		Value
Standard Attributes	Position	145
	Label	<none>
	Type	Numeric
	Format	F8.2

		Value
	Measurement	Scale
	Role	Input
N	Valid	316
	Missing	0
Central Tendency and Dispersion	Mean	13.9304
	Standard Deviation	3.34022
	Percentile 25	12.0000
	Percentile 50	14.0000
	Percentile 75	16.0000

PFTEBITotalRvrs

		Value
Standard Attributes	Position	146
	Label	<none>
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	316
	Missing	0
Central Tendency and Dispersion	Mean	63.1139
	Standard Deviation	9.34012
	Percentile 25	56.0000
	Percentile 50	63.0000
	Percentile 75	69.0000

Married

		Value
Standard Attributes	Position	147
	Label	Married
	Type	Numeric

	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	316
	Missing	0
Central Tendency and Dispersion	Mean	.5538
	Standard Deviation	.49789
	Percentile 25	.0000
	Percentile 50	1.0000
	Percentile 75	1.0000

OwnHome

		Value
Standard Attributes	Position	148
	Label	OwnHome
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	316
	Missing	0
Central Tendency and Dispersion	Mean	.7880
	Standard Deviation	.40939
	Percentile 25	1.0000
	Percentile 50	1.0000
	Percentile 75	1.0000

College

		Value
Standard Attributes	Position	149

	Label	College
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	316
	Missing	0
Central Tendency and Dispersion	Mean	.7405
	Standard Deviation	.43905
	Percentile 25	.0000
	Percentile 50	1.0000
	Percentile 75	1.0000

Income

		Value
Standard Attributes	Position	150
	Label	Income
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	316
	Missing	0
Central Tendency and Dispersion	Mean	.5348
	Standard Deviation	.49958
	Percentile 25	.0000
	Percentile 50	1.0000
	Percentile 75	1.0000

Appendix R - Curriculum Vitae

Kurt A. Schindler

Calle Cáncer #1730
Urb. Venus Gardens
San Juan PR 00926

CAREER SUMMARY:
Financial education is an important element in today's complex financial environment. Financial planning should be taught to all citizens and ought to begin in high school. Financial planning, as a profession, needs to include teaching as well as advice to the public in order to attain the maximum benefit for society. Teaching needs to include basic financial management concepts such as goal setting, budgeting and credit use, more advanced topics such as insurance and taxes, and long term concepts such investments, retirement and inflation.

EDUCATION

BA Spanish, Concentration in Economics Oswego	**1984, State University of NY at**

Exchange student to Medellín, Columbia (1981)
Exchange student to Puerto Rico, (1982, 1984)
Member of Honor Society in Economics, Omicron Delta Epsilon

MS Financial Services (Planning) Mawr, PA	**1997, American College, Bryn**

PhD candidate, Personal Financial Planning University, Manhattan, KS	**2014 (proj.), Kansas State**

- Area of research – high school financial planning courses and impact on students, and teacher preparation to teach personal finance.
- Member of Honor Society in Human Sciences, Kappa Omicron Nu

Accreditations: Certified Financial Planner Designee, 1990, College for Financial Planning

Professional Memberships: Financial Planning Association since 1994, Member of Association for Financial Counseling, Planning and Education, Member of Financial Therapy Association.

SUMMARY OF QUALIFICATIONS

Solid 25 years of managerial and supervisory experience

- Entrepreneur with over 18 years of experience in own business.
- Excellent business development and client service skills
- Research regarding high school financial planning education initiatives

PROFESSIONAL EXPERIENCE

2013 to Present   **Kansas State University, Manhattan, KS**
On-line Instructor - Money 101, Basic Personal Finance Class

2013 to Present   **University of Puerto Rico, Río Piedras, PR**
Instructor – Investments (FINA 4137)

2005 to Present   **Banco Popular de Puerto Rico, San Juan, PR**

Vice President, Financial Education Program Director
Responsible for financial education program for clients and public. Research, draft and present content for financial education in television programs, radio program segments, newspaper articles, public seminars and employee workshops. Spokesperson for Banco Popular regarding financial orientation and education.Work with Puerto Rico Education Department personnel to create personal finance curriculum for the public school system. Liaison to the Alliance for Education in Economics and Personal Finance with the PR Banking Association and Universidad Sagrado Corazón (Sacred Heart University).

Vice President, Financial Planning Division
Merged private financial planning practice (Financial Planning Group) with Financial Planning Unit of Banco Popular in 2005. Began process of converting Popular Unit to fee-for-service operation (from cost center). Revenues increased from $97,000 in 2005 to over 400,000 in 2008. Increased staff from seven professionals to 11. Responsible for all facets of financial planning operation including, but not limited to, recruiting, training, staff development, plan revisions, client relations, invoicing, collections and compliance. Instrumental in the development of the Wealth Management Unit of Banco Popular – financial planning and private banking services for the high net worth market segment.

1990 to 2005   **Financial Planning Group, San Juan, PR**

President, 1992-2005

- Owned and operated the only fee-based financial planning firm in Puerto Rico. Services included financial planning, investment management, retirement plan administration, tax consulting, and bookkeeping services.
- Increased annual revenues from $75,000 in the first year to over $880,000 in the 13th year. Spun off two business units in 2003 in order to preserve and enhance client relationships as well as maintain focus of services on financial planning.
- Successfully completed audits of Securities and Exchange Commission in 1993, 1996 and 2000.
- Created and developed financial planning group presentation and individual consultation format for various outplacement companies as part of benefits offered to participating candidates.

VOLUNTEER EXPERIENCE

Board member and Board Treasurer for the Ricky Martin Foundation, 2005 to present. Boy Scout Volunteer since 1995: Den Leader 1996-1997, 2003-2005, Cubmaster 1997-2003, Scoutmaster 2005-2009, Chartered Organization Representative 2003- 2007, Executive Board Member 2004-2009, Golf Tournament Chair 2003 – 2008, Personal Administration merit badge counselor 2005 to present, VP Endowment 2012 – 2012.

TEACHING EXPERIENCE

Implemented the Registered Paraplanner® program of the College for Financial Planning for internal and external clients. Internal clients included Senior Bank Consultants and external clients included the Colegio de CPA. Brought the program completely in-house in 2011.

Has presented more than 1,000 financial planning workshops to more than 55,000 teachers, students, parents and general public over the past 20 years. Organizations include the Future Business Leaders of America, YEES, Congreso de Líderes, Boy Scouts of America, Puerto Rico Council, Puerto Rico Department of Education, Accounting Student Association of PR, Programa TRIO, DECA, Boys and Girls Club Borinquen, Universidad Interamericana, Universidad de Puerto Rico, Universidad Sagrado Corazón, Radio Broadcasters Association of PR, Proyecto Enlace Caño Partín Peña, among others.

LANGUAGES

Bilingual – Spanish and English

PUBLICATIONS and ACADEMIC PRESENTATIONS

Invited Journal Articles

Archuleta, K. L., Dale, A., Danford, D., Williams, K., Rasure, E., Burr, E., Schindler, K., & Coffman, B. (2011). An initial membership profile of the Financial Therapy Association. *Journal of Financial Therapy, 2* (2), 1-19.

Peer-reviewed Journal Articles

Britt, S. L., Grable, J. E., Cumbie, J., Cupples, S., Henegar, J., Schindler, K., & Archuleta, A. (2011). Student financial counseling: An analysis of a clinical and non-clinical sample. *Journal of Personal Finance, 10* (2), 95-121.

Archuleta, K., Burr, E., Dale, A., Canale, A., Danford, D., Rasure, E., Nelson, J., Williams, K., Schindler, K., Coffman, B., & Horwitz, E. (2012). What is Financial Therapy? Discovering Mechanisms and Aspects of an Emerging Field. *Journal of Financial Therapy, 3*(2), 57-78. doi:10.4148/jft.v3i2.1807

Peer-reviewed Conference Proceedings – Abstracts

Archuleta, K. L., Dale, A., Schindler, K.A., Spann, S. M. (November 2011). Using financial knowledge to predict student debt load. Research poster presented at the annual conference of the *Association of Financial Counseling and Planning Education Conference*, Jacksonville, FL.

Conference Presentations

Schindler, K. A. (November, 2010) ¿Sacamos f en la educación financiera? (*Do we earn a failing grade in financial education?*) College Board Annual Conference, San Juan, Puerto Rico.

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Schindler, K. A. & Llompart, R. (October, 2011). La efectividad de los programas de
educación financiera en la escuela superior en los EE. UU. (*Effectiveness of high
school financial education in the U.S*.) College Board Annual Conference, San
Juan, Puerto Rico.

Schindler, K. A., Llompart, R., Ibarra, T., Santiago, Nilda., & Torres, L. (November,
2011). El estudiante como emprendedor (*The student as entrepreneur*). Silva, N.
(Moderator). Invited panel member at Instituto de Política Educativa para el
Desarrollo Comunitaria (Institute for Community Development of Education
Policy), San Juan, Puerto Rico.

Schindler, K. A. & Llompart, R. (February, 2012). La efectividad de los programas de
educación financiera en la escuela superior en los EE. UU. (*Effectiveness of high
school financial education in the U.S*.) Puerto Rico Association of Private
Schools, San Juan, Puerto Rico.

Henegar, J., Sages, R., Schindler, K.A., Carr, N., Williams, S., Coffman, B., Cumbie, J.,
Cupples, W., Bell, M., Archuleta, K.L., & Grable, J. E. (May 2012). Financial
planning in the U.S. Joo, S. (Moderator). Invited panel member at Korean
Financial Planning, Seoul, South Korea.

Schindler, K. A. (May, 2012). *Using financial knowledge to predict student debt load.*
Invited presentation at the Kansas State University & Ewha Women's University
Colloquium, Seoul, South Korea.

Archuleta, K.L., Burr, E., Dale, A., Canale, A., Danford, D., Rasure, E., Nelson, J.,
Williams, K., Schindler, K, Coffman, B., & Horwitz, E. (September, 2012). *What
is financial therapy? Discovering the mechanisms and aspects of an emerging
field.* Presentation at the annual conference of the Financial Therapy Association,
Columbia, MO. (Outstanding Paper Award)

Schindler, K. A. (October, 2012). Serido, J. (Moderator). *Teacher capacity to teach personal finance at the high school level in Puerto Rico.* Invited presentation at the Child & Youth Finance International Regional Conference, Mexico City, Mexico.

Schindler, K. A. (April, 2013). *Alianzas para la educación: finanzas personales, economía y emprendimiento*. (Alliances in Education: Personal finance, economics and entrepreneurship.) Presentation at the 50th Anniversary Conference for the College Board Puerto Rico and Latina America, San Juan, Puerto Rico.

Schindler, K. A. (May, 2013). Schindler, K. A. (Moderator). *The power of the teacher. How are teachers key in reshaping the future of finance?* Invited presentation at the Child & Youth Finance International Global Summit, Istanbul, Turkey.

Schindler, K. A. (October, 2013). Freytes, C. (Moderator). *Integración P-20-T: ¿Hacia dónde y para qué?* (P-20-W Integration: Where and what for?) Invited presentation at the 1er Congreso de Investigación (1st Research Congress), Consejo de Educación de Puerto Rico (Puerto Rico Higher Education Council), San Juan, Puerto Rico.

Schindler, K. A. (January, 2014). Calero, H. (Moderator). *Foro de Innovación*. (Innovation Forum). Invited presentation, *Innovations in Personal Finance*, at the Columbia Centro Universitario, Caguas, Puerto Rico.

Schindler, K. A. (March, 2014). *26to Foro de Liderazgo: El Líder Transformacional y su Impacto en Nuestra Sociedad* (26th Leadership Forum: The Transformational Leader and the Impact on our Society). Invited presentation at EDP University, San Juan, Puerto Rico.

Schindler, K. A. (March, 2014). Macías, J. (Moderator). *Tercer Simposio de la Familia* (Third Symposium on Family). Invited presentation, Tesoro, tiempo y talento: Corresponsabilidad conyugal (*Treasure, Time and Talents: Conjugal Responsibility)*, at the Universidad Pontificia Católica de Puerto Rico, Ponce, Puerto Rico.

Honors and Awards

- Outstanding Research Paper, Financial Therapy Association Conference, 2012
- American Society for Training and Development, Puerto Rico Chapter, Training and Development Professional Award 2012