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Information Sources That Influence the Financial Literacy of Puerto Rican College Students

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Abstract

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Researchers agree that Puerto Ricans lack basic financial knowledge that would allow them to participate in the financial system actively. However, the literature did not provide any data about the knowledge transmission practices that Puerto Ricans use to gather and transmit financial knowledge. As a result, there was a limited understanding of the social learning processes used by Puerto Rican college students to make financial decisions. Using consumer socialization and family financial socialization models as the theoretical framework, the purpose of this quantitative, nonexperimental study was to identify the information sources that Puerto Ricans use to gather financial knowledge. A sample of 198 Puerto Rican college students answered a portion of the College Student Financial Literacy Survey. The research questions examined the preference of 4 financial information sources, their level of influence, and the impact of exposure frequency of these socialization agents. Descriptive statistics showed that participants preferred to gather financial knowledge from parents. A combination of one-way ANOVA and RMANOVA confirmed that parents also had the highest level of influence. The results of a multiple linear regression test suggested that the frequency of exposure did not predict the financial knowledge of students in the sample. The outcomes of this study may be helpful in optimizing the communication vehicles used to transmit financial knowledge to the public. Researchers, educators, and policymakers may also use this study as foundation for the development of effective financial education strategies that will promote positive social change in Puerto Rico.

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Dedication

I dedicate this study to my beloved husband, Javier. You pushed me when I thought of quitting, cared for me when I got sick, and held me when I was the weakest. I am overwhelmed by you, not because of how much I love you but because of how much you love me. This achievement is half yours.

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Chapter 1: Introduction to the Study

Financial literacy is an important aspect of a healthy economy. After the financial crisis of 2007, the United States' financial system became increasingly complex, placing more responsibility on individuals to manage their finances (Anthes, 2004; Lusardi, 2015). Puerto Ricans, like many other U.S. citizens, make financial decisions daily. However, Puerto Ricans showed low levels of financial literacy related to saving decisions when compared with other ethnic groups in the U.S. (González-Corzo, 2015; Martinez, 2013). Researchers, educators, and policymakers usually employ different strategies to promote and improve the financial literacy of people. However, these strategies seemed ineffective to transmit financial knowledge to Puerto Ricans.

The detrimental conditions of the Puerto Rican economy may require Puerto Ricans to understand how to manage their money effectively. However, educators might need to identify Puerto Ricans' preferred learning methods before determining effective strategies to help them improve their financial skills. Therefore, I focused this study on identifying the sources of information that Puerto Ricans use to obtain financial knowledge and inform their financial and consumer decisions. The collection of data may provide Puerto Rican researchers, educators, and policymakers with valuable insight to help develop strategies that will effectively improve the financial literacy of Puerto Ricans.

Based on the idea that financial literacy provides the knowledge and skills to manage financial resources effectively, the purpose of this quantitative, nonexperimental study was to examine the information sources that influence the financial knowledge and

decisions of Puerto Rican college students. Specifically, I assessed how parents, school, peers, and media influence the financial socialization processes of Puerto Rican college students. The following sections of this chapter include the historical background and the theoretical framework of the study. I also included a description of the problem statement, the purpose of the study, and the research questions and related hypotheses that will guide the study. Also, I described the nature of the study, defined the key variables, and explained the assumptions and limitations. The chapter concludes with a brief description of the social implications and significance of the study.

Background

Every day, more citizens must take an active role in managing their finances. Governments, banking institutions, and employers transferred the responsibility to save, invest, and plan for retirement to the people (Bassa Scheresberg, 2013; Lusardi, 2015). Hence, individuals face these responsibilities without the necessary guidance to make decisions. Moreover, the importance and urgency to make financial plans, savings, and investments increases as people age and approach retirement.

Making financial decisions without proper knowledge may lead to significant economic loses. Puerto Ricans, including adolescents, adults, and seniors, lack the financial knowledge and skills necessary to manage this new financial responsibility effectively (Castro-Gonzalez, 2014; Gonzalez-Corso, 2015). This deficiency of financial knowledge leads many Puerto Ricans to make ill-informed decisions that may result in financial instability, becoming overindebted, or falling victim to financial fraud and deceit (Becchetti, Caiazza, & Coviello, 2013; Lusardi, 2015; Pintye & Kiss, 2016). Ill-

informed financial decisions may become a contributing factor that jeopardizes retirement plans and, as a result, the finances of the elderly. These decisions impact people when they reach an advanced age because it is at that time when seniors draw upon their savings to cover their living expenses after retirement.

Many studies examined the impact of financial knowledge on the financial wellbeing of people. Erner, Goedde-Menke, and Oberste (2016) found that having adequate financial knowledge helps people make informed decisions regarding savings, investments, retirement planning, and proper wealth management. In many cases, individuals with financial knowledge reported higher savings and increased returns on investments, two examples of sources of income that people often use to build their retirement plans. Likewise, Lusardi (2015), Moschis and Churchill (1978), and Muralidharan and Men (2015) found that having the wrong information leads to poor money management. The lack of financial knowledge may become a source of concern for people from lower socioeconomic levels, who struggle to overcome their financial difficulties. In most cases, socialization agents are key in providing people with financial knowledge and modeling their behaviors and attitudes regarding money.

Puerto Ricans and the Financial Crisis

Since Puerto Rico's financial crisis started in 2006, Puerto Ricans face many challenges regarding their financial wellbeing. Unemployment rates as high as 11% in 2017 and increasing migration to the mainland have come as consequences of this financial crisis (U.S. Bureau of Labor Statistics, 2017; U.S. Census Bureau, 2016b). The impact of unemployment in Puerto Rico reaches beyond household finances. Brand

(2015) related job displacement with an increase in economic costs directly associated with reduced incomes, increased pension or welfare benefits, and the interruption of asset accrual. Increasing unemployment rates also have a direct impact on people's health and quality of life (Calvo, Mair, & Sarkisian, 2015; Michaud, Crimmins, & Hurd, 2016; Zhang, Peppas, Peppas, & Yu, 2015). Low levels of financial literacy combined with high rates of unemployment may prove fatal for those trying to overcome poverty. Moreover, the stress caused by financial problems may also lead or exacerbate mental health problems such as depression and suicidal thoughts.

Puerto Ricans face a critical unemployment problem in the island. The average unemployment rate of the island reached 10.9% in January 2018, reflecting a reduction of 5% from the highest unemployment rate reported in Puerto Rico (16%) in 2011 (P.R. Department of Labor and Human Resources, 2018; U.S. Bureau of Labor Statistics, 2018). A 5% reduction may look like an improvement, however, unemployment rates in Puerto Rico almost double those in Alaska (7.3%), New Mexico (5.9%), and West Virginia (5.4%), the states with the highest unemployment rates reported during the same period (U.S. Bureau of Labor Statistics, 2018). A 10.9% unemployment rate means that over 100,000 Puerto Ricans face difficult economic conditions. Moreover, losing a job produces a long-lasting effect on people's lives because it may affect savings, investments, and retirement plans dramatically.

The unemployment rate reduction may result from the rising Puerto Rican migration to the mainland since the financial crisis started in Puerto Rico in 2006. The migration trend resulted in a 5.5% decrease in the island population from 2005 to 2013

(Abel & Deitz, 2014). Many migrating Puerto Ricans leave the island seeking professional opportunities because they could not find job opportunities in their field or because employers offered wages significantly lower than expected. Despite government efforts to reduce the migration, Puerto Ricans keep moving to the mainland, mostly to Puerto Rican enclaves located in Florida, New York, and Texas.

Dealing With the Crisis

Puerto Ricans have to deal with severe financial issues resulting from the financial crisis occurring on the island. Castro-Gonzalez (2014) and Martinez (2013) agreed that Puerto Ricans lack the basic financial knowledge to manage their finances, make sound investments, or plan for retirement. From college students to seniors, participants in both studies demonstrated how many Puerto Ricans have a significant deficiency of financial literacy. They are trying to survive financially without the necessary financial and consumer knowledge and skills to do so.

In many instances, Puerto Ricans search for financial guidance using different information sources. Castro-Gonzalez (2014) found that about 50% of the participants in her study used newspaper articles to inform their financial decisions. Likewise, 45% of participants used information from family or friends. Newspaper advertisement influenced the financial choices of 43%, and less than half of the sample (44%) sought orientation from a representative working for a financial institution (Castro-Gonzalez, 2014). Higher rates of people relying on newspapers, family, and friends may suggest that they have more confidence in these sources of information than in financial institutions. However, it may also indicate that people are unaware of proper places

where they can look for reliable information to make financial decisions.

Financial Socialization Processes

The acquisition of financial knowledge occurs through a series of socialization experiences. With the term "socialization agents," Moschis and Churchill (1978) referred to the sources of information that transmit norms, attitudes, motivations, and behaviors to learners. Gudmunson and Danes (2011), Moschis and Churchill (1978), and Ward (1974) agreed that socialization processes include the transmission of knowledge that models financial attitudes, behaviors, and knowledge. Social norms dictate the attitudes, responsibilities, and beliefs that people should follow, including financial behavior. Thus, socialization agents play a significant role in the beliefs of individuals and in the decision making processes that guide people's lives.

Socialization agents include any source of information, formal or informal, that provides knowledge about a topic, like parents, television, or school. In the initial stages of financial education, parents act as socialization agents, teaching their children easy money transactions and helping them become familiar with simple financial concepts (Aldea & Brandabur, 2013; Drever, Odders-White, Kalish, Else-Quest, Hoagland, & Nelms, 2015; Dündar, 2017; Grohmann & Menkhoff, 2015; Hunter-Jones, 2014). Early socialization experiences help children understand the difference between spending all their money right away to get immediate pleasure or saving part of the allowance to get something bigger later. Therefore, getting money management knowledge and skills during childhood could provide economic benefits to individuals after becoming adults.

Financial socialization experiences are not limited to the household since children

become engaged in socialization agents outside their family circle as they grow. When children go to school, they start integrating external socialization agents like their new friends and the teachings they receive from their formal education (Chu & Sung, 2015; Dündar, 2017; Huston, 2015). Meanwhile, children are also exposed to T.V., newspapers, and radio ads and countless sources of information through social media like YouTube and Snapchat. Consequently, all these sources of information have an impact, either positive or negative, on the financial knowledge, skills, attitudes, and behaviors of children when they reach adulthood.

Socialization processes occur through both direct and indirect modeling. Direct modeling involves direct communication and the imitation of the agent's behavior (Kagotho, Nabunya, Ssewamala, Mwangi, & Njenga, 2017; Moschis & Churchill, 1978). Parents frequently act as direct modeling agents because they interact one on one with their children by teaching and explaining to them how to make decisions. Socialization processes also occur through observation and unconscious, nonvolitional means (Danes & Yang, 2014; Gudmunson & Danes, 2011; Kagotho et al., 2017). In this case, children may also learn how to make decisions by observing and following the actions of their parents as an example without any direct interaction. However, the frequency of exposure also increases the impact of the socialization agent on the learning process since more frequent modeling produces longer lasting effects.

Researchers started studying financial socialization practices in the mid-1900s. Studies performed during the 1950s through the 1970s explored different agents that researchers considered relevant to people's socialization experiences (Moschis &

Churchill, 1978; Ward, 1974). However, Ward (1974) explained that many of these studies failed to undertake empirical research to prove their ideas. As a result, different researchers started assessing different socialization agents using reliable empirical processes to examine them. For example, Moschis and Churchill (1978) responded to Ward's request by designing and performing an empirical study to test earlier financial socialization propositions. Moschis and Churchill found significant evidence that parents, peers, and media influence the financial decisions of people. However, their data did not provide significant results regarding the influence of school as an effective financial socialization agent.

Moschis and Churchill's (1978) study defined the direction for future research about socialization agents. However, socialization agents include many sources of information that people use to inform their financial and consumer decisions. Researchers like Gudmunson and Danes (2011), Kozina and Ponikvar (2014), and Ponnet (2014) agreed that parents play a significant role in the early socialization experiences of children. Parents or guardians represent the first socialization experience for children since they entirely depend on their caretakers through their infancy. Later, when children start attending elementary school, they learn financial and consumer behaviors from friends. As kids grow older and reach adolescence, they also obtain information from newspapers, magazines, advertisements, and television programs. Teenagers also incorporate the Internet and social networks as socialization agents (Ahluwalia & Sanan, 2016; Hira, Dabri, & Loibl, 2013; Mishra, Maheswarappa, Maity, & Samu, 2018; Pereira, Salgueiro, & Rita, 2016). However, these socialization experiences often lean toward

materialistic and consumerist behaviors (Aldea & Brandabur, 2013; Moschis & Churchill, 1978; Muralidharan & Men, 2015). Consumerist behaviors may result from the children's need for social acceptance. Therefore, these socialization experiences should be monitored and controlled by parents to prevent the negative impact of consumerist behaviors during adulthood.

School or formal financial education as a socialization agent has produced conflicting results among researchers. Drever et al. (2015) and Cole, Paulson, and Shastry (2016) found mixed evidence about the impact of the school on the financial literacy of individuals. In some instances, researchers found a weak correlation between education and financial knowledge (Fernandes, Lynch, & Netemeyer, 2014). Researchers did not find any significant impact of financial education on the financial and consumer behavior of students. However, on other occasions, school-based financial education programs proved to be effective in providing people with financial and consumer knowledge (Dündar, 2017; Grohmann, Kouwenberg, & Menkhoff, 2015). These findings suggest that children accept and respond to teachings about conscious consumerism and positive financial behaviors, like saving money for later. Moreover, the literature suggests that the efforts performed at schools should be combined and supported by parents to enhance their efficacy.

The literature provided extensive studies that assess the financial literacy of people in the United States. In these studies, many researchers highlighted the disadvantages that Hispanics face because of their low financial literacy levels when compared to other ethnic groups (Bassa Scheresberg, 2013; Bumcrot, Lin, & Lusardi,

2013; Gonzalez-Corso, 2015; Lusardi & Mitchell, 2011; Lusardi, Mitchell, & Curto, 2010). The literature also provides relevant data regarding the financial socialization experiences of children and adolescents (Drever et al., 2015; Grohmann & Menkhoff, 2015; Hunter-Jones, 2014). However, the literature provided little evidence of empirical studies focusing on the socialization experiences of Puerto Ricans as a group and how these experiences influence their financial literacy. Thus, this study was needed to generate new data to understand how Puerto Ricans learn financial concepts and inform their financial decisions. The generated data may help educators and policymakers develop new educational strategies to enhance and increase the financial literacy of Puerto Ricans on the island and, as a result, improve their financial wellbeing.

Problem Statement

Researchers have suggested that many Puerto Ricans, among other Hispanic groups, have low levels of financial literacy. The general problem for the study was that Puerto Ricans have little knowledge about basic money management practices to help them make informed financial decisions. Castro-Gonzalez (2014), Martinez (2013), and Fernandez (2002) agreed that Puerto Ricans seem unprepared and unfamiliar with simple economic concepts needed to make savings and investment decisions because they lack basic financial knowledge. This lack of knowledge has significant consequences for their financial wellbeing because it limits their ability to make financial plans that fill their needs but adjust to their economic realities. Moreover, over 60% of Puerto Ricans considered their income to be insufficient to cover their living expenses and reported experiencing situations where they did not have enough economic resources to cover

their living costs (Castro-Gonzalez, 2014). Their unfamiliarity with financial products combined with high poverty rates made it difficult for Puerto Ricans to thrive in a struggling economy. This situation also restricted their capacity to get loans and mortgages or to plan for their future retirement.

The specific problem of the study was the lack of information regarding the processes and sources that Puerto Ricans employ to develop their financial knowledge and to inform their financial decisions. Studies performed in Puerto Rico, as with many other studies about financial literacy, focused on participants' financial knowledge rather than the individual's decision-making process (González-Corzo, 2015; Gudmunson & Danes, 2011; Martinez, 2013). Still, individuals, families, and communities use different approaches to transmit knowledge. Therefore, "one size fits all" education programs may have no impact on the financial literacy of Puerto Ricans because of the vast differences that exist between the American and the Puerto Rican cultures. It may be critical to create programs that specifically target Puerto Ricans. After all, culture is one of the variables that define the environment in which children learn how to behave as consumers (Hota & McGuiggan, 2006). Policymakers need to familiarize themselves with cultural differences to comprehend how social factors influence learning processes. Moreover, to create a program that effectively introduces this group to basic financial concepts, researchers need to identify the methods and approaches that Puerto Ricans prefer to transmit and acquire knowledge.

Also, research addressing the financial literacy and the socialization experiences of Puerto Ricans was limited to a few studies. Martinez (2013) examined the financial

literacy of Puerto Rican college students at a public university located on the island. He found that students had limited financial knowledge, although many participant students majored in business degrees. In a separate study, Castro-Gonzalez (2014) assessed the financial literacy of adults working at the same public institution. While Castro-Gonzalez collected data regarding the information sources used by participants to inform their financial decisions, she did not include formal financial education among the sources assessed in her study. Similarly, Fernandez (2002) collected data about the financial socialization experiences of Puerto Ricans, focusing his study on their influence on purchasing and consumerist behaviors. However, Fernandez did not examine the impact of socialization agents on the saving, planning, or investing behaviors of study participants. Thus, I performed a study in which I could identify the socialization agents used by Puerto Rican college students while measuring their financial literacy using the criteria proposed by Moschis and Churchill (1978).

Purpose of the Study

The purpose of this quantitative, nonexperimental study was to examine the information sources that influence the financial knowledge and decisions of Puerto Rican college students. This study worked as an extension of the studies performed by Castro-Gonzalez (2014), Fernandez (2002), and Martinez (2013). However, this study focused on the influence of parents, school, peers, and media on the financial literacy of Puerto Rican college students, 18 years old and older.

For the study, I used a nonexperimental approach to examine the relationships between sources of information and the financial literacy of Puerto Rican college

students. A nonexperimental design allowed me to move the study from a laboratory to the participants' natural setting (Campbell & Stanley, 1963). This design also helped me to identify any existing relationship between the variables in the study (Frankfort-Nachmias & Nachmias, 2008). In this case, I examined the possible correlation of parents, media, (including social networks like Facebook, LinkedIn, Twitter, and YouTube), peers, and school (independent variables) with the financial literacy (dependent variable) of Puerto Rican college students. I chose the independent variables following the design proposed by Moschis and Churchill (1978).

Research Questions and Hypotheses

I developed the following research questions to gather data that helped identify the correlations between the independent (parents, school, peers, and media) and the dependent (financial literacy) variables. The following research questions and hypotheses set the framework for the study to assess the financial literacy of Puerto Rican college students. Following Moschis and Churchill's (1978) identification of four information sources and the role they played in the behaviors of participants, the research questions and hypotheses for this study included:

Research Question 1: What sources of information do Puerto Rican college students use to obtain financial information?

$H_0 1$: The mean proportion of the sources of information used by Puerto Rican college students is the same for family, mass media, school, and peers.

$H_a 1$: The mean proportion of the sources of information used by Puerto Rican college students is not the same for family, mass media, school, and peers.

With research question 1, I identified what sources of information Puerto Rican college students prefer to use when making financial decisions. All four categories will act as independent variables or factors of the study. I examined the collected data using descriptive statistics and a bar chart for each category to show the distribution of answers. I also performed a one-way ANOVA to analyze differences among the means of the factors.

Research Question 2: How much do the information sources influence the financial decisions that Puerto Rican college students made?

$H_0 2$: The information sources had no influence on the financial decisions of Puerto Rican college students.

$H_a 2$: The information sources influenced the financial decisions of Puerto Rican college students.

Research question 2 assessed the relevance of the independent variables (family, mass media, school, and peers) in the process of making financial decisions among participants. The sources of information kept acting as independent variables, while the extent of influence represented the dependent variable. I summarized the collected data and displayed the distribution of observations using a bar chart. Then, I performed an ANOVA to compare the means of the four factors. Finally, I analyzed the collected data using a multiple linear regression model to quantify the correlations between each predictor (parents, school, peers, and media) and the dependent variable (financial literacy).

Research Question 3: To what extent does the frequency of exposure to financial

topics through family communication, mass media, school, or peers predict the degree to which the participant shows financial literacy?

$H_0$3: There is no relationship between the predictors and the financial literacy of participants ($\beta1 = \beta2 = \beta3 = \beta4 = 0$).

H_a3: At least one of the predictors is related to the financial literacy of participants ($\beta i > 0$, where i $= 1$ thru 4).

In research question 3, family communication, mass media, school, and peers acted as the independent variables or predictors. Family communication considered discussions of financial topics with parents, grandparents, or other relatives. Mass media included T.V., radio, and newspapers, and social media such as Facebook, LinkedIn, Twitter, and YouTube as sources of information. School included any form of financial education received at school or college through business, finance, or economy courses. School also included money management workshops or counseling received from professional advisors. Peers included the financial information gained from friends, classmates, and coworkers.

I tested the above hypothesis using a bar chart to display the distribution of observations. I also assessed the correlation between each predictor (parents, school, peers, and media) and the dependent variable (financial literacy) with simple multiple regression, using the *p*-value of the regression to determine the influence of the predictors on the dependent variable and to demonstrate the statistical significance of the test. I also performed a one-way ANOVA to compare the means of each predictor.

Theoretical Framework for the Study

I based this study's theoretical framework on two conceptual frameworks. Moschis and Churchill (1978) developed the first framework, the consumer socialization model. They suggested that parents, school, media, and peers act as socialization agents, transmitting consumer knowledge, skills, and attitudes. Gudmunson and Danes (2011) developed this study's second conceptual model, the family financial socialization model. The family financial socialization model presented the family as the primary financial socialization unit (Danes & Yang, 2014). As children grow and become adults, they start their own families with their chosen spouses. At this stage, the spouses need to find a balance between their diverse socialized financial patterns, creating a combined financial process that they will later transmit to their children (Danes & Yang, 2014). An agreement among spouses will produce a new set of knowledge and beliefs that they will transmit to their children.

Consumer Socialization

Moschis and Churchill (1978) identified and examined four agents of financial socialization and their influence on the financial decisions and behaviors of children and adolescents. They found that parents had the strongest influence as a socialization agent while school resulted as the weakest predictor. The authors also argued that the frequency of family communication about socially desirable consumer behavior had no significant correlation with the frequency of children performing in such a manner. Also, Moschis and Churchill found no correlation between the number of consumer-related courses taken at school and consumer skills.

Moschis and Churchill (1978) noticed a significant correlation between the amount of information obtained from mass media sources and social motivations for consumption and materialistic attitudes among children and adolescents. As part of the model, Moschis and Churchill stated that media and peers had a strong influence as socialization agents. However, contrary to parents and school, peers and media showed strong correlations towards consumerist behaviors instead of socially desirable actions. As a result, the authors stated that such exposure promoted the acquisition of expressive or affective aspects of consumption, referring to people attaching social meaning to material goods leading to materialistic values and social motivations. Similarly, adolescents learn cognitive skills through their peers, also contributing to the learning of the expressive consumption elements.

Family Financial Socialization

Family Financial Socialization is a conceptual model proposed by Gudmunson and Danes in 2011. The authors proposed a multidisciplinary conceptual model in which they combined family studies and financial literacy perspectives to emphasize the relevance of longitudinal socialization processes occurring within the family context (Danes & Yang, 2014; Gudmunson & Danes, 2011). According to Danes and Yang (2014), the financial socialization model contributes to the explanation of financial behaviors and outcomes. Unlike other conceptual models, the family financial socialization model explores the link between the processes and the outcomes as part of the model.

In the financial socialization model, Gudmunson and Danes (2011) identified the

family as the primary socialization entity in which socialization activities occur both purposively and implicitly. Purposive socialization incorporates the deliberate and planned aspects of the socialization activities (Danes & Yang, 2014). Parents dedicate their time and effort to teach their children about money management practices, financial risk, and retirement planning. However, purposive socialization is often affected by demographic characteristics. In their model, Gudmunson and Danes (2011) argued that demographic differences affect the socialization processes and, therefore, the socialization outcomes. The authors identified demographic variables like gender, age, or socioeconomic status as predictors of socialization activities, suggesting that these variables have a relation with financial outcomes such as financial wellbeing.

Contrasting from the purposive socialization previously described, financial socialization also occurs through unconscious vehicles. Gudmunson and Danes (2011) understood that most financial socialization activities occurred unconsciously rather than purposively. Moreover, Danes and Yang (2014) argued that much of the socialization activities occur under nonvolitional circumstances, transmitting knowledge and values in an osmotic fashion through family interactions. Nonvolitional learning occurs through observation and imitation of parental attitudes and behaviors by their children. However, in this case, socialization will depend on the attention that the child pays to his or her parents. Implicit financial socialization will also depend on the attitudes and behaviors that the child decides to copy and adopt.

Relation to the Study. Both theories, the consumer socialization theory and the family financial socialization model, agree that family represents the primary

socialization unit to obtain financial knowledge. As a result, parents have a powerful position to influence the attitudes and behaviors of their children, even when other socialization agents appear during a lifetime. Therefore, I considered it essential to understand the extent of the parents' influence among Puerto Rican families, compare their influence to the impact of external socialization agents (school, peers, and media) and, if possible, determine how these four variables interact in the proposed setting.

Also, the family financial socialization model explores the connection between learning processes and the behavioral outcomes, as previously stated. It was fundamental to identify effective and efficient communication vehicles before designing an educational campaign to optimize its impact. In Puerto Rico, there are various campaigns to provide financial education, but most of them focus on the education of individuals. The identification of efficient communication vehicles may improve the transmission of financial knowledge and the promotion of positive financial behaviors among Puerto Ricans at a larger scale.

The topics discussed in the theoretical framework are further developed in the Literature Review. I further described the consumer socialization and the family financial socialization models as part of the detailed examination presented in Chapter 2. Also, I explained how both groups of researchers assessed different sets of variables, the outcomes of their studies, and how later researchers applied their findings.

Nature of the Study

I proposed a quantitative, nonexperimental approach to data collection and analysis to conduct the study. The quantitative approach helped me identify several

factors influencing the financial literacy of Puerto Ricans. A quantitative approach also allowed me to compare data from four independent variables (parents, school, peers, and media) and to make a correlational assessment of the variables (Field, 2013). Quantitative research seemed like an effective method to determine the socialization agents that influence the financial decisions of Puerto Rican college students. Quantitative research focuses on answering *what* questions while qualitative studies aim to respond to *why* questions (Barnham, 2015). Barnham (2015) argued that while qualitative research focuses on understanding *why* people think or behave a certain way, qualitative researchers need a quantitative foundation to identify *what* people think or do. So, to understand why Puerto Ricans use specific sources of information to make financial decisions, I first had to determine what sources they use.

Since this study examined the correlation between several variables, I used a cross-sectional design. I was aware that I could not use a cross-sectional design to describe causal relationships among the proposed variables (Mauldin, Cho, Gutter, & Kim, 2012; Ponnet, 2014). Instead, the cross-sectional design allowed me to observe phenomena without directly interfering with participants (Field, 2013). Avoiding any interaction with participants helped improve the chances that they provide honest responses to the questions of the study. Also, the cross-sectional design helps researchers to describe a pattern of relationships between the proposed variables (Frankfort-Nachmias & Nachmias, 2008). I believe that using this design helped me determine how the sources of information influenced the financial knowledge of participants without manipulating their relationship.

Quantitative research involves the utilization of numerical, mathematical, or statistical analysis of data collected through different instruments. Researchers often relate quantitative methods to sampling, measuring, and procedures for causal inference (Zyphur & Pierides, 2017). This approach may be used to quantify data from a small sample and produce objective information to generalize the studied phenomenon to a larger population. The proposed quantitative approach helped me establish a representation of the behavioral and mental facts of the study sample, which included college students enrolled in Puerto Rican universities (Barnham, 2015). Moreover, this method enabled me to establish a relationship between financial knowledge and socialization processes in Puerto Rico.

The sample was composed of 198 undergraduate Puerto Rican students, 18 years of age and older. I provided further details about the process of estimating the size of the sample in Chapter 3. Participation in the study was voluntary. Thus, students accepted or declined to participate in the College Student Financial Literacy Survey (CSFLS). Jorgensen developed the CSFLS as part of his master's thesis to assess the financial literacy of undergraduate and graduate college students (Jorgensen, 2007; Jorgensen & Savla, 2010). CSFLS generates data about parental and peer influences and examines the correlation between financial literacy and financial behavior (Jorgensen, 2007). Moreover, this data collection instrument includes questions regarding the information sources that participants use to obtain money management knowledge and inform their financial decisions. Appendix G contains the Research and Survey Questions Matrix (Table 13) showing which survey questions are relevant to each research question. I

analyzed the data collected from the survey using a combination of descriptive statistics, simple multiple regressions, multiple linear regressions, and one-way ANOVA.

Definition of Terms

The following list presents the definitions of terms related to the variables of the study. I provided a short description for each of the terms to help readers understand them in relation to the study.

Consumer socialization: The process through which children and adolescents learn consumer related knowledge, skills, and attitudes that are relevant to their performance as consumers (Moschis & Churchill, 1978; Ward, 1974).

Financial literacy: According to the literature, financial literacy contains different elements. The Jump$tart Coalition for Personal Financial Literacy (2011) stated that financial literacy refers to the people's capacity to apply their knowledge and skills to manage financial resources effectively. Lusardi and Mitchell (2014) defined financial literacy as the ability to process financial information and make sound, informed decisions about planning, wealth accumulation, and debt. Willis (2017) extended that definition to state that financial literacy results from the combination of awareness, knowledge, skill, attitude, and behaviors necessary to make sound financial decisions.

Financial socialization: The process through which individuals develop the financial values, attitudes, and behaviors that foster their financial independence (Kim & Chatterjee, 2013).

Media: The sources of financial and consumer information acting as socialization agents (Moschis & Churchill, 1978). Media includes T.V.; radio; newspapers; and social

media such as Facebook, LinkedIn, Twitter, and YouTube.

Parents: Refers to family communication about financial topics occurring

between children and their parents, grandparents, or guardians (Moschis & Churchill,

1978).

Peers: Denotes the financial information gained from friends, classmates, and

coworkers (Moschis & Churchill, 1978).

School: Signifies any form of financial education received at school or college

through business, finance, or economy courses that promotes the understanding of

business terms and practices, basic economics vocabulary, effective money management,

and the ability to select and use goods and services (Moschis & Churchill, 1978).

Socialization agents: Sources of influence that transmit norms, attitudes,

motivations, and behaviors to learners (Moschis & Churchill, 1978).

Socioeconomic status: Socioeconomic status encompasses household income,

financial security, and educational attainment (American Psychological Association,

2018). However, the term also involves subjective perceptions of social class and status,

and attributes regarding the quality of life, opportunities, and privileges available to the

people within their socioeconomic group (American Psychological Association, 2018).

Assumptions

Researchers use assumptions to clarify aspects of the study that are commonly

believed but cannot be demonstrated to be true. In the case of this study, I presented two

key assumptions. To begin, I assumed that participants would be truthful with their

responses to the survey questions, after assuring that their participation was anonymous

and confidential. Participation in the study was voluntary. Students could withdraw their participation at any time without having any concern of future consequences. Truthful and honest responses led to the development of reliable results. Moreover, reliable outcomes enabled me to produce accurate answers to the research questions of the study.

I also assumed that the sample would provide a precise representation of the student population in Puerto Rico, thus leading to generalizable findings. Study prospects had to be 18 years of age and older, enrolled in a university located in Puerto Rico. I expected the sample of the study to have the capacity to reflect Puerto Rico's college student population in terms of gender, age, and regional distribution. Achieving such representativeness assured the external validity of the study.

Limitations

Since I used a cross-sectional design, this study faced some limitations. First, the cross-sectional design did not allow the manipulation of the independent variable (Frankfort-Nachmias & Nachmias, 2008). As a result, I will not be able to make before and after comparisons of the data in this study. Also, I was not able to confirm any causal relationship between the predictors and the independent variable of the study (Mauldin et al., 2012; Ponnet, 2014).

Second, the cross-sectional design allowed the collection of data in a particular period of time. Therefore, this design provided a snapshot of that specific period (Mindra & Moya, 2017). The implementation of a longitudinal study would provide additional data to produce stronger relationships between the variables of the study. However, it would also require the use of additional resources that I currently lack. Thus, I analyzed

data collected at a single point of time without following the same sample over time. However, behavior and attitudes change over time, so there was a chance that people's views also changed after a few years (Nkundabanyanga, Kasozi, Nalukenge, & Tauringana, 2013).

Third, I collected the data in Puerto Rico. Therefore, the outcomes of this study may not represent other Hispanic groups, either in the mainland nor other Hispanic countries. Other Hispanic groups may face similar challenges as the Puerto Rican community. Yet, these groups' experiences may differ as a result of different settings or environments around them.

Scope and Delimitations

I focused the study on the identification of information sources that Puerto Rican college students use to inform and make decisions. Selection criteria included students enrolled in an undergraduate program in one of the identified institutions to participate in the study. Participants had to be 18 years of age or older. Participants under 18 years of age were removed from the data analysis.

Some Puerto Rican universities have satellite campuses in the mainland. I did not consider or include students enrolled in campuses located outside of the island for the study. Finally, the outcomes of the study reflected the demographic characteristics of Puerto Rican college students. As a result, I do not expect that the outcomes of the study will apply to other ethnic groups.

Significance of the Study

Puerto Ricans currently face many economic challenges. Since 2014, the Puerto Rican government deals with 72 billion dollars in public debt, unemployment rates double those of the mainland, and the median income of the working class lies below $20,000 (Pew Research Center, 2017). The government closed over 200 public schools only in 2018 and also made large cuts to healthcare services in an effort to reduce public expenses. The detrimental conditions of the economy require Puerto Ricans to understand how to make the best use of their money.

Such financial challenges may impact different areas of a person's life. In some cases, people struggle to pay their rent or mortgages, jeopardizing their safety. In other cases, facing financial challenges may lead people to suffer psychological illnesses that compromise their overall wellbeing. Allmark and Machaczek (2015) argued that changes in financial knowledge and capabilities led people to improve their psychological health. Thus, significant changes in financial knowledge and skills may offer Puerto Ricans an opportunity to improve their economic conditions and welfare. Moreover, these changes might represent a substantial difference in how Puerto Ricans improve their quality of life.

Even in such challenging conditions, people can still live good lives. According to Allmark and Machaczek (2015), people can manage to live well in poverty, although they need to have extraordinary skills to thrive in such conditions. However, that may not be the case for families that seriously lack any economic resources. Many financial education programs proved beneficial to improve the financial knowledge and skills of

individuals (Dündar, 2017; Grohmann et al., 2015; Huston, 2015). Still, in many cases, changes in financial skills provided insufficient support for clients to improve their economic conditions.

Tuominen and Thompson (2015) suggested that this lack of impact results from the focus used to develop financial education programs. Tuominen and Thompson argued that many financial education programs focus on providing working class individuals with skills to successfully manage their income, enabling them to make savings and retirement plans. However, policymakers often forget that, even though they develop a set of skills, some people do not have sufficient resources to save or invest money after paying their bills. Therefore, policymakers should develop financial literacy programs that specifically target extremely poor socioeconomic groups by adjusting to their needs and addressing their economic realities and challenges.

In the proposed quantitative study, I examined the information sources that influence the financial knowledge and decisions of Puerto Rican college students. According to Barnham (2015), quantitative research helps answer "what" questions while qualitative research explains why things happen. I aimed to identify what sources of information participants use, thus providing researchers, educators, and policymakers with a starting point to develop effective strategies that respond to the financial needs of Puerto Ricans.

Significance to Social Change

As previously mentioned, "one size fits all" programs lack enough tools to fill the needs of different groups. Policymakers may use research studies to optimize financial

education, promote effective education programs, and improve financial wellbeing in a

focused population (Britt, Cumbie, & Bell, 2013; Xiao & Porto, 2017). With this study, I

generated data about the communication vehicles that Puerto Ricans from different

socioeconomic groups use to transmit knowledge and capitalize on these channels.

Hence, policymakers in Puerto Rico may get data to customize education programs that

adjust to Puerto Rican's needs that prove useful in the transmission of knowledge and

improving the quality of their lives.

The development of new strategies or the modification of existing ones may

produce a significant impact on the financial attitudes and behaviors of future

generations. The introduction and inclusion of new groups and settings may help to

examine how financial education impacts the knowledge and skills of adolescents in new

focus groups (Lusardi et al., 2010). By changing the attributes and context of participants

as proposed in this study, I identified trends associated with variations in financial

behavioral patterns among Puerto Ricans. The identification of the sources and processes

that Puerto Ricans employ to learn financial skills may provide the foundations to

develop new approaches to help them overcome such difficult times.

Summary

In this chapter, I discussed key aspects of the proposed examination of the

information sources that Puerto Ricans use to make financial decisions. The chapter

introduced the background, problem statement, and the purpose of the study. In this

study, I sought to fill a research gap related to the financial socialization practices among

Puerto Ricans and how these practices influence their financial decisions and define their

economic wellbeing. I also described the theoretical framework of the study and the

nature of the study. The theoretical framework of the proposed cross-sectional,

nonexperimental study was the consumer socialization theory developed by Moschis and

Churchil (1978) and the family financial socialization model proposed by Gudmunson

and Danes (2011). As part of this chapter, I introduced a list of definitions of terms and

discussed the assumptions, limitations, scope, delimitations, and significance of the

study, including its potential to lead the way for social change.

In Chapter 2, I continued to elaborate on the problem and purpose of the study.

The focus of the chapter is a thorough assessment of financial literacy literature and the

theoretical foundation of the discipline. I also provided a detailed description of the

variables included in this study and discussed the research questions and hypotheses that

will guide the study. In Chapter 3, I describe the target sample, the data collection

instrument, and the data analysis plan. Later in Chapter 4, I describe, interpret, and report

the statistical outcomes of the study. Finally, in Chapter 5, I thoroughly discuss the

findings of the study and the implications of these results to theory, practice, and positive

social change.

Chapter 2: Literature Review

In this literature review, I focused on four agents of financial and consumer socialization: parents, school, peers, and media, and how these agents influence the financial and consumer behaviors of people. I examined how sociodemographic variables like gender, age, and socioeconomic status moderate the socialization experiences of individuals. I also examined the financial literacy of Puerto Ricans, the financial situations they face, and the conditions that led the Puerto Rican economy to a detrimental financial state.

The literature review contained in this chapter has several distinct parts. In the first section, I reviewed the background of the study and introduced relevant literature to examine various aspects of and perspectives on the lack of financial literacy among Puerto Ricans. In the second part, I reviewed the literature on consumer socialization and financial socialization. In the third section, I examined different vehicles or sources of information that Puerto Ricans may use to inform their financial decisions. I compared and contrasted four traditional groups of information sources (mass media, school, peers, and family) with modern information vehicles (social networks). In the last sections, I provided evidence of the problem for the study, introduce the gap in research, and discussed the implications for social change.

According to the literature, many Puerto Ricans have low levels of financial literacy, lacking knowledge of basic financial and economic concepts (Castro-Gonzalez, 2014; Gonzalez-Corso, 2015; Martinez, 2013). However, limited studies have been performed to identify the socialization agents that Puerto Ricans use to inform their

financial and economic decisions. Therefore, the purpose of this quantitative, cross-sectional study was to assess the socialization agents that Puerto Rican college students use to inform their financial decisions. The identification of financial socialization agents may provide researchers, educators, and policymakers with guidelines to delineate effective educational strategies to improve the financial literacy of Puerto Ricans.

Literature Search Strategy

Databases

I performed most of the literature review using the Walden Library databases. The revised literature included peer-reviewed articles from 2013 to 2018, except where older references were needed, like the theoretical framework. In this case, I used studies from the 1970s and early 2010s. Some of the databases employed include ABI/INFORM Collection, Academic Search Complete, Business Source Complete, ProQuest Central, PsycINFO, ScienceDirect, and SocINDEX with Full Text. All the sources I used were scholarly, peer-reviewed research articles.

Key Search Terms

Although I used around 26 key search terms and combinations of search terms for the development of my literature review, the general keywords of my search included *financial socialization*, *consumer socialization*, *financial literacy, college students*, *financial education*, *socialization agents*, *parents, school*, *peers*, *media*, *financial literacy of Hispanics in the U.S.*, *Puerto Rico*, *personal finance*, and *finance education*.

Theoretical Framework

While I found several valuable theories to build the theoretical framework of the study, I chose to combine Moschis and Churchill's (1978) theory of consumer socialization with Gudmunson and Danes' (2011) model of family financial socialization. According to Moschis and Churchill, children and adolescents learn financial concepts through four agents of socialization, including parents, school, peers, and media, with parents playing the most significant socialization role. These agents provide children with financial knowledge and skills they will use throughout their lifetime.

Likewise, Gudmunson and Danes' (2011) family financial socialization model stated that parents play a relevant role in the financial socialization experiences of their children. Gudmunson and Danes integrated two dimensions to their theory. First, the Family Financial Socialization model considered the socialization processes, including family interactions and relationships and purposive financial socialization (Danes & Yang, 2014). Second, the model established a connection between the socialization processes and the outcomes, meaning the financial attitudes, knowledge, and capabilities of children (Danes & Yang, 2014). Instead of focusing only on financial literacy, Gudmunson and Danes added another dimension to their study by assessing the learning processes that lead to the acquisition of financial knowledge.

Since the 1970s, researchers have examined the financial literacy of people. Some of them aimed to understand how experiences during childhood and adolescence lead to the development of future thinking and behaving patterns (Moschis & Churchill, 1978; Ward, 1974). Researchers like Ward (1974) added a twist to socialization studies to

further examine how childhood and adolescent experiences modeled their financial literacy during adulthood. In other words, Ward prepared the foundations for the increasing growth of the financial socialization research topic.

Ward (1974) developed one of the earliest studies about consumer socialization to explain the development of patterns of thinking and behaving that compromise consumer behavior. Ward's effort was a response to the need for public policy formulation, effective consumer education programs, and efficient marketing and information campaigns directed at young people. One of his achievements relies on his focus on family, instead of individuals, as a unit. Ward recognized the family as a complex system that had to be understood in terms of family consumer behavior, intergenerational consistency, and the impact of social trends on the buying patterns of young people. Moreover, Ward did not contemplate socialization as unilateral, but rather as a bidirectional relationship where children influence parents.

One of the early theories that stemmed from Ward's work assessed the learning processes occurring during childhood and their correlation with adulthood financial behaviors. Moschis and Churchill (1978) developed the consumer socialization theory to study the processes that lead to financial decisions. They examined how different socialization agents influence the financial behavior of individuals. In their study, the researchers compared and contrasted the impact of four agents, family, media, school, and peers, on people. They also examined financial behavior differences in people with different demographic characteristics, such as gender and socioeconomic background. Through their model, Moschis and Churchill discovered trends in diverse populations and

identified which sources had the greatest impact. They also influenced how policymakers design and disseminate their campaigns to promote either saving or consumerist behaviors.

Ward's consumer socialization model also served as the foundation for the family financial socialization model. Gudmunson and Danes (2011) developed the family financial socialization model to further examine the role of family in the processes that define differences in financial knowledge and behaviors. Their theoretical model provides a unique approach to understand the mechanisms that lead to financial knowledge and wellbeing, focusing on family as a significant agent in the acquisition of financial literacy. Like Moschis and Churchill's model, family financial socialization examines socialization processes to identify trends in financial behaviors and outcomes.

Consumer Socialization Theory

The consumer socialization model explains the processes and the sources from which individuals obtain financial knowledge. Initially developed by Ward in 1974, consumer socialization identifies the processes by which children acquire consumption-relevant knowledge, attitudes, and skills to function in marketplace transactions (Sundarasen, Rahman, Othman, & Danaraj, 2016; Ward, 1974). Consumer socialization is also defined as the process of learning social roles and the behaviors, values, and norms associated with and expected from such roles by society (Dündar, 2017; Ward, 1974). Learning processes stem and evolve from different sources, such as family, media, school, and peers. Accordingly, financial knowledge, attitudes, and skills learned during childhood also define the financial literacy of individuals when they reach adulthood.

Ward made a conceptual distinction between two consumer socialization processes. He addressed consumer socialization as a process directly related to consumer behavior (Ward, 1974). Meanwhile, he also examined the acquisition of skills, attitudes, and knowledge indirectly related to consumer behavior (Ward, 1974). Ward highlighted the fact that both processes play a significant role in consumer processes. However, Ward also highlighted the relevance that social significance and expectations have in the transmission of knowledge during socialization processes.

Following Ward's footsteps, Moschis and Churchill (1978) expanded the consumer socialization model to examine the processes involved in consumer socialization. Moschis and Churchill (1978) introduced consumer socialization as a social learning process occurring between children and agents. Family, media, school, and peers act as socialization agents and transmit financial information to children and adolescents. The consumer socialization model helped the authors better explain the development of attitudes and values from childhood to adulthood.

Moschis and Churchill based their consumer socialization model on the social learning approach theory. The social learning approach proposes that learning processes occur through interactions of learners with these agents (Moschis & Churchill, 1978). Likewise, Moschis and Churchill proposed that socialization agents transmit norms, attitudes, motivations, and behaviors to learners. The impact of socialization agents depends on the information transmission processes, the level of influence of each agent, and the outcomes of the socialization experiences (Hota & McGuiggan, 2006). As a result, the frequency of contact with the learner provides agents with control over the

interactions in the learning process.

Moschis and Churchill proposed that family, mass media, school, and peers act as agents of consumer socialization. Parents play a significant role in building adequate consumer behaviors in children, while mass media and peers also played a relevant role in developing consumerism attitudes in children and adolescents (Gudmunson and Danes, 2011; Moschis & Churchill, 1978). Parents have such a significant role because they represent the primary source of socialization for their offspring. However, as children grow, they interact with other socialization agents. For example, frequent communication with peers promoted social motivations for consumption as well, leading to materialistic values among adolescents (Chu & Sung, 2015; Moschis & Churchill, 1978; Niu, 2013). By using the consumer socialization model, researchers can trace the relationship between agents of socialization and the frequency of socialization activities to identify a trend of possible behavioral outcomes.

The outcomes for school as a socialization agent contrasted with the results from earlier studies. Moschis and Churchill (1978) found little evidence of a significant correlation between school or formal consumer education and consumer affairs knowledge. In other words, an adolescent's ability to manage his or her finances will not depend on how many formal finance courses he or she attends. Other researchers, like Fernandes et al. (2014), found no positive correlation between school as a socialization agent and financial literacy. However, Moschis and Churchill suggested that additional factors may affect the impact of formal consumer education in the financial capabilities of people. Researchers like Dündar (2017) and Grohmann et al., (2015) agree that the

combination of financial education and the support of parents produces positive effects on the financial literacy of children. It may be that school as a socialization agent is not sufficient to modify consumer attitudes and behaviors in children. However, combining school with other socialization agents may increase the chances to influence the financial literacy of children.

As years passed, finance and economic researchers used the consumer socialization theory to examine the factors influencing financial attitudes and behaviors through consumer socialization. Today, the consumer socialization model consists of stages identified as problem recognition, information seeking, evaluation, purchase decision, and postpurchase evaluation (Thaichon, 2017). Recent researchers also changed the settings of their studies from brick and mortar retail to online shopping to understand current consumer behaviors (Quintal, Phau, Sims, & Cheah, 2016).

Family Financial Socialization Model

I used the family financial socialization (FFS) model as the second theoretical framework to build the foundation of this study. Family financial socialization (FFS) focuses on explaining the processes through which people obtain financial skills (Gudmunson & Danes, 2011; Danes & Yang, 2014). The model considers the development of financial values, attitudes, knowledge, and behaviors that contribute to the financial capacity and wellbeing of people (Payne, Yorgason, & Dew, 2013). Gudmunson and Danes first introduced the family financial socialization model to explain the extent to which socialization processes define the financial behavior of people. They presented the family as a socialization unit and primary source of

knowledge.

The model introduces parents as the primary socialization agent as they interact with children from their earliest stages of development. Family financial socialization (FFS) proposes that parents influence the development of desirable consumer behavior in their children as parents play a relevant role in socialization activities (Danes & Yang, 2014; Gudmunson & Danes, 2011; Sundarasen et al., 2016). The learning process occurs through frequent family interactions and relationships, both implicit and purposive, during childhood and throughout a lifetime (Danes & Yang, 2014; Gudmunson & Danes, 2011). As a result, the influence of parents on the financial literacy of their children will depend on the frequency of interactions. Moreover, the impact of parental interactions will also vary according to the type of information they transmit to their children through direct modeling and unconscious examples.

Gudmunson and Danes developed the family financial socialization model by integrating two components or dimensions identified as processes and outcomes (Danes & Yang, 2014). They also introduced three major theoretical propositions. First, the authors suggested that the success of family financial socialization to promote positive financial behaviors will directly depend on the quality of interpersonal family relationships. Second, they suggested that financial socialization occurs during a lifetime, mostly through implicit day to day family interactions and relationships. Finally, Gudmunson and Danes proposed that demographic characteristics transmitted through socialization activities may affect socialization outcomes.

However, the model's strength had nothing to do with its propositions. The most

significant contribution of the model comes from the integration of implicit and

purposive socialization dynamics (Danes & Yang, 2014). In other words, financial

socialization occurs both on purpose and by accident. Purposive socialization

incorporates conscious, intentional, and deliberate efforts that parents employ to transmit

knowledge (Danes & Yang, 2014; Gudmunson & Danes, 2011). In contrast, implicit

socialization results from unconscious, nonvolitional socialization processes. Gudmunson

and Danes included implicit socialization because they understood that people learn

many values, beliefs, and attitudes through an osmotic fashion during day to day family

interactions (Danes & Yang, 2014; Gudmunson & Danes, 2011). Furthermore,

Gudmunson and Danes (2011) understood that purposeful socialization efforts have

proven less frequent than implicit interactions. In sum, most of the learning and

socialization process occurs through observation, not by direct modeling. Therefore, if

parents do not act according to their teachings, children may copy their parents' actions

and behaviors more frequently than they follow their teachings.

Applications of the Family Financial Socialization Model

Although Gudmunson and Danes (2011) developed the family financial

socialization model a few years ago, there are numerous applications of the model.

Researchers have challenged the role of parents as principal agents of socialization by

examining the influence of spouses, siblings, and children as socialization agents. There

is evidence that after getting married and creating a new socialization unit, spouses play a

significant role in the financial decision making processes of individuals (Payne et al.,

2013). As spouses come with different socialization experiences from their family units,

the financial wellbeing of couples will depend on their ability to synchronize financially and reduce conflicts (Payne et al., 2013). Furthermore, a couple's ability to sync will also define the knowledge, skills, attitudes, and behaviors that they will later transfer to their children through financial socialization.

Puerto Ricans and Financial Literacy

Limited studies have been conducted to assess the financial literacy of Puerto Ricans living on the island. These studies revealed that Puerto Ricans have little knowledge about basic money management practices (Martinez, 2013). Puerto Ricans also seem unfamiliar with basic economic concepts needed to make savings and investment decisions (González-Corzo, 2015). Even individuals with business degrees, who demonstrated more financial knowledge than those who specialized in other disciplines, failed to display adequate financial knowledge (Martínez, 2013). This limited knowledge may lead to financial decisions that ultimately do not support their financial wellbeing. Moreover, these studies provided evidence about the need of Puerto Ricans for financial education, regardless of their background, profession, or age.

Financial education and literacy have relevant research topics for many years. The sources that people use to inform their financial decisions have also been relevant for researchers, educators, marketers, and policymakers since the 1970s (Moschis & Churchill, 1978). These parties have been interested in identifying the influence that sources of information have on people's decision-making processes, although for different purposes. In some cases, interested parties intended to improve people's financial skills by teaching them about saving behaviors, investments, and retirement

planning. Meanwhile, other parties focused on increasing consumerist behaviors.

In Puerto Rico, financial literacy gained more relevance after the financial crisis that started in 2006. Three out of four studies found to address the financial literacy of island Puerto Ricans examined the financial literacy of different groups, including college students, administrative employees, and teachers (Castro-Gonzalez, 2014; Martínez, 2013; Schindler, 2014). The fourth study examined the influence of different socialization agents on the purchasing behaviors of teenagers (Fernandez, 2002). The development of new studies demonstrates the increasing interest of scholars in the financial wellbeing of Puerto Ricans.

Another aspect that impacts the financial literacy of Puerto Ricans includes the sources of information they use to inform their financial decisions. As early as the 1970s, researchers have conducted studies to examine the information sources that people use to inform their financial decisions, including close relatives, peers, formal education, and mass media (Moschis & Churchill, 1978; Ward, 1974). However, little is known about the information sources that Puerto Rican adults use to inform their financial decisions. Fernandez (2002) found that parents, friends, brands, and media personalities from the Internet significantly influence the purchasing decisions of Puerto Rican adolescents. However, Fernandez did not explore the influence of these information sources on saving or investing behaviors or on financial literacy per se.

If Puerto Ricans lack financial information, they might not be capable of transmitting adequate financial knowledge to their children, as the literature suggests. As Fernandez (2002) found that Puerto Rican parents influenced the purchasing behaviors of

Puerto Rican teenagers, his findings suggested that parents had a stronger influence on purchasing than saving behaviors. While 49.8% of participants reported that their parents influenced their choice of buying clothes, only 19.1% reported being influenced by their parents to open a savings account. Nieves-Rodriguez, Perez-Rivera, Longobardi, and Davis-Pellot (2017) validated Fernandez' findings after stating that, on average, Puerto Rican consumers spend more money on apparel than their American counterparts. So even though Puerto Ricans have limited disposable income as a result of the financial crisis and high poverty, they still exhibit consumerist behaviors. Moreover, such consumerist behaviors might be transmitted from parents to their children despite their economic conditions.

The Financial Situation of Puerto Ricans

To have a clear idea about the financial literacy of Puerto Ricans, it was necessary to first take a broader look at the financial knowledge, attitudes, and behavior of the Hispanic community in the United States. In general, financial researchers agreed that Hispanics have low levels of financial literacy when compared to other segments of the U.S. population (Castro-Gonzalez, 2014; Gonzalez-Corso, 2015; Lusardi & Mitchell, 2011; Lusardi et al., 2010). In fact, Lusardi and Mitchell (2011) found that Hispanics displayed lower levels (13.1%) of financial knowledge than White (34.7%), Asian (39.8%) and African American (20.3%) respondents. Also, Lusardi et al. (2010) found a gap in the correct response rate between White and Hispanic respondents of about 16% and 9% for the inflation and risk diversification questions, respectively. These results highlighted the fact that Hispanics scored the lowest on financial literacy surveys. This

outcome also emphasized how Hispanics lack specific financial knowledge of things like inflation, risk diversification, and interest rate.

Later researchers performed similar studies with similar populations and found concurring results. Bassa Scheresberg (2013), Bumcrot, Lin, and Lusardi (2013), and Lusardi and Tufano (2015) all found that Hispanics faced severe disadvantages because they had lower levels of financial literacy when compared to other ethnic groups. Likewise, Murphy (2013) found that White, non-Hispanic men tended to have better economic and psychosocial outcomes than Hispanics. All of these findings seem likely to be generalizable as different researchers obtained similar results after using different data collection instruments on different samples in different time frames.

The lack of financial knowledge among Hispanics also precludes them from choosing and acquiring financial products properly. Young and uneducated Hispanics, ages 25 through 29, frequently chose high-cost borrowing methods when compared to other demographic and ethnic groups (Bassa Scheresberg, 2013). Together, these studies confirmed the substantial need that Hispanics have to learn and understand financial concepts, tools, and products. Furthermore, Hispanics must understand how, by becoming financially literate, they can significantly improve their financial wellbeing.

The Financial Literacy of Puerto Ricans

When comparing the financial literacy of Puerto Ricans with the Hispanic groups included in the research studies previously cited, I found many contrasts. First, Lusardi and Mitchell (2011) found that Hispanics only answered 13.1% of financial literacy questions correctly. Meanwhile, Martínez (2013) found that Puerto Ricans successfully

solved 55% of the financial literacy questions. One important fact about this comparison is that the researchers used different data collection instruments, which may invalidate the comparison of the results. However, even more significant is the fact that Martinez used a survey in Spanish. According to Gonzalez-Corzo (2015), many Hispanics have a limited understanding of the English language. Therefore, using a data instrument in Spanish may have been a factor in the overall outcome of the study performed in Puerto Rico.

The lack of financial knowledge among Hispanics and Puerto Ricans reflected in the decisions they make about asset ownership. Gonzalez-Corzo (2015) found that only 53.6% of Hispanic households living in the U.S. held interest-earning assets at financial institutions in 2011. Likewise, only 0.6% of Hispanic families owned interest-earning assets like securities and bonds, 4.3% held shares of equity securities and mutual funds, and 1.8% owned savings bonds (Gonzalez-Corzo, 2015). Thus, almost half of the Hispanic population in the U.S. does not receive any earnings from these sources of income. Moreover, these findings suggested that Hispanics limit their sources of income to salaries and wages from work.

Hispanics also showed little participation in the development and implementation of retirement plans. Nearly 9.9% of Hispanic families owned IRA or KEOGH accounts, and 25.8% had 401(K) thrift savings plans (Castro-Gonzalez, 2014; Gonzalez-Corzo, 2015). Low participation in retirement plans may result from different factors like insufficient income to contribute to an IRA or 401(K). However, low participation in retirement plans may contribute to the worsening of the living conditions for the elderly,

like living in poverty or being unable to retire.

In contrast to other Hispanic groups, Puerto Ricans showed more promising financial behaviors. Nearly 80% of Puerto Ricans reported having a checking account, about 69% reported having a savings account, and almost 54% had a mortgage, an insurance account, or both in a financial institution (Castro-Gonzalez, 2014). Likewise, about 8% of Puerto Ricans owned bonds, 18% held shares in businesses, and 43% of Puerto Rican households had a pension fund (Castro-Gonzalez, 2014; Gonzalez-Corzo, 2015). These figures suggest that Puerto Ricans showed stronger financial knowledge than other Hispanic groups in the U.S. Also, Puerto Ricans showed more capabilities to obtain and manage interest-earning assets and more complex financial products like bonds, shares, and retirement plans.

In contrast, Puerto Ricans showed a significant lack of knowledge about inflation, interest rates, and retirement planning topics. While almost 29% of Puerto Ricans answered questions about inflation correctly, Hispanics answered 42.4% correctly (Gonzalez-Corzo, 2015; Lusardi & Mitchell, 2011). Similarly, 56.2% of Hispanics correctly answered interest rate questions whereas only 46% and 30% of Puerto Ricans correctly answered interest rate and compounded interest questions, respectively (Gonzalez-Corzo, 2015; Lusardi & Mitchell, 2011). These outcomes contrasted with the two previous topics, where Puerto Ricans surpassed the knowledge of U.S. Hispanics. However, I could not find significant data to explain the factors behind the disparities in financial knowledge among Puerto Ricans.

Finally, Lusardi and Mitchell (2011) found that most Americans did not engage in

retirement planning. In their study, only 43% of Hispanic respondents stated that they have ever tried to calculate how much they should save for retirement. Castro-Gonzalez (2014) found more Puerto Ricans displaying a similar behavior since 58% responded that they have not tried to determine how much they need to save for retirement. In these cases, Castro-Gonzalez' participants included working adults, who were expected to display greater financial knowledge when compared to the college students, who composed Lusardi and Mitchell's sample. However, Castro-Gonzalez demonstrated that Puerto Ricans have less knowledge about inflation, interest rate, and retirement planning than Hispanics in the U.S. regardless of age.

Puerto Ricans and the Financial Crisis

Historically, island Puerto Ricans have faced higher poverty rates than the most impoverished state of the U.S. Puerto Rico's 2015 median household income was less than $20,000, per capita income equaled $11,934, and poverty reached 46.1% (Pew Research Center, 2017). In 2017, unemployment rates hit 11% (U.S. Bureau of Labor Statistics, 2017; U.S. Census Bureau, 2016b). These figures contrast with Mississippi, the most impoverished U.S. state. Mississippi reported a median household income of $39,665 in 2015, a per capita income of $21,057, and the poverty rate of 22% in 2015 while unemployment was 4.9% in 2017 (U.S. Bureau of Labor Statistics, 2017; U.S. Census Bureau, 2016a). This comparison highlights how Puerto Ricans must live with almost half of the annual income, double the poverty rates, and more than double the unemployment rates than people in Mississippi. These conditions not only highlight that Puerto Ricans lack the resources, but also that they have a significant need for financial

literacy to participate in the financial system successfully.

The lack of financial knowledge puts Puerto Ricans at significant risk of facing poverty without any possibility to overcome it. Studies performed in Puerto Rico suggested that Puerto Ricans had inadequate knowledge regarding the most basic economic concepts and money management practices needed to make savings and investment decisions (Castro-Gonzalez, 2014; Martínez, 2013). These same researchers also argued that although Puerto Ricans have saving habits and prepare household budgets, most of the participants did not have their annual expenses covered and end up using their savings to make ends meet (Castro-González, 2014). Since they deal with low salaries and high living costs, it is no surprise that Puerto Ricans reported low participation rates in retirement planning and using their savings to pay for their expenses. In some cases, annual savings would not be able to cover their living expenses for more than three months if they lost their jobs (Castro-González, 2014). As many of them use their savings to pay for monthly bills, they had no money left to invest in other financial products or to take a more active role in the management of their finances. The financial crisis in Puerto Rico only increased the struggle of families who try to overcome poverty.

There are very few published research studies addressing financial literacy of Puerto Ricans. These studies agreed that Puerto Ricans have an increasing need to improve their financial literacy and money management skills to improve their wellbeing (Castro-Gonzalez, 2014; Martínez, 2013). The studies conducted in Puerto Rico by Castro-Gonzalez in 2014 and Martinez in 2013 focused on assessing financial knowledge

and attitudes. Meanwhile, only Castro-Gonzalez explored the processes leading to their

financial performance. However, the information sources assessed by Castro-Gonzalez

did not correspond to those proposed by Ward (1974) and later studied by Moschis and

Churchill (1978). Fernandez (2002), in contrast, examined how parents, friends,

celebrities, and advertising campaigns influenced the purchasing decisions of Puerto

Rican teenagers. As an extension of these three studies, I proposed to examine how

parents, school, peers, and media influence the socialization processes that Puerto Rican

college students undergo. Also, I assessed how demographic factors influence their

socialization experiences and how these experiences define their financial literacy.

Financial Socialization Agents

To understand the processes that Puerto Ricans go through to acquire financial

knowledge, it is important first to discuss the socialization agents that influence such

processes. Individuals can only make informed financial decisions if they possess

adequate knowledge and skills (Erner et al., 2016). Without financial literacy, people may

jeopardize their financial wellbeing as a result of poor financial decisions. Hence,

socialization agents play a relevant role in the acquisition of financial knowledge and

skills.

People interact with countless socialization agents throughout their lives.

However, four of the primary agents that influence the financial and consumer

socialization experiences of children include family, peers or friends, media, and formal

education (Dündar, 2017; Hunter-Jones, 2014; Moschis & Churchill, 1978; Shim, Barber,

Card, Xiao, & Serido, 2010; Sundarasen et al., 2016). Early researchers suggested that

these four agents played a significant role in consumer socialization activities while later studies confirmed the relevance of these four agents (Dündar, 2017; Moschis & Churchill, 1978). These and other researchers agreed that these four agents have different levels of significance towards the financial attitudes of people. Moreover, researchers found evidence that the combination of these agents has a more significant impact on the financial literacy of individuals.

Earlier researchers performed extensive research studies regarding the influence of family in the financial and consumer literacy of people. The evidence highlighted that parents or guardians (family) play a significant role as the primary agents in the socialization experiences of children, especially during the early stages of childhood (Drever et al., 2015; Grohmann & Menkhoff, 2015). However, the influence of parents can be improved or reduced by other factors, such as the parents' levels of financial literacy and the strategies they use to teach their children.

When assessing how people learn about financial concepts, one cannot reduce the assessment to a single source. Parents initially define how to teach children about financial practices. However, consumer socialization experiences will also be defined by other traditional agents, like peers, social media, advertisements in magazines and billboards, and romantic partners (Hunter-Jones, 2014; Serido, Curran, Wilmarth, Ahn, Shim, & Ballard, 2015). Moreover, the approach that schools use to teach economic and financial concepts affects financial and consumer socialization experiences. Hence, the financial literacy of people results from the combination of different factors and agents, and not from a sole source.

Parents

Parents represent the first socialization agent in the education process of children (Aldea & Brandabur, 2013; Mitchell, Petrovici, Schlegelmilch, & Szocs, 2015). According to the literature, parental influence plays a more extensive, substantial, and stronger role on children's consumer behaviors than other factors (Chowa & Despard, 2014; Dündar, 2017; Hancock, Jorgensen, & Swanson, 2013; Hira et al., 2013). Such a strong influence occurs because children depend entirely on their parents for survival. Hence, the impact of parents on their children's understanding of money management begins during the early stages of childhood (Drever et al., 2015). Accordingly, the lessons learned from early socialization experiences still influenced financial and consumer decisions during adulthood. However, it requires continuous and longitudinal efforts for children to learn and comprehend money management skills thoroughly.

Parents can teach and model different financial behaviors through socialization. Grohmann et al. (2015) argued that parental socialization has a significant positive influence on the saving and budgeting behaviors of their children, increasing their degree of financial literacy by about 14%. Similarly, Bucciol and Veronesi (2014) claimed that parental teaching has a substantial and significant effect on saving behaviors and the amounts saved when reaching adulthood. They found that teaching children to save increases saving propensity by 18.3% and the saving amount by 32.5%. Both studies concluded that teaching children to save increases the likelihood that these children will save during adulthood. They also highlighted the need to teach and promote positive behaviors among children. If adults do not show children how to manage their money,

they cannot expect these children to display healthy financial attitudes when they become adults.

Parents can use diverse financial socialization techniques to teach their children about investments. Kim and Chatterjee (2013) noticed a positive association between childhood socialization and financial asset ownership. Hira et al. (2013) also found a significant, although modest, parental influence on investment behaviors, hence increasing net household wealth. The level of influence that parents may have over the financial literacy of their children depends on their knowledge and understanding of financial concepts and products. Likewise, Grohmann et al. (2015) argued that teaching children about saving and budgeting increases the likelihood of them owning safe investments like fixed deposits and bonds. As a result, people who experienced financial socialization as kids demonstrated higher financial literacy and felt no financial anxiety as adults since they understand different financial products. Also, they could be more assertive in their financial decisions about savings, investments, and portfolio diversification.

Researchers also examined the variables that influence financial literacy individually. However, these researchers missed assessing the relevance of fundamental socialization processes between family relationships and dynamics between parents and their children (Kim & Chatterjee, 2013). The parental socialization hypothesis states that child monitoring and consistent discipline practices from parents predict future behaviors in their children during adulthood (Conger, Cui, Bryant, & Elder, 2000). However, applying one teaching strategy by itself may not be an effective socialization tool to

develop sound financial behaviors. Effective parental socialization integrates different tools and strategies to teach children about money management, savings, and frugality.

Modeling behaviors. Children learn through many vehicles, including observation, modeling, interactions, and communication. Dündar (2017) argued that parental role modeling had significant and positive effects on children's conscious consumerism levels. Children often learn by observing their parents' budgeting or spending habits (Bucciol & Veronesi, 2014; Drever et al., 2015; Grohmann et al., 2015; Grohmann & Menkhoff, 2015). Learning through observation is part of indirect, nonvolitional learning processes. In contrast, when parents model conscious consumer behaviors in their children, they significantly affect the children's interest in conscious consumerism, encouraging them to adopt positive saving habits (Drever et al., 2015; Dündar, 2017). However, the best socialization strategy combines modeling with monitoring, communication, and practice (Bucciol & Veronesi, 2014). Hence, parents can increase their impact by combining different methods, tools, and strategies and increasing the frequency of interactions to maximize their socialization efforts.

Effective parents communicate and monitor the financial behavior of their children frequently. Parents who discuss spending and saving decisions with their children promote both the children's involvement in the decisions made and their understanding of the purpose behind these decisions. Also, when parents actively engage their children in financial issues, they provide kids with opportunities to make simple financial decisions (Drever et al., 2015). This way, parents introduce children to practical applications to ensure depth in the learning process.

Parents may also teach their children about money management by providing them with an allowance. When parents provide kids with an allowance, they can teach kids how to spend and save. Parents may let their children buy something they want, but they must also guide them to put part of the allowance in a savings account. This way, parents create the setting to explain to their kids how and why they should make a budget in which kids can buy themselves a pleasurable treat and save money at the same time.

Bucciol and Veronesi (2014) argued that an allowance alone is not enough to teach children saving behaviors because the impact of an allowance depends on the parents' financial socialization practices. Likewise, Kim and Chatterjee (2013) expressed that an allowance alone is not an effective training tool to establish good financial practices. In addition to an allowance, children need guidance through money management activities. People whose parents gave them an allowance and closely monitored their spending during childhood reported better money management skills during adulthood (Kim & Chatterjee, 2013). Therefore, parents should supervise how children spend their money and teach them the need of budgeting and saving combined with the rules of money management (Bucciol & Veronesi, 2014; Kim & Chatterjee, 2013). Parents also need to establish and maintain rules regarding the financial practices of their children to promote positive financial attitudes and behaviors (Kim & Chatterjee, 2013). If the child does not know how to manage his or her money, parents cannot expect him or her to make sound decisions about their allowances.

Practice, practice, practice. Teaching kids how to save and spend their money requires strong socialization efforts from parents. The combination of several methods

generates more significant effects (Bucciol & Veronesi, 2014). Hence, the more strategies used, the better the results users can expect. Also, high levels of financial socialization strongly predict financial behaviors in children because longer hours of education produce more significant effects on behavior than shorter interventions (Chowa & Despard, 2014; Hensley, 2015; Shim, Xiao, Barber & Lyons, 2009). Continuous reinforcement of positive financial behaviors may lead children to have positive attitudes toward their finances and perceive themselves as competent money managers (Drever et al., 2015; Kim & Chatterjee, 2013). In other words, persistent teaching activities and the combination of teaching resources may play a definitive role in the development of positive financial behaviors among children.

The combination of teaching methods provides parents with a strong training structure to teach their kids positive financial behaviors. However, parents must be aware that financial socialization efforts require a longitudinal approach. Financial socialization has the most significant impact when taught during childhood (Drever et al., 2015; Grohmann & Menkhoff, 2015; Hunter-Jones, 2014). However, these teachings weaken with time without proper follow up during adolescence. Fernandes et al. (2014) found that financial education, like any other education, decays over time. Bucciol and Veronesi (2014) concurred that teaching children to save during the early stages of their lives without following up during adolescence produces a weak effect on their propensity to save during adulthood. Thus, financial education must be seen as a lifelong learning process that never ends.

As children grow, external socialization agents come into play, including peers

and romantic partners. Serido et al. (2015) argued that when parents set a strong

foundation, other socialization agents do not surpass the influence of parents. These other

agents instead become integrated to reconcile a set of attitudes and behaviors during

adulthood. Consequently, financial socialization does not end when people reach

adulthood but continues as people incorporate new members into their social unit.

Finally, the process of financial socialization evolves as kids become adults and parents,

changing their role from apprentice to financial socialization agent. In summary, teaching

kids about good financial behaviors requires that parents fully commit and immerse

themselves in the task and that they use all the tools they have to assure a positive and

significant outcome. In the case that parents recognize having limited financial

knowledge, they should look for the resources that will help them develop financial

expertise before teaching their kids.

Financial Education

Other socialization agents did not receive as much attention as parents. For

example, formal financial education represents one of the least assessed agents in the

literature, even though formal education increases both a person's knowledge and the

ability to use that knowledge (Dündar, 2017; Huston, 2015). Moschis and Churchill

(1978) suggested that the influence of school as a socialization agent did not compare to

the impact of parents or peers due to its limited impact. However, Hensley (2015)

encouraged further research to identify the best pedagogical practices to improve the

success of financial education. Further assessment would provide additional data to

confirm the impact of formal education on financial and consumer behaviors. Moreover,

additional data would provide a clear understanding of the most appropriate setting (the where, when, and how) to implement specific pedagogical practices according to the population's needs.

Societies use formal education as a vehicle to provide people with knowledge, skills, and values. Likewise, financial education provides people with basic concepts, skills, knowledge, behaviors, and values to enhance human capital specific to personal finance, allowing people to make informed decisions (Dündar, 2017; Huston, 2015). Since schools provide an organized learning environment, Dündar argued that schools play a crucial role in the acquisition of conscious consumer behaviors. However, the number of schools offering finance or economic courses remains limited even though the literature highlights an increasing need for people to know about and comprehend financial products.

Fewer than half of the states in the U.S. require schools to offer personal finance courses. Since 2014, only 17 states require high school students to attend courses in personal finance (Council for Economic Education, 2016). Moreover, according to the Council for Economic Education, 20 states require high school students to take a course in economics, and only five states require a stand-alone semester course in personal finance. These figures appear shy, considering that the public schools from these 20 states only represent 56% of the 98,373 schools operated by the U.S. Department of Education during the school year 2014–15 (National Center for Education Statistics, 2017). Also, these figures highlight the fact that only 40% of the states participate in the efforts to increase and improve the financial literacy of the people. Moreover, the slow

increase of participating states in financial education programs may also result from the contradictory evidence regarding the impact of formal education on financial wellbeing.

The influence of school on positive financial and consumer behaviors has been open to debate by researchers. Both Drever et al. (2015) and Cole et al. (2016) found mixed evidence regarding the efficacy of school-based financial education and the causal effects that financial education has on financial behaviors. While some studies showed positive effects of financial education at schools on students' knowledge, other studies showed no relation between the number of courses attended and conscious consumer behaviors (Dündar, 2017). These studies together indicated that financial education programs might produce some results regarding financial knowledge, although the impact may be limited. Research studies also provided evidence that finance courses have plenty of space for improvement.

Improved financial literacy. One side of the finance research community linked financial education courses to improved financial behaviors. Grohmann et al. (2015) stated that the influence of formal education positively affects the financial literacy and behavior of adults. Similarly, Shim, Serido, Tang, and Card (2015) argued that both formal and informal financial education played a significant role in the financial literacy of individuals. Researchers in favor stated that financial education also promoted the acquisition of specific skills. Students participating in financial courses showed an increased understanding of diversification as well as an increased number of assets (Grohmann & Menkhoff, 2015; Grohmann et al., 2015). Students also exhibited less impulsive buying behaviors since economy courses had a significant positive and direct

effect on their conscious consumerism levels (Dündar, 2017). Although these studies showed a positive influence of financial education, the authors suggested a somewhat limited influence of school on financial literacy. Moreover, researchers highlighted the importance of involving parents in financial education efforts to increase its impact.

No links to positive behaviors. Other researchers claimed that financial education does not play a significant role in the financial literacy of people. Initially, Moschis and Churchill (1978) stated that learning about consumerism in courses at schools did not help students develop responsible consumer behaviors. They found that school produced the weakest correlation with the participants' ability to manage consumer finances when compared to the other independent variables. Moreover, they found no relation between school and any of the dependent consumer skill measures examined in their study.

Later researchers reached similar conclusions regarding the role of formal education in the acquisition of financial knowledge and skills. Fernandes et al. (2014) found a weak effect of formal education on financial knowledge. Similarly, researchers have little evidence to prove the relation between financial education and positive behaviors such as investment, credit management, long-term asset accumulation, debt repayment, and financial health (Cole et al., 2016; Drever et al., 2015; Hastings, Madrian, & Skimmyhorn, 2013; Huston, 2015). In sum, these studies ascertained that financial education has no significant relevance to the development of financial attitudes, behaviors, and values.

In the best cases, financial education had limited influence on the financial

behaviors of people. For example, Serido et al. (2015) found that financial education and counseling efforts aimed at improving the financial literacy of college students had limited success. These researchers argued that the limited influence of financial education might result from a broad number of external variables, such as teacher readiness or relevance of the topics to the students. However, they also stated the need to perform further research to identify the causes of such a limited impact.

In the worst cases, individuals with no financial education outperformed those who attended at least one financial course. Mandell (2008) found that students who participated in a one-semester money management course received lower scores in the Jump$tart survey than other students who had not taken any financial or economy class. These negative outcomes surprised the research community because educational institutions have the responsibility to provide the youth with the skills, attitude, and knowledge base necessary for economic self-sufficiency (Hastings et al., 2013; Moschis & Churchill, 1978). In an effort to explain these results, some researchers tried to justify the discrepancies between financial education and performance. Researchers like Fernandes et al., (2014) and Hastings et al. (2013) suggested that the topics included in financial courses may be of no interest to attending students because of their age or current needs. This disparity signals the need to examine financial education curriculums to meet the needs of the student population and increase their engagement in financial courses.

The literature also suggested that the limited influence of financial education on the knowledge and skills of people results from the lack of well-prepared teachers.

Hensley (2015) argued that an effective financial education program needs well-trained

educators who have confidence, competence, and knowledge about personal finance. The

key to achieving such confidence is providing teachers with opportunities to practice and

develop financial skills, like simple budgeting exercises, role-playing, or computer

simulations (Drever et al., 2015). Educators have the responsibility to create an effective

learning environment. Hence, educating teachers in financial topics may increase their

effectiveness to prevent failure among students and provide them with the resources to

combine theory with practice.

Combining education with practice. Like in previous sections, the researchers

included in the literature review stressed the need to include practical experiences in

educational efforts. Drever et al. (2015) found that financial experiences had a stronger

impact on financial literacy than financial education. They also argued that the

experiential learning resulting from active engagement with financial services and

products provides benefits to financial wellbeing. This experiential approach may provide

students with opportunities to employ the skills learned in the classroom in practical

exercises or real-life situations. Thus, the impact of the practical experience may present

students with a deeper and more comprehensive understanding of financial products and

services, but also with learning that will last longer.

One of the strategies identified in the literature conveyed knowledge via the just-

in-time approach. According to Fernandes et al., (2014), the just-in-time approach ties

financial education interventions to a particular decision, enhancing perceived relevance

and minimizing forgetting. This way, students learn financial concepts relevant to their

own experiences and needs, hence increasing their learning curve. Fernandes et al. argued that trying to remember and apply a concept or tool learned years earlier from formal education may be difficult. Having the opportunity to apply new knowledge to real-life situations would guarantee that learners will gain the capacity to apply these skills in the future.

Supplementary vehicles to boost financial education. Even though schools represent a fertile setting to promote financial literacy and wellbeing in the U.S., the efforts to install a comprehensive financial education program resulted unsuccessful (Fernandes et al., 2014). In the case of Puerto Rico, the Department of Education does not include financial education as part of the curriculum. However, schools represent an attractive site because they reach a broad captive audience (Cole et al., 2016). Having a student population confined to the classroom may create the opportunity to provide financial education to those who need it the most and otherwise would not have access to it.

In addition, schools can combine resources and tools to increase the impact of the financial education program. For example, the literature suggests that an increase in mathematical knowledge and better numeracy has a positive impact on the financial performance of people (Grohmann et al., 2015). According to Cole et al. (2016), additional mathematics training leads to greater financial market participation, investment income, an increase in asset accumulation, and better credit management. Also, additional math courses increase the tendency to accumulate assets and the amount of real estate equity, reduce credit card and loan delinquency, and diminish the probability

of experiencing foreclosure. Likewise, Kim and Chatterjee (2013) positively related mathematical problem solving with financial asset ownership and stock ownership. While the researchers have suggested that financial education programs have a limited impact on the financial literacy of people, schools can still provide some sort of financial education through math courses. Lusardi et al. (2010) emphasized the importance of improving the effectiveness of financial literacy programs currently offered in schools. Therefore, future researchers may examine the strategies and tools used in teaching math courses and incorporate them into financial education programs. This way, they can assess how math strategies affect the influence of financial education courses on the financial health of the population.

Involving parents. Researchers recommended the involvement of parents as a response to the limited impact that financial education has on the financial literacy of students. Grohmann et al. (2015) found that both family and school positively affect financial literacy levels, suggesting family factors and schooling work through parallel channels. According to Lusardi et al. (2010), parents who lack sufficient financial knowledge should engage in a financial education program. This way, they could take a more active role in guiding their children's financial behaviors and provide their children with sound financial advice.

As discussed in previous sections, parents play a pivotal role in the financial education of their children. Hence, parents can, and should, actively participate in the education that their children receive at school. Grohmann and Menkhoff (2015) stated that family and school complement each other in their impact on financial behaviors.

Likewise, Grohmann et al. (2015) found that the combination of financial teaching by parents, economics classes in school, and better education quality significantly contributes to higher numeracy scores. Incorporating synergistic approaches would ensure that children get depth in their financial knowledge while developing the skills and attitudes to make good use of the information when they become adults. This impact may also be reflected in the strategies these children will use when they become adults to transmit financial knowledge and skills effectively to their children.

Subjective knowledge. The literature suggested that researchers and scholar-practitioners consider the relevance of subjective knowledge to the financial performance of individuals beyond the methods employed to enhance the financial literacy of people. Shim et al. (2009) positively related financial education to the perception of subjective knowledge, which subsequently predicted financial attitudes and behaviors. Likewise, Hadar, Sood, and Fox (2013) argued that the level of subjective knowledge that a person possesses may be a critical driver of financial behavior. In other words, the fact that an individual feels knowledgeable and confident in his or her skills has a strong association with their willingness to make financial decisions regardless of their risk levels.

Researchers proposed that in addition to the acquisition of financial expertise, having the confidence to use financial knowledge and skills could make a difference in a person's performance. As a result, Fernandes et al. (2014) suggested the inclusion of soft skills like consumer confidence, a propensity to plan, and willingness to take risks in financial education courses. However, teachers should be careful not to promote overconfidence among students. For example, Skimmyhorn, Davies, Mun, and Mitchell

(2016) found that a rule of thumb based course appeared to reduce the willingness of students to seek financial advice. Beginners often make decisions without being adequately prepared. Moreover, according to Sanchez and Dunning (2017), beginner students may fall into the "beginner's bubble" of overconfidence, making exuberant decisions that lead to mistakes. So, as students learn new skills, educators should help them understand their level of expertise to prevent fatal errors.

Peers

When children grow, their interests change, as so do their socialization experiences. During the earlier childhood stages, parents play a relevant role in the financial and consumer socialization of their children. However, when children reach adolescence, external factors come into play. One of such external influences comes from friends or peers.

Through interactions with other kids, children start building relationships with peers with whom they share their knowledge, likes, and dislikes. As a result of that exchange, peers significantly influence the formation of interpersonal relationships and consumer behaviors (Chu & Sung, 2015; Niu, 2013). According to Niu (2013), the term "peers" refers to a group of individuals who know each other, share mutual knowledge and life experiences, and serve as a reference to one another. In the case of children, peers include their classmates and friends. After reaching adulthood, peers include friends and coworkers. Peers stay at the same level of the social ladder, in contrast to parents who are positioned in a higher position (Yang, Kim, Laroche, & Lee, 2014). The impact of peers on an individual's choices becomes stronger during adolescence when the

need for social acceptance increases, although it may start as early as preschool.

Regardless of age, peers are relevant actors in financial socialization (Te'eni-Harari,

2016). Moreover, the influence of peers, just like parents, may last a lifetime.

Influence of consumerist behaviors. Most of the studies reviewed assessed the

influence of peers on consumerist behaviors. According to Moschis and Churchill (1978)

and Muralidharan and Men (2015), peers had a significant positive impact on the

shopping behaviors of study participants. Peers also influence youngsters' financial

conduct and money management behaviors (Sundarasen, Rahman, Rajangam, &

Sellappan, 2014). In contrast, while only a few studies examined the influence of peers

on saving practices, these studies produced unfavorable results. In most cases, the

researchers found a strong positive relation between peers and consumerist behaviors.

Instead, researchers frequently correlated saving behaviors to parental influence rather

than peers.

Friends or peers also play a significant role in providing youngsters with

information and motivations to make financial decisions. Peer communication represents

an important socialization agent for young consumers, having the greatest impact on

purchasing behaviors (Aldea & Brandabur, 2013; Moschis & Churchill, 1978;

Muralidharan & Men, 2015). Other researchers identified the role of peers as a significant

predictor of consumer knowledge and awareness, since peer groups exert much influence

(Ahluwalia & Sanan, 2016; Moschis & Moore, 1978; Ward, 1974). However, on many

occasions, peer communication focused on consumerist behaviors that involve spending

money rather than saving it. Hence, kids and adolescents may adopt or imitate poor

financial behaviors in an effort to be socially accepted.

In other words, adolescents and their peers focus their communication activities towards purchasing and consuming behaviors. In a recent study, Muralidharan and Men (2015) confirmed that peers influence consumption oriented decision making, attitudes toward product placement, and purchase intentions. Adolescents acquire cognitive skills and learn expressive aspects of consumption from their peers, but also learn social motivations for consumption and materialism from their friends (Moschis & Churchill, 1978). These researchers suggested that friends and peers teach adolescents about the social value applied to goods and services and how these define social acceptance. By complying with the social values learned from friends and peers, children may develop materialistic values that may affect their financial wellbeing in the future.

In practice, children and adolescents look for information either from their parents or peers. According to Lusardi and Mitchell (2011), most people continue to rely on the recommendations of family and friends to make financial decisions. Likewise, Thaichon (2017) found that many children ask their friends when planning to buy something. As mentioned before, the practice of asking friends responds, in part, to the need for social acceptance. As a result, adolescents take into account the recommendations of peers more frequently than the advice from parents.

Parents' reduced importance. As the influence of peers increases due to social needs, the role of parents becomes relegated. Ward (1974) argued that peers' influence on the socialization process grows with age, while the parental impact sees a reduction. Similarly, Aldea and Brandabur (2013) found that the influence of peers increases as the

child reaches adolescence while the parents' manifested influence decreases. Both studies confirmed the common knowledge that adolescents start alienating themselves from their parents and get closer to peers as part of their journey.

The alienation occurs in adolescence, as the need for social acceptance increases. According to Thaichon (2017), children between the ages of eight to 11 years old experience a robust parental influence, although they also listen to peers due to their need for social acceptance. In contrast, peers become more influential when children reach ages 12 to 15 when the role of parents becomes less significant. At this stage, individuals seek to build themselves and their opinions, preferences, and attitudes by seeking guidance from their peers instead of their parents (Serido et al., 2015). But, as a result of peers' inexperience, individuals end up making poor decisions.

As individuals reach adulthood, the need for social approval still exists, so they will still rely on peers' opinions to make financial and consumer decisions. For instance, Thaichon and Quach (2016) found that consumers rely on comments and feedback from friends before forming an opinion about a product or service. Also, Cheng, Lin, and Liu (2011) discovered that women tend to rely on references and recommendations from relatives or friends when searching for a mortgage. As a result, women end up paying higher mortgage rates than men, who usually search for the lowest interest rates available in the market. Likewise, Delfino, Marengo, and Ploner (2016) noticed that adults seeking to make their first investment positively reacted to social information, aligning their investment behavior to that of their peers. These researchers demonstrated that people rely on peers to make financial and consumer decisions past adolescence and into

adulthood. However, growing up provides no guarantee that people become financially savvy when reaching adulthood. Thus, relying only on the suggestions from friends, peers, or relatives to make financial decisions might produce a disadvantageous outcome.

In the previous cases, these individuals considered the opinions and recommendations of their peers and emulated their consumer and financial behaviors, subsiding into imitative behaviors. According to Delfino et al. (2016), people follow imitative behaviors mostly when a reference group displayed such behaviors instead of a single individual. When people need to make a complicated decision, other people's choices become a signal about the value one should attach to the prospect. As Delfino et al. noticed, participants showed strong imitative adjustments when their investment decisions largely deviated from the investments made by their peers.

Media

The fourth and final socialization agent examined in this literature review is the media. Media emerged as an important socialization factor (Ahluwalia & Sanan, 2016). Researchers seemed to agree that media, in its different forms, plays an essential role in the financial socialization, consumer learning, and consumer activism of people (Ahluwalia & Sanan, 2016; Hira et al., 2013; Moschis & Churchill, 1978; Sundarasen et al., 2014). Thus, the research community examined different settings where people used media as a socialization agent to gather information to make financial decisions.

Researchers often related media to consumerism and presented substantial evidence that mass media has a strong influence on consumerist behaviors. Moschis and Churchill (1978) found a significant relationship between media and consumerism.

Moreover, researchers found that media as a socialization agent affects many purchase decisions through programming and advertising, considering it a predictor of consumer affairs knowledge among adolescents (Atkinson, Nelson & Rademacher, 2015; Ahluwalia & Sanan, 2016; Hira et al., 2013; Moschis & Churchill, 1978). However, the literature also provided evidence that media can be used to encourage positive financial behaviors like investments. Moreover, media can be used to promote positive financial behaviors like saving and building a diversified investment portfolio.

According to the literature, people used the information they gathered from the media to make investment decisions. Researchers found that media had a strong relationship with investor involvement, positively influencing investment patterns (Hira et al., 2013). Hira et al. (2013) also discovered that media performed as a strong predictor of saving behaviors. Moreover, in some cases, the media had a significant impact on household net worth and investment regularity. However, people must evaluate the information they gather from the media before making any financial decisions because the information may not come from a reliable source.

Newspapers and magazines. Since the invention of the press, people have used newspapers and magazines as a dependable source of information. Also, people used newspapers and magazines for many years to gather information regarding financial topics. Moschis and Churchill (1978) argued that newspaper readership represented the strongest predictor of consumer affairs knowledge and consumerism. According to Hira et al. (2013), lower income, less educated investors frequently used newspapers to inform their investment decisions, using marketing literature to obtain financial market

information. However, as technology continued to evolve, people started integrating other mechanisms to gather financial and consumer information, such as the radio and television.

Television. After the introduction of the television, marketers saw an opportunity to send information more efficiently to a broader audience. Television became a significant source of financial and consumer information to the public because TV commercials increase product and brand knowledge (Hira et al., 2013; Md Ridhwanul & Syed, 2015). According to the literature, advertising companies used the television for marketing purposes since the 1950s in an effort to influence public opinion. Like with other types of media, television has a strong relationship with social motivations for consumption (Moschis & Churchill, 1978). People use this communication vehicle as a guide and may live their lives according to the images they see on TV. Moreover, advertisements provide product and brand related knowledge and ideas to viewers (Md Ridhwanul & Syed, 2015). However, the marketing of brands and products evolved from 30-second ads to reality TV programs, where media stars use their fame to sell products. Viewers, in many cases teenagers, follow reality TV stars, find inspiration from celebrities, and develop attitudes towards product placement, material values, and desires for product consumption (Md Ridhwanul & Syed, 2015). Following the trends established by reality stars may lead to the adoption of unhealthy financial behaviors.

Internet and social media. The Internet provides users with a global communications system that carries an immense amount of information, resources, and services to the people. Recently, the Internet emerged as a relevant socialization agent,

representing an alternate source of information beyond books, newspapers, and magazines (Ahluwalia & Sanan, 2016; Pereira et al., 2016). The Internet provides answers faster than any other communication vehicle. As a result, traditional media such as television, newspapers, and magazines have lost relevance among users (Mishra et al., 2018). In many cases, traditional media evolved to take advantage of the extensive reach that the Internet, as a communication platform, provides to its users.

In recent years, internet and social media users moved from using the Internet as an information source to develop active settings where people can share and exchange knowledge. Muralidharan and Men (2015) found that consumers who use social media to gather information about products showed an increased tendency to communicate with their peers on these communication platforms. Thus, the Internet became a new communication channel in which peers and friends influence the ideas and opinions of people without the need to interact face to face. Since virtual friends can be considered sources of influence, individuals who shared and exchanged information, opinions, and advice with others considerably affected the consumer socialization processes (Chu & Sung, 2015; Muralidharan & Men, 2015; Thaichon, 2017). However, peer communication through social media has received little attention from researchers (Muralidharan & Men, 2015). More research should be performed to assess the consumer socialization processes involved in Internet settings and the extent of its impact on financial and consumer decisions.

Social media presents an example as one of the most active communication vehicles on the Internet. Researchers suggest that social media can be used as a tool to

promote financial literacy and money management. Ahluwalia and Sanan (2016) argued that the frequency and the uses that individuals make of the Internet have an impact on their consumer knowledge. Through their findings, they generated evidence that the frequency with which social media is used also influences the socialization experiences of individuals. Likewise, Sundarasen et al. (2014) stated that, since people use social media widely for marketing purposes, different institutions may take advantage of the virtual platform to advance financial literacy efforts among diverse communities. Using social media may be of benefit to financial institutions because the Internet represents a bridge that provides access to an extensive population. Moreover, financial institutions could develop literacy campaigns to reach different groups within communities based on age, economic needs, or any other criteria they see fit.

Evidence of the Problem

Lack of financial literacy is not a phenomenon that happens exclusively in the U.S., but in many other countries as well, both developed and developing. Countries where financial crises showed a strong influence in their economies had the lowest financial literacy levels (Smyczek & Matysiewicz, 2015). As a response, people are becoming more attentive to the need of having financial knowledge, primarily because they have the responsibility to manage complex financial products and make difficult financial decisions (Bassa Scheresberg, 2013). However, as people lack the skills to make financial decisions, they often struggle to understand the financial products available in the market and how these products impact their financial wellbeing.

Researchers frequently stressed the need for the development of effective

financial education programs. They also promoted collaborative initiatives between educators, policymakers, and financial industry professionals to improve financial programs and reinforce the financial literacy of young adults (Williams & Oumlil, 2015). However, all these parties focused their attention on the levels of financial knowledge among individuals rather than the processes that might help them improve financial literacy. Gudmunson and Danes (2011) argued that fellow researchers discounted the relevance of socialization processes to the development of skills and knowledge. Hence, scholars needed to understand the factors that define and influence learning processes before attempting to modify them.

Filling the Research Gap

Financial knowledge among Puerto Ricans is a topic not well documented in research, although researchers reported having Puerto Ricans as part of their Hispanic samples. Limited research has been conducted to examine the financial literacy of Puerto Ricans as a group. While limited studies addressed the financial literacy of Puerto Ricans exclusively, none of these studies examined the socialization processes that lead to the acquisition of financial knowledge and skills among them. Furthermore, the current literature did not provide data regarding the socialization agents Puerto Ricans use to transmit financial knowledge and develop adequate financial behaviors. As a result, there was a limited understanding of the financial literacy of Puerto Ricans and the social learning processes they employ when making financial decisions.

Many studies addressing the financial knowledge and which included Puerto Ricans in the sample, recruited participants in the mainland. It is important to mention

that, although all Puerto Ricans share a common background, daily events and life experiences separate the social and cultural practices of island and mainland Puerto Ricans. Therefore, one cannot deduce that the financial knowledge of Puerto Ricans living in the mainland reflects the consumer skills of those on the island. While researchers started to assess the financial knowledge of island Puerto Ricans, socialization processes must also be studied to understand the reasons behind the financial literacy of Puerto Ricans.

Studies conducted in Puerto Rico focused on the financial literacy of island Puerto Ricans. First, Martinez (2013) examined the financial literacy of college students. One year later, Schindler (2014) searched for common factors affecting the ability and capacity of Puerto Rican teachers to teach personal finance. These authors focused their attention on differences in financial knowledge, behavior, and wellbeing. However, they did not address the socialization processes that explain differences in financial skills.

Researchers also suggested that Puerto Ricans, like many other minorities in the United States, have low levels of financial literacy. Martinez (2013) found that Puerto Rican college students lack knowledge about financial topics, regardless of their major. The evidence suggested that school did not play a significant role in providing students and adults with the necessary knowledge to manage their finances effectively. Similarly, Castro-Gonzalez (2014) observed that Puerto Rican adults lack knowledge regarding financial and retirement planning. Castro-Gonzalez assessed the financial and retirement planning skills of working adults and collected data regarding the information sources that influenced the financial decisions of the study participants. In her questionnaire,

Castro-Gonzalez included questions about newspaper articles and advertisements, radio and television programs, family, friends, financial institution representatives, and the Internet. However, Castro-Gonzalez did not include school or other types of formal financial education among the socialization agents examined in her study, as proposed by Ward (1974) and Moschis and Churchill (1978).

Only one researcher examined the influence of socialization agents on the development of attitudes, skills, and knowledge relevant to consumption, as suggested by Ward in 1974 and Moschis and Churchill (1978). Fernandez (2002) performed a study in which he examined the relationship between several factors and the purchasing behaviors of Puerto Rican teenagers. He found a significant correlation between the influences of family members, peers, and friends and the subjects' purchasing decisions. Although not included as a variable of the study, Fernandez did not find significant evidence that formal education influences consumer behaviors after comparing students from public and private institutions. These last findings provided significant data for this proposed study because formal education did not seem to have any significant relation to financial literacy either (Moschis & Churchill, 1978). However, Fernandez focused his study only on purchasing behaviors. Therefore, the relationship between the socialization agents and other financial behaviors requires testing in a Puerto Rican population.

This study was an extension of Fernandez (2002), Castro-Gonzalez (2014), and Martinez's (2013) studies. In Fernandez' study, he examined how parents, friends, celebrities, and advertising influenced the purchasing decisions of teenagers, ages 13 through 19. Also, as mentioned earlier, Castro-Gonzalez (2014) did not include any form

of formal education among the information sources examined in her study. Thus, I examined the influence of the four socialization agents examined by Moschis and Churchill (1978), which included parents, school, peers, and media. Moreover, in this study, I included the Internet among the sources of information in media used by college students to inform their financial decisions. Finally, in the study performed by Martinez (2013), he examined the financial literacy of college students from a public university located in San Juan, Puerto Rico. In the sample of this study, I included participants from various public and private universities in an effort to build a representative sample of the Puerto Rican population.

Summary of the Literature Review

The focus of this study was on examining the socialization processes that define the financial literacy of Puerto Ricans. The reviewed literature addressed the low levels of financial literacy among Puerto Ricans and the theoretical models of financial socialization. The literature review examined the socialization agents that play a significant role in the financial literacy of people. Both models, consumer socialization and family financial socialization, demonstrated that demographics play a significant role in how people interpret the gathered information and display certain consumer behavior. I applied both models as the basis of this study to explain how people use different sources of information, whether formal or informal, to inform their financial decisions.

Researchers highlighted the importance that socialization agents have in the financial socialization experiences of people. Parents appeared as one of the most significant sources of socialization regarding financial topics as they play an essential

role during the early stages of learning (Lusardi et al., 2010; Thaichon, 2017). As children grow into teenagers, they start socializing with other children, who also became socialization agents. In this phase, children relegated parents to a lower place in the social levels. Instead, they relied more often on the opinions of peers, getting acceptance from friends and peers through conformity to the group's behavior (Thaichon, 2017).

After technological advances allowed the development of social networks, individuals started using these platforms to collect consumer and financial information, either from websites or through virtual communication with friends. Moreover, individuals used the opinions of people they did not know, including celebrities, through blogs and reviews available on web pages about products, services, or organizations, to inform their own decisions. On the other hand, the literature showed a different reality for school as a socialization agent. The reviewed researchers agreed that the impact of school as a socialization agent did not come close to the relevance of parental influence (Moschis & Churchill, 1978). However, researchers found that the combination of parents and school could produce important and significant outcomes in the financial literacy of children.

The gap identified in this study related to identifying the information sources that Puerto Ricans use to inform their financial decisions. In this study, I extended the current knowledge in the field of financial literacy to understand the social learning processes that Puerto Ricans experience and how these experiences influence their financial literacy. Financial educators and professionals agreed that financially literate people often report having less or smaller debts and more wealth accumulation through savings and

investments. Improving the financial security of individuals would benefit themselves and those around them.

In the following chapter, Methodology, I introduce the target population, the rationale for choosing that population, the procedure for determining the population size, and sampling procedures. I also introduce the instrument that I will use to collect the data, the data analysis plan, and describe the threats to validity. The methodology described in Chapter 3 was designed to collect quantitative data to address the research questions and hypotheses of the study.

Chapter 3: Research Method

Introduction

Martinez (2013) and Castro-Gonzalez (2014) suggested that many Puerto Ricans have low levels of financial literacy regarding asset ownership, credit management, and risk diversification. The general problem for the study was that Puerto Ricans have little knowledge about basic money management practices (Martinez, 2013). The specific problem to be addressed was the lack of information regarding the sources that Puerto Rican college students use to develop their financial knowledge and to inform their financial decisions. The purpose of the proposed quantitative, nonexperimental study was to examine the information sources that influence the financial knowledge and decisions of Puerto Rican college students. To understand how or why Puerto Ricans make the financial decisions they make, I proposed a study in which I assessed the sources of information or socialization agents they use during their decision-making process. By identifying the socialization agents, I generated data about the socialization practices behind the acquisition of financial knowledge.

The following sections present a detailed description of the research design and rationale. I also discussed the target population, the sampling process, the data collection process, and data analysis plan. I finally discussed the threats to both the internal and external validity of the study and the ethical concerns related to the study.

Research Design and Rationale

I used a cross-sectional design to perform the study. The cross-sectional design facilitated the identification and understanding of any existing correlation between

different variables (Shim et al., 2009). The independent variables of the study were parents, media (including the Internet), peers, and school. Financial literacy was the dependent variable of the study. These variables generated new data that may be used to compare the results of the Puerto Rican community with outcomes of other ethnic groups in the U.S.

In addition to understanding existing correlations, the cross-sectional design helped me make observations about phenomena in the study without interfering (Field, 2013; Shim et al., 2009). This study was exploratory; thus, I was not able to confirm any causal relationships between the variables of the study, as explained by Shim et al. (2009). Thus, I used the descriptive nature of the cross-sectional design to answer the following research questions:

Research Question 1: What sources of information do Puerto Rican college students use to obtain financial information?

Research Question 2: How much do the information sources influence the financial decisions that Puerto Rican college students make?

Research Question 3: To what extent does the frequency of exposure to financial topics through family communication, mass media, school, and peers predict the degree to which the participants show financial literacy?

Methodology

Target Population

Researchers paid attention to the financial education and literacy of college students. Specifically, researchers assessed how students' decisions may affect their

financial wellbeing after graduation (Archuleta, Dale, & Spann, 2013; Javine, 2013;

Smith & Barboza, 2014). The amount of student loan debt in the U.S. reached 1 trillion

dollars in 2012, exceeding the amount of credit card debt (Archuleta et al., 2013; Chopra,

2012; Minsky, 2018). As a result, many college graduates faced significant financial

burden after graduation, delaying life events like buying a house. College students

frequently experienced financial anxiety because they struggle to reach their salary

expectations after graduation (Archuleta et al., 2013). This situation was even more

difficult for women who, as a result of the gender gap, received lower wages than their

male counterparts in similar job positions.

Students from low to middle-income families and minorities also faced higher

financial risks than students from high-income groups (Archuleta et al., 2013). Poor or

middle-class students frequently used student loans to pay for tuition or other school-

related costs. As Puerto Rican families reported a median household income of less than

$20,000 both in 2015 and 2016, Puerto Ricans represented a group that frequently faces

high financial risk (Pew Research Center, 2017; U.S. Census Bureau, 2016b). Thus, I

focused on a sample of Puerto Rican college students to assess the socialization agents

they use to inform their financial decisions.

The student population attending higher education institutions in Puerto Rico

reached 216,742 students in the fall of 2017 and was made up of 42% men and 58%

women (Puerto Rico Council on Education, 2018). These students enrolled in the state

university, composed of 13 campuses, and in over 60 private institutions located around

the island. The student population included 187,961 undergraduate students and 28,781

students enrolled in graduate programs, with 173,145 enrolled full time (Puerto Rico

Council on Education, 2018). Many of these students came from low socioeconomic

backgrounds, facing economic hardships during their college years. Moreover, many

students applied for student loans to pay for tuition costs or to cover monthly and daily

expenses like rent and food.

In his study, Martinez (2013) examined the financial literacy of students from the

state university in Puerto Rico, but he did not include participants from private

institutions in his sample. The number of students enrolled in private institutions of

higher education doubles the population of students enrolled in the state university.

Therefore, I decided to include students from private institutions in the sample. I chose to

target undergraduate and graduate Puerto Rican students enrolled in public or private

institutions located in Puerto Rico. With this inclusion, I expected the sample of the study

to represent the most relevant characteristics of the student population, as suggested by

Frankfort-Nachmias and Nachmias (2008).

Sample Size

Sample size plays a relevant role in empirical studies. Field (2013) argued that

larger samples have more power than smaller samples to detect differences between

groups and whether these differences seem significant or not. Field also stated that

researchers use the size of the sample to determine the standard error of the statistical

tests. However, calculating the size of a sample is not a simple task. In determining the

sample size, researchers should consider the expected precision of the results, the data

analysis techniques to be used, and the number of variables included in the study

(Frankfort-Nachmias & Nachmias, 2008).

The desired sample of the study included 191 participants, both male and female, 18 years of age and older, from diverse socioeconomic backgrounds. To determine the size of an appropriate sample size for the study, I used the G*Power software. I calculated the sample size of 191 participants using the G*Power software version 3.1.9.2, by employing an *A priori* power analysis. Table 1 shows the results of the protocol of power analysis run in G*Power software.

Table 1

*Results of the G*Power Protocol of Power Analysis*

F tests - Linear multiple regression: Fixed model, R² deviation from zero		
Analysis:	A priori: Compute required sample size	
Input:	Effect size f^2	0.1
	α err prob	0.05
	Power (1-β err prob)	0.95
	Number of predictors	4
Output:	Noncentrality parameter λ	19.1
	Critical F	2.4202149
	Numerator df	4
	Denominator df	186
	Total sample size	191
	Actual power	0.9505292

Note. Specifically, I used an F tests - Linear multiple regression: Fixed model, R² deviation from zero combined with an effect size f^2 of 0.10, an α (err prob) equal to 0.05, 95% power (1-β err prob), and four predictors.

The G* Power 3.1 Manual (Universität Düsseldorf, 2017) recommended the use of the *Linear Multiple Regression: Fixed model, R² deviation from zero F* test when the study involves the relation of a dependent variable with *m* independent factors. As part of the input variables, I chose a small effect size of 0.10, and an alpha level of 0.05.

Frankfort-Nachmias and Nachmias (2008) stated that researchers customarily set the level of significance at 0.05 or 0.01. To determine the sample size, Trochim (2006) argued that social science researchers typically use an alpha of 0.05. Trochim also recommended researchers to achieve at least 80% statistical power. However, I used a 95% power to increase the odds of confirming the hypotheses of the study.

Sampling Procedures

I proposed to use a target sample for the study. Researchers build samples by using units available (Frankfort-Nachmias & Nachmias, 2008; Jager, Putnick, & Bornstein, 2017). Hence, I built a homogeneous sample using 198 participants that complied with the characteristics described previously and who provided valid responses to the survey. Valid surveys included those completed by participants who answered all the questions of the survey, including demographic questions.

Procedures for Recruitment, Participation, and Data Collection

I contacted four universities to request permission to get in touch via email with their student population and to conduct the study. These institutions included Inter American University of Puerto Rico (INTER Metro), Polytechnic University of Puerto Rico (PUPR), University of the Sacred Heart, and Universidad del Turabo. The selected institutions represented a suitable sample because three of these universities use the services of the same Institutional Review Board (IRB) committee to review research studies performed at these institutions.

Only the Inter American University of Puerto Rico and the Polytechnic University of Puerto Rico accepted the invitation. The other institutions did not send an answer,

regardless of several attempts to communicate with the respective administrative

officials. As a result, I contacted Gaither International PR, a market research firm to help

me build a representative sample and support the data collection activities.

Gaither International PR forwarded an invitation to potential participants

contained in Gaither's Media Brand Profiles (MBP) database. Media Brand Profile is a

consumer-based tracking database that helps marketers and researchers gather data

regarding brand consumption and media exposure (Gaither International, 2012).

Gaither's MBP University category provided information about approximately 1,180

individuals undergoing bachelor's, master's, and doctoral degrees, from 2016 through

March 2018. The invitation provided students with a brief description of the study and its

purpose. It also contained the consent form. After candidates accepted to participate in

the study by consenting in the consent form, a link took them to the survey.

I also reached the Polytechnic University of Puerto Rico (PUPR) and Inter

American University of Puerto Rico (INTER Metro). PUPR reported 3,494

undergraduate and 821 graduate students enrolled in the Fall 2017 (National Center for

Education Statistics, 2018b). Likewise, INTER Metro reported that 6,264 undergraduate

students and 2,343 graduate students enrolled in the Fall of 2017 (National Center for

Education Statistics, 2018a). In this case, I sent students an invitation containing the

invitation link prepared by Gaither International.

Similar to the candidates contained in the Gaither International participant pool,

PUPR and INTER Metro students received a forwarded invitation sent by a university

representative using the institutional internal email system. PUPR and INTER Metro

students received a brief description of the study and its purpose, the consent form, and a link to lead them to the survey. Participants had to answer the questions contained in the College Student Financial Literacy Survey (CSFLS). Respondents' answers were collected into an Excel spreadsheet. After completing the data collection process, I transferred the data contained in the Excel spreadsheet to a Statistical Package for the Social Sciences (SPSS) statistics datasheet and proceeded with the statistical analysis as proposed in the Data Analysis Plan.

Internet Surveys Versus Phone Surveys

Every day, researchers and scholars choose online surveys to collect data for their studies. Internet surveys became popular because of the assumptions that this method is cheaper to conduct, produces faster results, and yields higher response rates than conventional methods (De Rada, 2012; Fricker & Schonlau, 2002). Online surveys also provide access to a broader population quickly (De Rada, 2012). However, this model brings some difficulties, like all the other survey methods.

Online surveys. Although frequently used, researchers have several concerns regarding the scientific validity of online surveys. For example, online participants may provide inaccurate information regarding their characteristics and demographics (Wright, 2005). Also, online surveys often rely on opt-in or nonprobability sampling methodologies (Dillman, Smyth, & Christian, 2014). In other words, if people do not choose the option of receiving emails from a mailing list, the invitation for the survey would end up in their bulk mail. Therefore, potential participants would never see the invitation to the study.

Phone surveys. Phone surveys have both advantages and disadvantages when compared to other models. Just like online surveys, phone surveys have relatively low costs (De Rada, 2012). Regarding costs, Woo, Kim, and Couper (2014) found small cost differences, favoring the implementation of phone surveys over Internet models when performing student interviews to collect unsensitive data. However, they also clarified that costs and the successful implementation of a survey model would vary according to the setting and the nature of the study.

Like with online surveys, the researcher may try to contact participants several times to administer the phone survey. However, researchers may increase the number of participants successfully reached by using phone surveys (De Rada, 2012). In contrast to online surveys, the researcher leaves no opportunity for the invitation to go to the bulk mail because he or she may continue reaching participants until establishing contact. Likewise, Keeter (2015) stated that phone surveys provide access to broader populations because some Americans still lack reliable access to Internet connections, including financially struggling individuals and those with low levels of education. The increasing rates of mobile phone ownership also provide faster methods to contact sample units, produce higher response rates, and a higher representation of the population (Vicente, 2015; Woo et al., 2014). As people move from landlines to cell phones, the likelihood of establishing contact with a person increases.

Researchers also have increased control over the data collection process through phone surveys. Phone calls facilitate the collection of data over short periods of time, reducing the chance of external events affecting the outcomes of the study (Dillman et al.,

2014). Moreover, many of the design guidelines employed in online studies apply to the design of phone surveys (Dillman et al., 2014). Since the interviewer leads the communication with participants, he or she will use the survey as a tool to organize and conduct the interview. The survey may also help the interviewer prepare beforehand with any questions or comments participants make.

However, participants answering phone surveys may provide biased answers. Woo et al. (2014) found evidence that people give socially desirable answers more frequently over the phone. Likewise, Fricker and Schonlau (2002) found that interviewer-administered surveys, like face to face interviews or phone surveys, produce socially desirable answers more frequently than online surveys. In both studies, the researchers agree that this issue may impact the outcomes of studies that ask sensitive questions. In contrast, online surveys provide a sense of anonymity that allows participants to answer with more honesty, regardless of the topic.

Finally, phone surveys produce more reliable data than online studies. Frickler and Schonlau (2014) argued that traditional surveys produce fewer sampling errors and nonresponse biases than Internet-based studies. Thus, researchers would need a larger sample to obtain the same levels of precision as those obtained through phone surveys (Woo et al., 2014). Dealing with a larger sample would lead to increased expenses and an extended time frame to complete the data collection process. In some cases, the researcher has the money and the time to invest in an extension, while other researchers may have limited resources to complete their studies. In the end, the researcher may choose the method that better suits the purpose, nature, and available resources to

complete the study without compromising the reliability and validity of the results.

Instrumentation and Operationalization of Constructs

Jorgensen (2007) developed the College Student Financial Literacy Survey (CSFLS) by combining items from different sources. He used some items from the Survey of Personal Financial Literacy developed by Chen and Volpe (1998) to develop the questions to assess financial literacy. Jorgensen also used questions from the Personal Financial Survey created by the Jump$tart Coalition in 2004, the College Student Consumer Knowledge Survey developed by the Consumer Federation of America in 1993, and the Financial Management Survey designed by Justin Micomonaco in 2003 (Jorgensen, 2007). As a result, the College Student Financial Literacy Survey (CSFLS) includes questions regarding financial literacy levels and financial socialization experiences and incorporates questions that assess the sources or influences of financial knowledge among participants (Jorgensen, 2007; Jorgensen and Savla, 2010). CSFLS also contains questions regarding demographic factors, including gender, age, household income, and parents' education. I obtained written approval via email from Jorgensen to use his instrument in this study, as shown in Appendix D.

Jorgensen validated the College Student Financial Literacy Survey (CSFLS) using a panel composed of four faculty members with expertise in financial management as well as survey design (Jorgensen, 2007). The panel of experts independently assessed the items contained in the survey by providing feedback about the capabilities of the survey to provide valuable data and the construct of the survey questions (Jorgensen, 2007). After revising the survey based on the recommendations received from the panel of

experts, Jorgensen also ran a test survey to verify the clarity and readability of the instrument.

Jorgensen (2007) also tested the reliability of the College Student Financial Literacy Survey (CSFLS). To that purpose, Jorgensen used Cronbach's Alpha to measure the reliability and consistency of the scales from the CSFLS survey (Jorgensen, 2007). He determined a reliability rate of 0.77 for the financial knowledge section of the survey (questions 20 through 44) and a reliability of 0.78 for the financial attitudes section (questions 1, 5, and 6). He also calculated a reliability of 0.75 for the financial behavior section (questions 7, 11, and 12) and 0.70 reliability for the questions about perceived parental influence (Jorgensen, 2007; Jorgensen & Savla, 2010).

The College Student Financial Literacy Survey was developed and validated over 10 years ago, and researchers have used and tested this instrument successfully in different settings and using different populations. Moreover, Jorgensen tested the validity and reliability of the survey in 2007 and later, many other researchers verified and confirmed the validity of the instrument over the years. Studies performed domestically included both undergraduate and graduate college students from institutions located in Tennessee, Nevada, Oklahoma, South Dakota, Idaho, Virginia, New England, and the Northeastern region of the U.S. (Adeleke, 2013; Bazile, 2014; Fairfield Rydzik, 2016; Gillen & Loeffler, 2012; Hancock et al., 2013; Quirk, 2015). Internationally, Akben-Selcuk and Altiok-Yilmaz (2014) used the survey to collect data from undergraduate students enrolled in a Turkish university located in Istanbul. Both domestic and international researchers successfully collected data from their study populations and

generated evidence of the instrument's effectiveness to assess the financial literacy of

participants. In most cases, these researchers used the validity procedures and reliability

values reported by Jorgensen in 2007 (Adeleke, 2013; Fairfield Rydzik, 2016; Hancock et

al., 2013; Jorgensen & Savla, 2010). Moreover, these researchers also determined the

validity of their studies by calculating the Cronbach's alpha of the collected data, as I did

after completing the data collection process.

Considering that I assessed a population not examined before using the College

Student Financial Literacy Survey, I validated the questionnaire following a similar

approach as all the researchers previously mentioned did and presented the results of the

validation in Chapter 4. Hence, I calculated the Cronbach's Alpha to measure the internal

consistency of the CSFLS survey as proposed by Jorgensen (2007). The Statistical

Package for the Social Sciences (SPSS) provided a procedure to measure the reliability

analysis of the data collection instrument using Cronbach's alpha. After completing the

data collection and screening process, I performed the reliability analysis based on the

participants' scores, seeking a score of over 0.70 to achieve high internal consistency.

Data Analysis Plan

I divided the study into two phases: data collection and data analysis. For the data

collection stage, I outsourced the services of Gaither International PR to distribute

invitations for the survey using their resources. After the completion of the data

collection phase, I exported the data to the Statistical Package for the Social Sciences

(SPSS) software. Then, I proceeded to clean and screen the data. I analyzed the collected

data by using different statistical tests that helped me answer the research questions and

confirm the proposed hypotheses.

Data Collection From Three Settings

As part of the efforts to build a representative sample, I contacted officials at four universities located in Puerto Rico to obtain access to perform the data collection activities on their campuses. The universities contacted include Inter American University of Puerto Rico, Metropolitan Campus, University of the Sacred Heart, Polytechnic University of Puerto Rico, and Turabo University. Only the Polytechnic University of Puerto Rico and the Inter American University of Puerto Rico granted permission to collect data in their San Juan campuses. However, performing the study in only two institutions would jeopardize the representativeness of the sample and, therefore, the external validity of the study.

Consequently, I contacted Gaither International, a market and opinion research company founded in 1971 in Stamford, Connecticut, with fully staffed offices in Puerto Rico since 1984 (Gaither International, 2011). Gaither International PR has over 30 years of experience implementing both qualitative and quantitative research methodologies to research the Puerto Rican markets. Moreover, their resources and facilities provided the platform to perform studies using focus groups, in-depth interviews, and attitude studies (Gaither International, 2011). Also, Gaither uses computer-assisted personal interviewing (CAPI), computer-aided telephone interviewing (CATI), and computer-assisted web interviewing (CAWI) methodologies to collect data. Gaither International PR (Gaither) performed the programming of the survey using questions from the College Student Financial Literacy Survey (CSFLS). Gaither also distributed invitations to university

students from their participant pool of 1,180 college students, who were 18 years of age or older and who were enrolled in institutions located in Puerto Rico.

I collected data from three sources: Polytechnic University of Puerto Rico (PUPR), Inter American University of Puerto Rico Metropolitan Campus (INTER Metro), and Gaither International PR (Gaither) participant pool. I used this strategy to access a diverse population and reach the required sample size. Study candidates had to comply with specific characteristics to be eligible to participate in the study. To reach participants, I asked PUPR, INTER Metro, and Gaither to forward an invitation using their internal communication systems. The invitation letter contained the consent form and a link that led participants to an online survey. After accepting the conditions described in the consent form, participants accessed the survey by clicking on the link provided at the end of the consent form. Participants answered 28 questions from the College Student Financial Literacy Survey (CSFLS). Survey questions included items about financial knowledge and sources of financial information. Participants also answered demographic questions about gender, age, academic level, and socioeconomic background.

Data Screening

Through the data collection process, I eliminated any data from unqualified participants. I also reviewed and cleaned the data collected by identifying any issues like missing data using the SPSS software. After reaching the desired sample size and completing the data collection process, I sought for outliers using a frequency table, and histograms and scatterplots to show the distribution of the data.

Descriptive Analysis of the Sample

After completing the data screening and cleaning process, I proceeded to generate descriptive data of the sample. As stated previously, I built a sample composed of 198 Puerto Rican college students, both male and female, 18 years of age and older, from diverse socioeconomic backgrounds. Participants included undergraduate or graduate students from institutions of higher education located in Puerto Rico. I expected the sample to represent the characteristics of the Puerto Rican student population accurately.

Description of the Analysis Plan

In this study, I examined the sources of information that influence the financial knowledge and decisions of Puerto Rican college students. Therefore, I proposed three research questions to guide the study:

Research Question 1: What sources of information do Puerto Rican college students use to obtain financial information?

$H_0 1$: The mean proportion of the sources of information used by Puerto Rican college students is the same for family, mass media, school, and peers.

$H_a 1$: The mean proportion of the sources of information used by Puerto Rican college students is not the same for family, mass media, school, and peers. The hypothesis associated with this model is:

$H_0 1$: $\mu_1 = \mu_2 = \mu_3 = \mu_4$

$H_a 1$: The means are not all equal

I used this research question to compare the means of the four socialization agents. The variable μ represented the mean scores of the responses collected from the

survey for the four socialization agents (parents, school, peers, and media). The sources

of information contained in the survey included family or relatives and mass media,

including social networks. Other information sources included money management

courses taken in school; workshops; advisors; and peers, including friends, classmates,

and coworkers. To analyze the data, I used descriptive statistics, mainly frequency and

percentage. I tested the above hypothesis using descriptive statistics and a bar chart for

each category to show the frequency of answers. I also examined the collected data using

histograms to show the distribution of the answers and assess the data's normality.

Finally, I performed a one-way ANOVA to analyze differences among the

averages of the socialization agents. The one-way ANOVA followed the assumptions

presented below:

- Assumption 1: The data collected for the dependent variable (financial

  literacy) has a normal distribution throughout the sample.

- Assumption 2: The variance of the dependent variable will be

  homogeneous through the levels of the independent variable.

- Assumption 3: The study presents a random sample of the population.

  Errors in the model are independent of each other.

As part of the ANOVA models, I generated histograms to determine the normally

distributed scores of the predictors in each research question. I revised the outcomes of

the F-ratio and the degrees of freedom (*df*) to identify significant effects of the predictors

on the dependent variable.

Research Question 2: How much do the information sources influence the

financial decisions that Puerto Rican college students made?

$H_0$2: The information sources had no influence on the financial decisions of Puerto Rican college students.

H_a2: The information sources influenced the financial decisions of Puerto Rican college students.

I examined the hypothesis for research question 2 by running a multiple regression model:

$$Y_{\text{financial literacy}} = \beta_0 + \beta_1 X_{1(\text{parents})} + \beta_2 X_{2(\text{school})} + \beta_3 X_{3(\text{peers})} + \beta_4 X_{4(\text{media})}$$

The βs represented regression coefficients of the four predictors (parents, school, media, and peers). Research question 2 assessed the degree of influence that the four sources of information (family, mass media, school, and peers) had in the process of making financial decisions among participants. The sources of information kept acting as factors while the degree of influence served as the dependent variable. The hypothesis associated with the proposed model is:

$H_0$2: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$

H_a2: $\beta_i > 0$, where $i = 1$ through 4

In the case of H_A2, at least one of the β_i's was not zero, for $i = 1$ to 4, hence were not related to the dependent variable.

The assumptions for the multiple linear regression model included:

- There is little or no correlation within the data (independent errors).

- All the variables in the model are random and have a normal distribution.

- The variances are the same in each level of the predictors

(Homoscedasticity).

- There is little or no multicollinearity within the data.

To verify the model, I prepared histograms to display the distribution of the collected data. I also used a one-way ANOVA to compare and contrast the means of the four predictors. The ANOVA followed the same assumptions as in research question 1. Finally, I used a multiple regression to quantify the correlations between each predictor (parents, school, peers, and media) and the dependent variable (financial literacy). I used the p-value of the regression to determine the influence of the socialization agents on the dependent variable and to demonstrate the statistical significance of the test. I also reported the betas (β) regression coefficients of the predictors and adjusted R^2 and the VIF values in an effort to determine the relationship between the four predictors and the financial literacy of college students participating in the study (Field, 2013). To finish the analysis, I used the VIF values to identify multicollinearity in the data.

Research Question 3: To what extent does the frequency of exposure to financial topics through family communication, mass media, school, or peers predict the degree to which the participants show financial literacy?

$H_0 3$: There is no relationship between the frequency of exposure of the predictors and the financial literacy of participants.

$H_a 3$: The frequency of exposure of at least one predictor is related to the financial literacy of participants ($\beta_i > 0$, where $i = 1$ through 4).

As discussed in Chapter 1, family communication included discussions of financial topics with parents, grandparents, or other relatives. Media included information

gathered from television programs, radio, and newspapers. Media also included social media sites such as Facebook, LinkedIn, Twitter, and YouTube as sources of information. School included any business, finance, or economy courses attended at school or college. School also included information obtained from professional advisors and money management workshops. Peers included the financial information gained from friends, classmates, and coworkers.

Similar to research question 2, the hypothesis associated for the model proposed in research question 3 was:

H_03: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$

H_a3: $\beta_i > 0$, where $i = 1$ through 4

Like in H_A2, at least one of the B_i's is not zero, for $i = 1$ to 4, hence will be related to the dependent variable in H_a3.

The predictors in this hypothesis were consistent with those presented in research question 1 and research question 2. Also, I performed similar tests for research question 3 to those previously proposed in research question 2, although with a different focus. I tested the above hypothesis using a bar chart to display the distribution of the observations. I also performed a multiple linear regression to examine how the frequency of exposure to any of these sources of information (parents, school, peers, and media) influenced financial literacy (dependent variable) among Puerto Rican college students. Therefore, the multiple linear regression model that I used to test the hypothesis was:

$$Y_{financial\ literacy} = \beta_0 + \beta_1 X_{1(f\_parents)} + \beta_2 X_{2(f\_school)} + \beta_3 X_{3(f\_peers)} + \beta_4 X_{4(f\_media)}$$

I assessed the correlation between each predictor and the dependent variable using

the *p*-value of the regression to determine the influence of the predictors on the dependent

variable. The *p*-value also demonstrated the statistical significance of the test. Similar to

research question 2, the *β*s represented regression coefficients of the predictors or

socialization agents. Likewise, I assumed a model with no multicollinearity to prevent the

generation of unstable results, as proposed in research question 2. The assumptions for

the multiple linear regression model proposed to analyze research question 3 were the

same as the assumptions presented in research question 2. As part of the multiple

regression, I reported the betas (*β*) regression coefficients of the socialization agents and

the *Adjusted R²*. I also reported *VIF* values to determine the relationship between

predictors and the dependent variable (Field, 2013). Finally, I compared the means of the

frequency of exposure for the four predictors (family, media, school, or peers) by

performing a one-way ANOVA. This final test followed the same assumptions presented

for the ANOVA proposed in research question 1.

<center>**Threats to Validity**</center>

External Validity

External validity refers to the generalizability of the study. Frankfort-Nachmias

and Nachmias (2008) stated that the characteristics of the study's sample must represent

the characteristics of the population under examination to assure the external validity of

the study. Therefore, if the sample has the capacity to represent the characteristics of the

entire population, the study will produce more generalizable and reliable results.

Moreover, the study must provide relevant information to ensure consistency and

replicability of results across populations and settings (Galaviz et al., 2014). In this study,

I dealt with two threats to external validity: representativeness of the sample and reactive arrangements. The fact that I built a target sample threatened the representativeness of the sample. The sample was composed of college students who voluntarily accepted to answer the study survey. Both facts suggested that the sample may lack representativeness. To address this issue, I collected data from college students in three separate sources: Polytechnic University of Puerto Rico (PUPR), Inter American University of Puerto Rico (INTER Metro), and Gaither International Puerto Rico (Gaither). These three sources combined to provide a participant pool of over 14,000 college students to answer the survey. In all three sources, candidates from around the island comply with the characteristics required for the study.

The second threat to the external validity of the study was linked to the setting of the study. According to Frankfort-Nachmias and Nachmias (2008), researchers may compromise the external validity of the study if they collect data in a setting that does not reflect the natural conditions of participants. Reactive arrangements represented no threat to the study because I did not control the conditions of the settings for the study participants. Participants had the liberty to answer the survey at home, school, or any other place they chose.

Internal Validity

In this study, I needed to confirm that the relationships I examined between dependent and independent variables actually existed. In other words, I had to have the means to confirm that the independent variables in the study caused the observed variations in the dependent variables (Field, 2009; Frankfort-Nachmias & Nachmias,

2008). However, many factors jeopardized the internal validity of a study, including both extrinsic and intrinsic factors. Some of the threats jeopardizing the study included self-selection effects, history, and statistical regression and maturation (Frankfort-Nachmias & Nachmias, 2008).

As stated previously, I used a sample of 198 undergraduate and graduate students that consented to participate in the study and whose participation provided valid answers. Thus, participants self-selected themselves to participate or not in the study. According to Frankfort-Nachmias and Nachmias (2008), in these cases, the researcher cannot identify if the independent variable caused the differences between the experimental and control groups. However, in this study, I compared the socialization experiences of students and what socialization agents had more influence on them. Hence, the comparison groups were defined by the socialization agents (i.e., parents, school, peers, and media).

History represented another threat to the internal validity of the study. History refers to all the events that occur during the time the study takes place, and that might influence the responses of participants (Flannelly, Flannelly, & Jankowski, 2018; Frankfort-Nachmias & Nachmias, 2008). I had no control over this threat. However, I tried to minimalize its effect by collecting the data in the shortest amount of time possible, until I reached the desired sample size. A similar situation occurred with experimental mortality. In this case, there was a chance for participants to drop out of the study without completing their participation. Like with history, I had no control over the participants' decision to drop out of the study. However, I kept inviting students until I reached the desired sample size.

Other threats that jeopardized the internal validity of a research study included statistical regression and maturation (Flannelly et al., 2018; Frankfort-Nachmias & Nachmias, 2008). However, these threats usually occur in longitudinal or experimental studies with experimental and control groups within the sample. I did not propose any treatment of the proposed sample. Moreover, I performed the study at a single point in time. Hence, none of these potential threats represented a concern for the study.

Ethical Procedures

The development and performance of research studies may raise a series of ethical concerns. In the past, some researchers performed studies using human subjects without considering the impact that the procedures or the outcomes would have on the study participants. Participants of a research project may experience risks and affronts to their dignity, including anxiety, embarrassment, and low self-esteem, without any possible benefits (Frankfort-Nachmias & Nachmias, 2008; Petersen, 2017). So, in order to ensure the welfare of study participants, major professional societies, including universities, developed a code of ethics (Frankfort-Nachmias & Nachmias, 2008).

The code of ethics provides a series of guidelines that help researchers protect the participants' rights to self-determination, privacy, and dignity. No researcher may jeopardize the wellbeing of human subjects at any cost (Frankfort-Nachmias & Nachmias, 2008). Therefore, I took a series of measures to ensure the participants' welfare. I addressed issues like voluntarism, comprehension of the purpose of the study, privacy, and confidentiality to protect participants. I described these and other measures I took to protect the participants of my study in the following subsections.

Vulnerable populations. Vulnerable populations may experience greater burdens from emotional and mental disorders because they are unable to make informed decisions about defending themselves. In other cases, participants may be influenced by persons in positions of authority to participate in research studies against their will (Frankfort-Nachmias & Nachmias, 2008). According to the U.S. Code of Federal Regulations (2017), vulnerable populations include minors, pregnant women, human fetuses, neonates, prisoners, and people with mental disabilities. This study did not involve any children or minors, people with mental disabilities, human fetuses, neonates, or prisoners. In the case of pregnant women, they participated if, after understanding the risks and benefits of the study, they voluntarily chose to answer the survey. However, their participation was not a requirement of the study.

Informed consent. Informed consent provides participants with a brief but fair explanation of the purpose and the procedures of the study. Participants have the right to receive full and truthful information about the study before becoming part of it (Frankfort-Nachmias & Nachmias, 2008). Moreover, if participants do not agree with the intent of the study, in part or full, they have the right to refuse to participate in the study without consequences of any kind (Petersen 2017). Therefore, with every invitation, I sent a copy of an informed consent to disclose the rights, risks, any potential hazards, and benefits they would experience while taking part in the study, as suggested by Frankfort-Nachmias and Nachmias (2008). Interested participants had to provide their consent before starting answering the survey.

A successful consent form must comply with a series of elements. These elements

include a statement about the purpose of the study, the expected duration of the subject's participation, and a brief description of any risks or discomforts participants may experience (U.S. Code of Federal Regulations, 2017). Consent forms must also contain a sentence stating the extent to which the researcher will maintain the confidentiality of participants (U.S. Code of Federal Regulations, 2017). The consent form helped me demonstrate my respect for the participants' self-determination. It also helped shift part of the responsibility to the participants, hence reducing the legal liability of the researcher. Thus, the consent form specifically stated that participation in the study was voluntary, and the person could withdraw consent or discontinue participation at any time without any penalty (Frankfort-Nachmias & Nachmias, 2008). Also, participants received my contact information (email), so any student who wanted to discuss the study or had any questions or concerns could reach me.

Anonymity and privacy. People have the right to remain anonymous and private at all times during and after a research study. Thus, participation in the performed study remained anonymous and confidential. As a result, I did not collect any sensitive or private data from participants. The survey, however, included a demographic section in which participants informed their gender, age, academic standing, study major, household income, and school of attendance. In contrast, I did not collect or had access to any data concerning the names of participants, physical address, social security numbers, birth dates, or any other private information that may disclose their identity. Likewise, I asked PUPR, INTER Metro, and Gaither International to keep personal information private and safe in their databases and archives. Even though I did not collect sensitive information, I

managed the data as confidential information. I stored the collected data in a secure password protected OneDrive file that I will keep safe in my archives and will destroy the data five years after the completion of the study, as required by Walden University.

Summary

In Chapter 3, I proposed a cross-sectional study to identify the sources of information that Puerto Rican college students use to inform their financial decisions. Therefore, I proposed the administration of the College Student Financial Literacy Survey (CSFLS) to 191 Puerto Rican college students, 18 years and older, enrolled in an institution of higher education located in Puerto Rico. Although I proposed a target sample, student participation is voluntary. I employed a series of statistical tests to analyze the data collected. The proposed tests included descriptive statistics, one-way ANOVA, and multiple linear regression analysis.

After completing the data collection, cleaning and screening, and analysis processes, I proceeded to describe, interpret, and report the statistical results in Chapter 4. Data description included the data collection process and the demographic characteristics of the sample. I also discussed the interpretation of the statistical tests and how the results impact the assumptions and hypotheses of the study. Finally, I identified and analyzed any existing relationships and trends in the data that helped me answer the research questions guiding the study.

Chapter 4: Results

Introduction

With this study, I sought to start a conversation about the social learning

processes that influence the financial literacy of Puerto Ricans. Thus, I specifically

addressed the lack of information regarding the sources that Puerto Rican college

students use to develop their financial knowledge and to inform their financial decisions.

To understand how or why Puerto Ricans make the financial decisions they make, I

proposed a study in which I assessed the sources of information or socialization agents

they use during their decision-making process. With this study, I sought to extend the

knowledge built by Fernandez (2002), Martinez's (2013), and Castro-Gonzalez (2014)

about the social learning processes that Puerto Ricans experience and its influence in

their financial literacy. By identifying the socialization agents, I generated data about the

socialization practices behind the acquisition of financial knowledge.

I focus Chapter 4 on discussing the data collection process and the results of the

study. I divided the chapter into four sections. In this Introduction, I briefly reintroduce

the research questions and hypotheses guiding this research. The Data Collection includes

a description of the timeframe for data collection as well as actual recruitment and

response rates. I address the findings of the study, including the outcomes of the data

collection process and baseline descriptive and demographic characteristics of the

participants and describe the representativeness of the sample. I also discuss all the

discrepancies in data collection from the plan presented in chapter 3. The Results section

includes a report of the findings from the statistical analysis. I conclude Chapter 4 with a

brief summary of the findings and a transition to Chapter 5.

Data Collection

I made a few adjustments to the data collection process to deal with issues that appeared during and after getting IRB approval, and that would risk the completion of the study. First, I initially intended to collect data by contacting participants by phone. However, after thorough revisions and discussion with the IRB and the dissertation committee, I decided to move from the phone survey to an online survey. I expected the online survey to provide access to a broader population and to yield a higher response rate, as stated by De Rada (2012). The online survey would also facilitate student responses to a complex questionnaire, as is the case of the College Students Financial Literacy Survey (CSFLS). Gaither International PR programmed the CSFLS as an online survey where all responses would be gathered in an Excel spreadsheet. I collected data from November 27, 2018 to March 26, 2019. A total of 255 participants answered at least parts of the CSFLS. Out of the 255 responses, 198 participants provided complete and viable responses to the survey, resulting in a 78% retention rate.

Second, I intended to collect data using Gaither International's Media Brand Profiles (MBP) database, and both Polytechnic University of Puerto Rico (PUPR) and Inter American University of Puerto Rico (INTER Metro) respective student population. I could not start collecting data at INTER Metro until getting IRB approval from the institution. However, I reached the desired sample size ($n = 191$) before getting a response from INTER Metro's IRB. As a result, INTER Metro's students did not participate in the study.

Third, I proposed using a one-way ANOVA in Chapter 3 to analyze differences among the means of the factors in research question 1 and research question 2. Participants provided multiple responses in research question 1 and endorsed several sources of information at the same time. As a result, one-way ANOVA could not help to compare the repeated measurements in the data collected from the same participants (Field, 2013; Kim, 2017). Thus, I decided, after consulting with the committee, to also include a repeated measures ANOVA. Moreover, the repeated measures ANOVA approach allowed me to include post hoc analysis that helped me examine significant differences in the extent participants selected each source.

In the case of research question 2, I had four Likert scales that required the use of repeated measures ANOVA because, just as in research question 1, the same participants provided separate ratings for each information source. Many researchers have general concerns and conflicting positions about the use of ANOVAs to analyze ordinal data, arguing that parametric statistics are not appropriate for ordinal scales (Kim, 2017; Wadgave & Khairnar, 2016). However, the large size of the sample justifies the robustness of parametric statistics to analyze ordinal data without increasing type 1 error (Grech & Calleja, 2018; Kim, 2017; Norman, 2010; Wadgave & Khairnar, 2016). In both cases, research question 1 and research question 2, I also included a Friedman nonparametric ANOVA test. The Friedman test is frequently used to assess data where individuals can provide scores to different conditions or variables (Field, 2013). The Friedman test was used for statistical verification purposes.

Descriptive and Demographic Characteristics

The study focused on Puerto Rican college students, 18 years of age and older and currently residing in Puerto Rico. Puerto Rico had a college student population of 216,742 students registered in the fall of 2017. Of this population, 41.60% identified as male and 58.40% identified as female, with 86.72% enrolled in undergraduate programs and 13.28% of students pursuing graduate degrees (Integrated Postsecondary Education Data System, 2017). Most study participants (88.9%) were enrolled at the Polytechnic University of Puerto Rico (PUPR). PUPR has a student population composed of 75% male and 25% female, where 87% of students pursued an undergraduate degree, and 19% were enrolled in graduate programs (Integrated Postsecondary Education Data System, 2017).

Most participants in the sample of this study identified as male ($n = 141$, 71.2%), better representing the population of the Polytechnic University of Puerto Rico (PUPR) than the student population of the island. Participants in this study ranged in age from 18 to 59 years old, with 62.6% being between the ages of 18 and 22 years old. The sample included students from both undergraduate ($n = 174$, 87.9%) and graduate ($n = 24$, 12.1%) levels while students pursuing a career in engineering formed the majority of respondents ($n = 145$, 73.2%) followed by students enrolled in Business programs ($n = 31$, 15.7%). Five participants (2.5%) reported other majors, including Liberal Arts, Education, Pharmacy, and Architecture. Only 25.2% reported a family income of $50,000 a year or more. Table 2 displays the frequencies of these and more demographic characteristics of the study sample.

In general, Puerto Rican college students lacked financial knowledge, which agrees with the findings included in the literature review. The sample averaged a mean of 39.97% score in the financial knowledge component, a score below the 49% found by Martínez in 2013. When taking a detailed look, I found that participants know most about factors for loan approval (question 10, $n = 179$, 90.4%), followed by cosigning a loan (question 11, $n = 154$, 77.8%), and leased apartment but never occupied it (question 9, $n = 141$, 71.2%). In contrast, study participants knew the least about the responsibilities of a stolen credit card (question 15, $n = 9$, 4.5%), investments for retirement (question 8, $n = 35$, 17.7%), and interest charges on new credit purchases (question 16, $n = 36$, 18.2%). Table 3 shows additional information about individual financial literacy item answers.

Table 2

Descriptive Characteristics of the Sample (N=198)

Variable	Category	*n*	%
Gender			
	Male	141	71.2
	Female	57	28.8
Age			
	18-22	124	62.6
	23-29	53	26.8
	30-39	12	6.1
	40-59	9	4.5
Academic Status			
	Freshman	30	15.2
	Sophomore	41	20.7
	Junior	57	28.8
	Senior	46	23.2
	Masters	17	8.6
	Doctoral	7	3.5
Major			
	Engineering	145	73.2
	Business	32	16.2
	Science	16	8.1
	Other	5	2.5
Income			
	0-34,999	67	33.8
	35,000-49,999	38	19.2
	Don't Know [a]	43	21.7
	50,000-79,999	21	10.6
	80,000 or more	29	14.6
School			
	Polytechnic University of Puerto Rico	176	88.9
	University of Puerto Rico	16	8.1
	Other	6	3.0

[a] Those who didn't know their income were estimated as the middle category.

Table 3

Individual Financial Literacy Item Answers Sorted by the Highest Percentage Correct
(N = 198)

Literacy Item	*n*	%
10. Factors for loan approval	179	90.4
11. Cosign a loan	154	77.8
9. Leased apartment but never occupied it	141	71.2
14. Credit Bureau	116	58.6
5. Car losing value	109	55.1
25. Why purchase insurance	102	51.5
13. Bankruptcies	97	49
20. Risky investments	93	47
28. Accessing credit report	92	46.5
26. Life insurance	88	44.4
12. Personal debits and creditors	87	43.9
24b. Insurance for lawsuit	85	42.9
24c. Insurance for car accident	82	41.4
19. Nest egg for retirement	78	39.4
22. Liquidity of money for emergencies	75	37.9
24a. Insurance for stolen car	73	36.9
17. Take home pay	58	29.3
23. Auto insurance policy	58	29.3
21. Baby's education	57	28.8
27. Bank debit card responsibility	52	26.3
6. Best account for interest	52	26.3
18. Tax credits and tax deductions	49	24.7
4. Net worth	41	20.7
7. Check bouncing fee	39	19.7
16. Interest charges on new credit purchase	36	18.2
8. Rob and Molly saving for retirement	35	17.7
15. Stolen credit card	9	4.5

Representativeness of the sample

In this study, I sought to calculate a sample size that would be representative of the Puerto Rican college student population. Frankfort-Nachmias and Nachmias (2008) argued that a sample must reflect the characteristics of the population studied to ensure the external validity of the study. With time restrictions limiting the possibility to collect more data, a sample of 198 responses might not be representative of the 216,742 college students registered in the fall of 2017 (Puerto Rico Council on Education, 2018). Also, 88.9% ($n =$176) of participants in the sample reported being enrolled at the Polytechnic University of Puerto Rico (PUPR). PUPR has a student population composed of 75% male and 25% female (Integrated Postsecondary Education Data System, 2017). Also, 87% of the student population enrolled in undergraduate programs, while 19% of students pursued graduate degrees both at masters and doctoral levels (Integrated Postsecondary Education Data System, 2017). The sample of this study is more representative of PUPR's student population than the island's student population. Thus, the generalization of the data might be limited.

Study Results

The following section displays the results of the data analysis. I start the section by discussing the results calculated to measure the reliability of the data. The section is organized by research questions to understand if the data meet the assumptions presented in each question. Statistical tests included descriptive statistics, ANOVA tests, and multiple regression models. Chapter 4 also presents a detailed discussion of these outcomes.

Reliability of the Data

The purpose of estimating the reliability of the study was to demonstrate the validity of the data collection instrument. I wanted to examine the validity of the College Student Financial Literacy Survey (CSFLS) following the same approach used by Jorgensen in 2007. To that end, I calculated a reliability of $\alpha = .56$ for the financial knowledge section of the survey (questions 4-28) using the Statistical Package for the Social Sciences. According to the literature, reliability values should be as close to one as possible, with values over $\alpha = .70$ being frequently recommended (Field, 2013; Frankfort-Nachmias & Nachmias, 2008). However, in many cases, items on a subscale may include diverse themes (Field, 2013). In the case of the CSFLS, the Financial Knowledge subscale included topics about loans, credit cards, investments, and interest accrual, among others. The diversity of themes might explain the low value obtained for Cronbach's alpha.

Testing the Assumptions

There were a set of assumptions used to verify the quality of the statistical models. Although it may seem that different statistical procedures have their own set of assumptions, the assumptions for the tests included in this study are somewhat similar (Field, 2013). As a result, there were five assumptions used to assess the accuracy of the statistical tests: (a) normality, (b) homogeneity/homoscedasticity of variance, (c), independence of errors, (d) multicollinearity, and (e) sphericity. I used a series of graphs and statistics to perform these tests.

Normality. As proposed in Chapter 3, I used histograms of the collected data to examine the normality of the data collected. The histograms presented in Appendix E show normally distributed scores for the data. I also used P-P Plots to confirm the normality of the data. These P-P Plots, also presented in Appendix E, confirmed that the data points showed no signs of kurtosis or skewness in the data. These results suggest a normal distribution of errors.

Homogeneity/Homoscedasticity of variance. I examined the results of three Scatterplots of standardized residuals against standardized predicted values for the financial knowledge scores to assess the homoscedasticity of the data. The Scatterplots presented in Appendix F show that the data in research question 1, research question 2, and research question 3 did not funnel in any direction, demonstrating that there was no systematic relationship between the errors in all three models. The homogeneity of variance assumption was met.

Independence of errors. I also used the data presented in Table 7 to assess the independence of errors of the data in research question 1. Field (2013) argued that a value between 1 and 3 is acceptable to confirm the independence of errors in the test. The Durbin-Watson statistic (1.73) located at the end of Table 7 shows that the independence of errors in the data is tenable. For the data used to answer research question 2, Table 10 provides information about the assumption of independent errors by using the Durbin-Watson Statistic to inform about the independence of errors in the test. A value of 1.67 suggests independence of errors in the data. Likewise, the Durbin-Watson statistic (1.63) performed in research question 3 confirmed the independence of errors in the data. In all

three research questions, the outcomes demonstrated the independence of errors in the

tests. These results confirm that the independence assumption was met.

Multicollinearity. I also used the data presented in Table 7 to assess the

multicollinearity of the data used to answer research question 1. The variance inflation

factor (VIF) shows that all the VIF values are close to 1, and none exceeded 10, as

suggested by Field (2013). In research question 2, all variance inflation factors (VIF) of

the information sources shown in Table 10 have values close to 1. These values indicate

that there is no cause for concern about the predictors having a strong linear relationship

with other the predictors and that the regression is not biased (Field, 2013). These values

also suggest no multicollinearity in the data. Similarly, the VIF values for each

information source in research question 3 demonstrated no multicollinearity in the

collected data. The assumption of multicollinearity was met.

Sphericity. I examined Mauchly's Test to assess the sphericity of the data. The

data included in Table 4 shows that the data was not significant for the preferences of

information sources among respondents in the study (research question 1) ($\chi^2 = 7.258$, p

$= .202$). However, the data produced significant results for the importance of the

information sources (research question 2) ($\chi^2 = 15.757$, $p = .008$), violating the sphericity

assumption. In this case, I proceeded to adjust the degrees of freedom using the

corrections based upon estimate, as recommended by Field (2013). By using the data

showed in Table 9, I assessed the results from the Greenhouse-Geisser correction ($d_f =$

2.850, $p < .001$) and Huynh-Feldt correction ($d_f = 2.896$, $p < .001$), which also produced

significant results. The results of research question 2 demonstrated that there are

significant differences between the variances of the differences between all socialization

agents, resulting in a violation of the sphericity assumption. In an effort to overcome the

relative rigidity of the sphericity assumption, confirm its violation, and prevent making a

Type I error, I focused on the results of Bonferroni post hoc tests. Researchers agree that

the Bonferroni procedure produces robust, although conservative, results, providing

reasonable power and control of the Type I error (Field, 2013; Keselman, Keselman, &

Shaffer, 1991). Bonferroni post hoc tests confirmed the existence of significant

differences among the information sources. Since all the tests used to examine the

assumption of sphericity produced similar results, I decided not to proceed with running

multivariate test statistics (MANOVA), as recommended by Field (2013). However,

future researchers may want to use MANOVA to confirm the validity of the test and

reduce the possibility of committing a Type I error.

Table 4

Mauchly's Test of Sphericity for research question 1 and research question 2

Measure: MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Sources of Information	.964	7.258	5	.202	.976	.992	.333
Importance of Information Sources	.923	15.757	5	.008	.950	.965	.333

Note. Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.
a. Design: Intercept Within Subjects Design: factor1
b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Research Question 1: Sources of Information

Research Question 1 was:

Research Question 1: What sources of information do Puerto Rican college students use to obtain financial information?

$H_0 1$: The mean proportion of the sources of information used by Puerto Rican college students is the same for family, mass media, school, and peers.

$H_a 1$: The mean proportion of the sources of information used by Puerto Rican college students is not the same for family, mass media, school, and peers.

The purpose of research question 1 was to compare the means of the four socialization agents to determine the sources of information that Puerto Rican college students prefer to use when gathering financial information.

Descriptive statistics. The data in Table 5 shows the score variations among the information sources. The data showed differences in scores, highlighting the participants' preference for Parents. I found that the respondents sought out their parents ($n = 142$, 71.7%) significantly more frequently than any of the other three sources. In addition, respondents sought out information from the media (52.5%) significantly more frequently than they received information at school (32.8%) or from peers (25.8%). Media came in second place of preference among study participants, contrasting with researchers in the literature review who agreed that people preferred peers over media.

RQ1: One-way ANOVA. As part of the analysis, I also performed a one-way ANOVA to examined differences among the averages of the four socialization agents. The overall model was not significant ($p = .25$), indicating that there were no significant

differences between the means of the four socialization agents. The results in Table 5

show that the averages of the information sources range from 36.98 to 39.83. School (*M*

= 39.82, *SD* = 11.57) got the highest mean, which suggests that students that used school

as an information source demonstrated higher levels of financial literacy. In contrast,

Parents produced the lowest scores (*M* = 36.98, *SD* = 11.60) among all four sources of

information. This finding implies that parents are not as effective as other socialization

agents to transmit financial knowledge.

Table 5

Sources of Information Sorted by Highest Frequency (N = 198)

Sources of Information	*n*	*%*	*M*	*SD*
Parents	142	71.7	36.98	11.60
Media	104	52.5	39.74	13.27
School	65	32.8	39.82	11.57
Peers	51	25.8	39.00	12.51

Note. Full One-Way ANOVA Model: $F (3, 361) = 1.37$, $p = .25$.

RQ1: Repeated measures ANOVA. I used the results of the repeated measures

ANOVA model displayed in Table 6 comparing the four sources of information to further

assess research question 1. The overall model was significant ($p = .001$), suggesting that

there were significant differences between the four sources of information. In general, the

results of the test showed that the information sources used to gather financial knowledge

affected the financial knowledge scores of participants. Bonferroni post hoc tests were

used to compare the mean proportions for the four sources. Due to the dichotomous

nature of the variables, I also used a Friedman nonparametric repeated measures test as

an additional source of statistical verification. The Friedman test was also significant ($p =$

.001). This combination of findings provided support to reject Null Hypothesis 1.

Table 6

Sources of Information Repeated Measures

	Source	Type III Sum of Squares	d_f	Mean Square	F	Sig.
Information Sources	Sphericity Assumed	25.480	3	8.493	39.990	.000
	Greenhouse-Geisser	25.480	2.927	8.706	39.990	.000
	Huynh-Feldt	25.480	2.976	8.563	39.990	.000
	Lower-bound	25.480	1.000	25.480	39.990	.000
Error (Information Sources)	Sphericity Assumed	125.520	591	.212		
	Greenhouse-Geisser	125.520	576.580	.218		
	Huynh-Feldt	125.520	586.216	.214		
	Lower-bound	125.520	197.000	.637		

Note. Full ANOVA Model: $F (3, 591) = 39.99$, $p = .001$.
Note. Bonferroni post hoc tests: 1 > 2, 3, 4 ($p < .05$); 2 > 3, 4 ($p < .05$); no other pairs were significantly different at the $p < .05$ level.
Note. Friedman non-parametric repeated measures test ($\chi^2 = 100.23$, $p = .001$).

RQ1: Multiple linear regression. As an additional related analysis, Table 7

displays the results of the multiple regression model predicting financial literacy based on

the four sources of information. The overall model was significant ($p = .003$) and

accounted for 7.9% of the variance in financial literacy. Inspection of the beta weights

suggested that financial literacy was higher when respondents received information from

school ($\beta = .14$, $p = .05$) and from media sources ($\beta = .22$, $p = .003$). Although 71.7% of

the sample sought their parents more frequently, participants that reported getting

financial information from school (32.8%) got higher scores in the financial knowledge

component of the survey. These students demonstrated being financially smarter than the

rest of the sample who got financial knowledge from other sources of information.

Table 7

Multiple Regression Model Predicting Financial Literacy Based on Sources of
Information (N = 198)

Sources of Information	*B*	*SE*	β	*p*	VIF
Intercept	35.02	2.11		.001	
Parents	0.52	1.98	.02	.79	1.02
Peers	1.77	2.04	.06	.39	1.02
School	3.77	1.89	.14	.05	1.01
Media	5.51	1.81	.22	.003	1.05

Note. Full model: $F(4,193) = 4.15$, $p = .003$, $R^2 = .079$. Durbin-Watson = 1.73.

Research Question 2: Importance of Information Sources

Research Question 2 was,

Research Question 2: How much do the information sources influence the

financial decisions that Puerto Rican college students made?

$H_0 2$: The information sources had no influence on the financial decisions of

Puerto Rican college students.

$H_a 2$: The information sources influenced the financial decisions of Puerto Rican

college students.

I proposed using a one-way ANOVA to compare and contrast the means of the

four predictors separately and a multiple regression to quantify the correlations between

each predictor (parents, school, peers, and media) and the dependent variable (financial

literacy). However, I also included a repeated measures ANOVA to compare means since

the same people responded to all the socialization agents of the study.

RQ2: One-way ANOVA. Similarly to research question 1, the purpose of using

the one-way ANOVA in research question 2 was to compare and contrast the means of

the four socialization agents. The results of the test showed in Table 8 indicated that

Parents ($M = 4.17$, $SD = 1.21$) had the strongest influence among study respondents.

Concurring with the results in research question 1, Media ($M = 3.25$, $SD = 1.26$) placed

second among participants, displacing Peers ($M = 2.61$, $SD = 1.16$) to the least important

place among socialization agents.

Table 8

Information Sources' Influence on Financial Decisions

Sources of Information	*M*	*SD*
Parents	4.17	1.21
Media	3.25	1.26
School	2.78	1.37
Peers	2.61	1.16

Note. Full One-way ANOVA Model: F (3, 791) = 61.94, $p = .001$.

RQ2: Repeated measures ANOVA. The outcomes of the repeated measures

ANOVA displayed in Table 9 compare the level of importance ratings of the information

sources. These ratings were based on a five-point metric: 1 = *Unimportant* to 5 = *Very*

important. The overall ANOVA model was significant ($p = .001$), confirming that the

financial knowledge scores of participants were significantly affected by the influence

levels of the information sources.

Bonferroni post hoc tests confirmed the relevance of Parents. Parents were

significantly more important as a source of financial information than Media ($M = 3.25$),

School ($M = 2.78$), and Peers ($M = 2.61$). Media was rated as significantly more

important than school and peers. School and peers were rated equally important, showing

no significant differences in ratings. This finding contrasts with researchers from the

literature review who considered peers more important. The Friedman nonparametric

repeated measures test corroborated the significance of the test ($p = .001$). The null

hypothesis H_02 was rejected as a result of these findings.

Table 9

Repeated Measures of Information Sources' Influence on Financial Knowledge

	Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Information Sources	Sphericity Assumed	292.549	3	97.516	62.664	.000
	Greenhouse-Geisser	292.549	2.850	102.645	62.664	.000
	Huynh-Feldt	292.549	2.896	101.007	62.664	.000
	Lower-bound	292.549	1.000	292.549	62.664	.000
Error (Information Sources)	Sphericity Assumed	919.701	591	1.556		
	Greenhouse-Geisser	919.701	561.470	1.638		
	Huynh-Feldt	919.701	570.575	1.612		
	Lower-bound	919.701	197.000	4.669		

Note. Ratings based on a five-point metric: 1 = *Unimportant* to 5 = *Very important.*
Note. Full ANOVA Model: $F(3, 591) = 62.66$, $p = .001$.
Note. Bonferroni post hoc tests: 1 > 2, 3, 4 ($p < .05$); 2 > 3, 4 ($p < .05$); no other pairs were significantly different at the $p < .05$ level.
Note. Friedman nonparametric repeated measures test ($\chi^2 = 152.39$, $p = .001$).

RQ2: Multiple linear regression. As a supplemental analysis, I used a multiple

regression model to predict financial literacy based on the importance of information

sources, as shown in Table 10. The overall model was significant ($p = .05$) and accounted

for 4.7% of the variance in financial literacy among participants. Inspection of the beta

weights showed none of the beta weights to be significant at the $p < .05$ level. Although

not significant, these results suggested that the participants that considered Media ($\beta =$

.13, $p = .08$) as an important influence for them, tended to get higher scores in the

financial knowledge component than the rest of the sample.

Table 10

Multiple Regression Model Predicting Financial Literacy Based on Importance of Information Sources (N = 198)

Importance of Information	B	SE	β	p	VIF
Intercept	39.98	5.01		.001	
Parents	-0.95	0.78	-.09	.22	1.09
Peers	-0.88	0.79	-.08	.26	1.04
School	0.72	0.66	.08	.28	1.03
Media	1.32	0.74	.13	.08	1.08

Note. Full model: $F(4,193) = 2.38$, $p = .05$, $R^2 = .047$. Durbin-Watson = 1.67.

Research Question 3: Frequency of Exposure

The purpose of Research Question 3 was to examine if the frequency of exposure to information sources can predict the financial literacy of participants. Research Question 3 inquired:

Research Question 3: To what extent does the frequency of exposure to financial topics through family communication, mass media, school, or peers predict the degree to which the participant shows financial literacy?

$H_0 3$: There is no relationship between the predictors and the financial literacy of participants ($\beta 1 = \beta 2 = \beta 3 = \beta 4 = 0$).

$H_a 3$: At least one of the predictors is related to the financial literacy of participants ($\beta i > 0$, where $i = 1$ thru 4).

RQ3: Multiple linear regression. Table 11 provides the results of the multiple regression model predicting financial literacy based on the frequency of exposure to the information sources. The table provides evidence that the overall model was not significant ($p = .09$) and that it accounted for 4.0% of the variance in financial literacy. Similarly, no beta weights were significant. These results imply that the frequency of exposure to the information sources does not predict the financial knowledge of participants. This combination of findings provided support to retain Null Hypothesis 3.

Table 11

Multiple Regression Model Predicting Financial Literacy Based on Frequency of Information (N = 198)

Frequency of Information	B	SE	β	p	VIF
Intercept	30.67	3.61		.001	
Parents	0.91	0.72	.09	.21	1.04
Peers	0.30	0.77	.03	.70	1.06
School	0.88	0.76	.08	.25	1.06
Media	1.17	0.69	.12	.09	1.05

Note. Full model: $F(4,193) = 2.02$, $p = .09$, $R^2 = .040$. Durbin-Watson = 1.63.

As an additional source of findings, the results shown in Table 12 demonstrated that the overall ANOVA model was significant ($p = .001$). As with the previous tests, Bonferroni post hoc tests were used to compare the mean ratings for the four sources. These ratings were based on a five-point metric: 1 = *Never* to 5 = *Very frequently*. The Bonferroni post hoc tests confirmed the relevance of Parents ($M = 3.68$, $SD = 1.28$). Parents were significantly used more frequently than peers, school, and media. Also, Media ($M = 2.75$, $SD = 1.35$) was more significantly used than School ($M = 2.27$, $SD = 1.22$), but not significantly different from Peers ($M = 2.50$, $SD = 1.21$). To confirm the

results of the repeated measures ANOVA, I used a Friedman nonparametric repeated

measures test was used, which also produced significant results ($p = .001$).

Table 12

Ratings of Information Sources' Frequency of Exposure

Sources of Information	*M*	*SD*
1. Parents	3.68	1.28
2. Media	2.75	1.35
3. Peers	2.50	1.21
4. School	2.27	1.22

Note. Full ANOVA Model: $F(3, 591) = 53.59$, $p = .001$.
Note. Bonferroni post hoc tests: $1 > 2, 3, 4$ ($p < .05$); $2 > 4$ ($p < .05$); no other pairs were significantly different at the $p < .05$ level.
Note. Friedman nonparametric repeated measures test ($\chi^2 = 138.11$, $p = .001$).

Summary

The purpose of this quantitative, cross-sectional study, nonexperimental study

was to examine the sources of information that Puerto Rican college students use to

inform their financial decisions. Chapter 4 included the overall levels of financial

knowledge among participants in the sample. This chapter also provided information

about the representativeness of the sample and Cronbach's alpha coefficients for the

reliability of the data. Following the descriptive sections, frequency, repeated measures

ANOVA, and multiple regression analyses were performed to test the null hypothesis of

three research questions. Hypothesis 1 (differences in sources used) was not supported.

Hypothesis 2 (sources of information have different influence) was not supported.

Hypothesis 3 (frequency of exposure related to literacy) was supported.

In the next and final chapter, I provide a thorough discussion and interpretation of

these findings. I review the limitations of the study and make policy, practitioner, and

future research recommendations. Finally, I explore the implications of the study and its

potential impact on positive social change.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

Puerto Ricans living in the mainland have been included in many studies addressing the financial literacy of Hispanics, among other minorities. However, only a few studies addressed the financial literacy of island Puerto Ricans, including Castro-Gonzalez (2014), Fernandez (2002), and Martinez (2013). These researchers agreed that Puerto Ricans lack basic financial knowledge, affecting their financial wellbeing. In contrast, the literature did not provide evidence about the knowledge transmission vehicles and practices that Puerto Ricans use to gather and transmit financial knowledge. As a result, there was a limited understanding of the social learning processes that Puerto Ricans employ when making financial decisions.

The purpose of the proposed quantitative, nonexperimental study was to examine the information sources that influence the financial knowledge and decisions of Puerto Rican college students. The general problem for the study was that Puerto Ricans have little knowledge about basic money management practices (Martinez, 2013). The specific problem to be addressed in the study originated from the lack of information regarding the sources that Puerto Rican college students use to develop their financial knowledge and to inform their financial decisions. Therefore, I proposed a study in which I assessed the sources of information or socialization agents they use during their decision-making process. With the identification of the socialization agents, I generated data about Puerto Ricans' preferences over financial sources of information.

The results of this study confirmed that Puerto Rican college students lack basic

financial knowledge as the average score of the sample was lower when compared to other studies. The outcomes corroborated that study participants prefer to gather financial knowledge from parents more frequently than any other information source. Participants considered parents as the most important source of information to learn about money management, thus having the most influence among all socialization agents. However, the results suggested that the frequency of exposure to the information sources could not predict the financial knowledge of participants. Exploring these relationships between sources of information and financial knowledge was essential to understand the financial socialization practices of Puerto Ricans and to extend the current body of knowledge in the field of financial literacy.

The results of this study highlighted many similarities and differences with the results of previous studies performed in Puerto Rico. It also stressed the similarities and differences that exist among Puerto Ricans and other ethnic groups regarding financial knowledge. This study helped extend the current body of knowledge as it revealed the financial literacy of a new subgroup of Puerto Ricans (college students from a private institution). This study also generated new data about the transmission practices of these individuals and established new relationships between information transmission practices and the levels of financial knowledge among respondents. However, the completion of this study faced some obstacles that limited its scope but that, as a result, may open the doors to new research opportunities.

In the following sections, I thoroughly examine the results of the study and how these findings compare and contrast to the literature. I discuss the conclusions of the

study, limitations, and explore its implications for practice and policy, including its

impact for positive social change. I continue by highlighting many opportunities for

future research that I found through the development and execution of the study. I also

include policy and practice recommendations.

Interpretation of Findings

This study highlighted important findings that both agree and disagree with the

literature review. In general, the outcomes of the study aligned to the theoretical

propositions of Moschis and Churchill (1978), and Gudmunson and Danes (2011)

regarding the role of parents in the financial socialization experiences of their children.

The study also supported Moschis and Churchill's position that the frequency of exposure

had no significant correlation with desirable consumer behaviors. This finding contrasts

with Gudmunson and Danes' argument that the frequency in communication led to better

money management skills.

Information Sources Preferences

A target sample of Puerto Rican college students was surveyed to identify the

sources of financial information that this population prefers. The statistical analysis of

this study emphasized existing significant differences between the information sources

included in the study, highlighting the participants' preference for Parents over other

socialization agents. The results of the survey demonstrated that respondents in the

sample significantly favored parents since 71.7% of the sample identified parents as their

preferred source of financial information. This result concurred with many financial

researchers who argued that parents play a stronger, more significant role in the

development of financial behaviors than any other source of information (Bucciol &

Veronesi, 2014; Chowa & Despard, 2014; Drever et al., 2015; Dündar, 2017; Grohmann

et al., 2015; Kim & Chatterjee, 2013). This finding also coincided with Fernandez (2002),

who found that 76% of his sample consulted their parents when considering the purchase

of a product. The strong impact of parental financial socialization results from early

interactions between parents and their children during the early stages of childhood. As

children grow and become adults, they keep interacting and learning financial behaviors

from parents, either directly or indirectly, to manage the financial challenges they face in

adulthood.

The findings of this study also support the theoretical propositions used as the

foundation of the study. According to the theoretical framework, parents play the most

significant role as a financial socialization agent and keep influencing financial decisions

during a lifetime (Gudmunson & Danes, 2011; Moschis & Churchill, 1978). These

findings came as no surprise for two main reasons. First, most of the researchers

examined in the literature review agreed in the active role that parents play, mostly

during the early stages of childhood. Second, Puerto Ricans give great importance to

keeping close family relationships, having parents, grandparents, or other guardians at the

center of the family nucleus (Mogro-Wilson, Rojas, & Haynes, 2016).

Once I established the link between preferences over information sources and

financial knowledge levels in the sample, I found an interesting fact. As participants

gather financial information mostly from their parents, it seemed that this source of

information provided respondents in the sample with incorrect data. In contrast, financial

knowledge was higher on those participants that identified formal education as a

preferred source of information. This finding suggests that Puerto Rican college students

are not receiving the necessary knowledge from their parents to successfully manage their

personal finances. Instead, getting an education and dealing with financial experiences

through life provided a better source of financial information to participants.

Levels of Influence

Just as respondents preferred parents as a source of information, Parents also had

the most influence in their financial decisions among participants in the sample. In this

case, 76.8% of the sample reported that parents were important (18.7%) or very important

(58.1%) for the development of their money management skills. Many researchers

included in the literature review agreed that parental influence plays a significant role in

the financial behaviors of their children (Chowa & Despard, 2014; Dündar, 2017;

Hancock et al., 2013; Thaichon, 2017). Clearly, the research confirms that Puerto Rican

parents, like other ethnic groups, strongly influence the behavioral patterns of their

children.

The results of research question 2 agree with the theories used as the foundation

of the study. Family financial socialization (FFS) theory stated that parents significantly

influence the financial literacy of their children (Danes & Yang, 2014; Gudmunson &

Danes, 2011; Sundarasen et al., 2016). Likewise, Moschis and Churchill (1978) argued

that family was an important agent to teach adolescents the rational aspects of

consumption. Similar to the results in research question 1, Puerto Rican parents have a

strong influence on the financial attitudes and behaviors of their children. However, after

comparing the levels of influence of information sources with the scores in the financial

knowledge component, it seems that parents made a failed attempt in the transmission of

desirable financial knowledge. These results give the impression that parents did not

provide enough information to help study participants to participate in the financial

system successfully.

Frequency of Exposure

Many of the study participants in the sample informed that they frequently discuss

financial topics with their parents. Similar to the findings in research question 1 and

research question 2, parents had the highest score ($M = 3.67$, $SD = 1.28$) among the

information sources included in the study. Actually, 35.4% of the sample said that they

discuss financial topics with their parents very frequently. In contrast, 6.6% of the sample

interacted very frequently with school, 6.6% exchanged information very frequently with

peers, and 14.6% obtained financial knowledge very frequently from the media.

However, the frequency of exposure to the socialization agents did not have a significant

impact on the financial knowledge of the sample.

Through their family financial socialization model, Gudmunson and Danes (2011)

argued that frequent family interactions promote learning processes. In contrast, Moschis

and Churchill (1978) argued that the frequency of family communication about socially

desirable consumer behavior had no significant correlation with children's actions. The

results of the study implied that the frequency of exposure to the socialization agents did

not play a significant role in the financial knowledge of participants, coinciding with

Moschis and Churchill's theoretical framework and contrasting with Gudmunson and

Danes' family financial socialization model.

The outcomes of the statistical analysis produced conflicting results to the findings in the literature. Shim et al. (2010) stated that people learn financial attitudes and behaviors from those information sources they interact with most regularly. Many researchers also concurred that the frequency of exposure to information sources influenced the socialization experiences of individuals (Ahluwalia & Sanan, 2016; Chu & Sung, 2015; Niu, 2013). Likewise, Ahluwalia and Sanan (2016) argued that parental interaction frequency impacted the consumer behaviors of their children. However, the data did not highlight any significant relationship between the frequency of interactions and the financial knowledge levels of the sample. The lack of financial knowledge among parents, as suggested in research question 1, may explain this fact. Yet, the data did not provide enough evidence to conclude that the financial illiteracy of parents led to this finding.

Additional Findings

Although the findings of the statistical analysis mostly agreed with the literature review, the sample exhibited several peculiarities that separated them from other studies. These peculiarities include levels of financial knowledge, preferences of information sources other than Parents, and the impact of demographic factors. The benefits of discussing the additional findings of the study are twofold. First, they help extend the goals of the study by providing additional data about the preferences and characteristics of the sample. Second, these findings provide new opportunities for future research.

Participants' financial literacy levels. The outcomes of the study showed low levels of financial literacy among respondents. In average, the participants in the sample scored 39.97% in the financial knowledge component of the survey. This result represents a 10 percentage point drop when compared to Martinez' (2013) 49%. Contrary to trends in the United States, children from higher socioeconomic groups usually attend the public university system in Puerto Rico, resulting from a top academic reputation. Therefore, the contrasting findings in this study may provide significant insights into the differences in knowledge literacy levels between students enrolled in public and private universities in Puerto Rico.

Conversely, the sample got an average score higher than other Hispanic groups located in the mainland. According to Lusardi and Mitchell (2011), Hispanics in their sample answered 13.1% of financial literacy questions correctly, a score significantly lower to the samples examined in the island in this and previous studies. However, these results confirm that both Puerto Ricans and other Hispanic groups in the mainland face severe financial disadvantages when compared to other ethnic groups, as stated by Lusardi and Tufano (2015). These disadvantages lead to increased living costs resulting from fees, charges, and additional finance costs that people do not know how to manage.

A more in-depth look into the data highlighted what financial topics participants knew more about and what they knew the least. For example, participants knew most about factors for loan approval and the responsibilities of cosigning a loan. In contrast, participants knew the least about the responsibilities of stolen credit cards, investments for retirement, and interest charges on new credit purchases. Retirement planning and

investments decisions frequently require the assistance of experts (Amoah, 2016).

However, not having at least the basic knowledge about these topics prevent people from

participating in financial markets, thus reducing their chances at wealth accumulation.

Peers versus media. Data findings showed a shift from peers to media as the

socialization agent most frequently used after parents. The literature suggested that, as

individuals grow older, they substitute their interactions with parents to interact with

peers. As a result, peers significantly influenced consumer behaviors, performing as

relevant actors in financial socialization experiences (Chu & Sung, 2015; Niu, 2013;

Te'eni-Harari, 2016). However, the participants in this study used media more frequently

and had more influence in their financial decisions than school and peers.

The literature suggested several reasons to explain this shift in socialization

agents preferences. According to Ahluwalia and Sanan (2016), the frequency with which

people use social media influenced the socialization experiences of individuals. Easy

access to technology promotes increased interactions with friends and family members

through social media platforms, which people can use to develop a social life online

(Duffett & Wakeham, 2016; Knežević, Stefańska, & Stojkovi, 2017). As a result, new

social platforms provide new means to build social relationships without the need for

direct or personal contact. Although I am not suggesting that social media replaced social

interactions with peers and friends, researchers agree that the dynamics of these

interactions changed and social media has an essential role in this shift.

Demographic factors. The literature thoroughly discussed the impact of

demographic characteristics on the financial literacy of individuals. Although I was no

assessing the influence of demographic characteristics in this study, I examined the importance of age, socioeconomic status, and gender as part of the statistical analysis. As a result, I was able to identify some trends that separate Puerto Ricans from other ethnic groups.

Socioeconomic status refers to household income. The literature suggested that parental socioeconomic status has a positive association with a higher degree of financial literacy and predicts financial satisfaction (Grohmann et al., 2015; Kim & Chatterjee, 2013; Shim et al., 2010). Although I collected data from different socioeconomic groups, I could not identify any significant differences in financial knowledge or information sources preferences based on the household income of the sample. Regarding gender differences, there is a general consensus about the role of gender in the financial literacy of individuals. Researchers concurred that men generally demonstrated more financial knowledge and willingness to take financial risks than women (Agnew & Cameron-Agnew, 2015; Akben-Selcuk & Altiok-Yilmaz, 2014; Garrison & Gutter, 2010; Kozina and Ponikvar, 2014; Lusardi & Tufano, 2015). However, in the case of participants, there were no differences in financial knowledge levels between genders. Gender and socioeconomic status made no difference in the financial knowledge of participants in the sample.

Age, in contrast, had a significant effect on the financial literacy of participants in this study, with older respondents getting higher financial knowledge scores than the rest of the sample. Pearson's correlation coefficient confirmed that age ($r = .53$) had the largest effect (28.1%) on the total variance of the test when compared to the other

variables of the study. Moreover, age had over five times the explaining power when compared to the next most significant variable, media ($r = .24$, 5.8%). The literature suggested that people who started having socialization experiences at an early age and people who practiced their financial skills for a long time (older people) exhibited higher financial literacy levels (Ahluwalian & Sanan, 2016; Grohmann et al., 2015; Smyczek & Matysiewicz, 2015; Thaichon, 2017). These findings imply that, in the case of Puerto Rican college students, age matters more than other variables to explain financial knowledge levels among participants of this study. In other words, financial knowledge among participants increased as they got older.

Limitations of the Study

The most notable limitations of this study relate to the size of the sample and its lack of representativeness. The sample included 198 college students, from which most study participants (88.9%) were enrolled at the Polytechnic University of Puerto Rico (PUPR). In a population of 216,742 college students registered in the fall of 2017, 198 respondents represent around .09% of the population. As the sample only included college students, I left out individuals from other demographic groups, like workers, entrepreneurs, or retirees. The study was also limited to San Juan, excluding the other 77 cities from the island.

Another limitation of the study was its design. I used a cross-sectional, quantitative approach to perform the study, disregarding the advantages of longitudinal designs, experimental approaches, and qualitative research models. As expected, the cross-sectional design did not allow the manipulation of the independent variables. As a

result, I was not able to make before and after comparisons of the collected data. Finally, I collected the data in Puerto Rico. Therefore, the outcomes of this study may not represent the financial socialization experiences of Puerto Ricans living in the mainland. The outcomes cannot be generalized to portray the financial socialization experiences of other Hispanic groups, living either in the mainland, the island of Puerto Rico, or their home countries.

Implications of the Study

Financial literacy is a topic well documented in the United States. Many finance studies assessed the financial literacy of the population in different locations around the mainland and compared financial knowledge levels between different ethnic groups. However, even though Puerto Rico is part of the United States, there is a limited number of published, peer-review studies that addressed the financial literacy of Puerto Ricans, either in the mainland or those living in the island. I found little information about the financial literacy of Puerto Ricans as the focus of a study. I also found little information about the information sources employed by this group to learn and transmit positive financial behaviors.

The three research questions mentioned above questions provide information to start developing an outline that describes the financial socialization practices of Puerto Ricans. Getting financial education is imperative for island Puerto Ricans as many individuals face economic challenges resulting from the Puerto Rican government-debt crisis occurring in the island since 2006. To help Puerto Ricans become more knowledgeable in financial topics, researchers and educators first need to make Puerto

Ricans aware of their lack of financial skills and help them improve their situation. With this research, in combination with the studies included in the literature review, I aimed to increase awareness about the financial literacy situation among Puerto Ricans.

However, with this study, I also sought to inform how educators, researchers, and policymakers can help the general population become self-sufficient, reach financial stability, and raise interest in personal finance topics. As I mentioned previously, "one size fits all" strategies do not work in all settings, and Puerto Ricans need all the help they can get to survive the Puerto Rican government-debt crisis. The educational programs developed for white Americans or African Americans do not necessarily manage the financial challenges faced by Puerto Ricans. However, with the knowledge gathered in this study, Puerto Rico can move from the "one size fits all" idiosyncrasy to develop a method that actually fits the needs of the Puerto Rican population.

Implications for Practice

As I confirmed in this study, children depend on their parents to develop financial skills. Therefore, financial education should focus on parents and adults. There is a limited offering in Puerto Rico for parents to develop financial skills. One available educational offering was developed by the Puerto Rico Office of the Commissioner of Financial Institutions.

The Puerto Rico Office of the Commissioner of Financial Institutions created in April 2019 the *Sal a flote* (Staying afloat) campaign. The purpose of the campaign was to promote financial education to of all ages and educational levels (Tellado Domenech, 2019). The Office of the Commissioner of Financial Institutions also sought to inform

people about the importance of developing positive financial behaviors and encourage them to get a financial education. To that purpose, the Office of the Commissioner of Financial Institutions collected data to measure the financial knowledge of Puerto Ricans using an online survey. I believe that the Office of the Commissioner of Financial Institutions can strengthen their campaign and other educational programs by combining the findings of their survey with the outcomes of this study. This way, the Office of the Commissioner of Financial Institutions may optimize the communication vehicles used to transmit financial knowledge and maximize the delivery of financial information to the public.

Puerto Rican business schools and financial institutions also have the resources needed to provide Puerto Ricans with financial knowledge. Institutions of higher education, educators, and financial practitioners can use the outcomes of this study to start reaching parents and communities around the island and independently provide them with financial education. Financial education alone might not be the answer to all the financial problems of Puerto Ricans, but it may help raise awareness about the resources available to participate in the financial system more actively.

Finally, the finding that age has a significant effect on the financial literacy of people suggests that people's life experiences have a strong impact on their learning processes. Bazile (2014) argued that students' experiences with their own money shaped the way they manage their finances. Bazile also claimed that it would be useful to include real-life situations in educational programs to help people relate and learn from other people's experiences. As human beings, people learn what works for them and what does

not through a series of life experiences that include successes and mistakes. Hence, I believe that educators should employ Bazile's suggestion as a strategy to optimize the delivery of financial information and knowledge in Puerto Rico. The implementation of real-life experiences, even better if fellow Puerto Ricans reported these experiences, would increase the impact of any educational strategy. The inclusion of study cases would provide the target audience with information they can relate with and, thus, they can process, assimilate, and learn from more effectively.

Implications for Policy

Different organizations in the United States started addressing the need for financial education among children and adults. As a result, 17 states require high school students to attend courses in personal finance since 2014 (Council for Economic Education, 2016). Likewise, 20 states require high school students to take a course in economics, and five states require a stand-alone semester course in personal finance (Council for Economic Education, 2016). The outcomes of this and previous studies performed in Puerto Rico provide plenty of reasons for policymakers on the island to create and implement new financial literacy programs. Also, the promotion of effective education programs through collaborative initiatives with educators and the financial industry may help improve the financial wellbeing of Puerto Ricans. However, since "one size does not fit all," these programs may emulate those created in the states but must be customized to satisfy the needs of Puerto Ricans.

Implications for Positive Change

My goal with this study was to identify opportunities for people to improve their

financial knowledge and financial wellbeing. Researchers agree that financial literacy

helps people from all demographics become competent in money management activities,

supporting them to improve their economic wealth and their psychological health

(Allmark & Machaczek, 2015; Drever et al., 2015; Loke & Hageman, 2013; Serido et al.,

2015). This research study may help enhance financial literacy at different levels of

Puerto Rican society, from individuals to businesses, and financial institutions. The

outcomes of this study can act as foundation for the development of effective financial

education strategies that implement preferred communication vehicles that effectively

deliver and spread financial knowledge in the population.

Recommendations for Future Research

The recommendations for future research introduced in the following section stem

from the findings discussed in this study. The following recommendations are not

intended to solve all the issues related to this study or the lack of financial literacy

currently affecting the Puerto Rican population. Instead, these recommendations should

be seen as a guide to continue the financial literacy conversation in Puerto Rico and to

assess further the social characteristics and processes that separate Puerto Ricans from

other ethnic groups.

Other Groups

The first recommendation for further studies is to replicate this study by collecting

data from Puerto Ricans born in the mainland. Puerto Ricans have migrated to the United

States since 1898, after the American occupation of the island resulting from the Spanish-

American war. There are several generations of mainland American citizens that can

trace their family ancestry to Puerto Rico. Moreover, there are millions of Puerto Ricans

living in the mainland. However, life experiences in a foreign land transform and separate

the social processes and communication habits of island and mainland Puerto Ricans.

I would also assess the information sources that people from other groups within

the Hispanic population in the United States use to gather and transmit financial

knowledge. Hispanics living in the United States have roots in 19 countries located in the

Western Hemisphere, in addition to Spain (Europe) and Equatorial Guinea (Africa). The

replication of this study to examine the sources of information preferred by people from

these populations would help extend the current knowledge in the field of financial

literacy. Moreover, further studies would generate data that will promote the comparison,

contrasting, and further understanding of socialization practices in Hispanic countries.

Financial Socialization Processes

The outcomes of this study confirmed the relevance of parents in the socialization

experiences of Puerto Ricans. However, due to the limitations of this study, the data did

not provide further information about the causes behind the low scores of participants.

Little is known of the processes that Puerto Rican parents employ to teach basic financial

concepts to their children. Even though parents have such a strong influence in the

financial behaviors of their children, the outcomes of this study suggested that parents

failed in the transmission of financial knowledge. Further research is necessary to

understand the socialization processes, both implicit and purposive, that Puerto Rican

parents use to transmit financial knowledge and skills to their offspring.

Longitudinal Assessment of Socialization Experiences

As a result of the cross-sectional design of the study, I was not able to assess the impact of socialization experiences during an extended period of time. Researchers discussed the need for further longitudinal studies, arguing that these would help build an understanding of the relationship between socialization agents and financial literacy levels across time (Gudmunson & Danes, 2011; Shim et al., 2010). I recommend the implementation of a longitudinal study to provide additional data that helps identify stronger relationships between the variables of the study. Moreover, people change over time, and a longitudinal study would help document changes in financial behaviors during an extended interval of time, beyond the limited period documented in this study. Finally, the results of a longitudinal study may be compared and contrasted to the results of this cross-sectional study by assessing the differences and similarities of the data collected both at a single and at different points in time.

The Increasing Impact of Media

The outcomes of the study highlighted the increasing relevance that media is gaining among users. Researchers in the literature stated that the influence of parents is reduced and replaced by the constant interactions with friends and peers as children grow and attend school (Aldea & Brandabur, 2013; Serido et al., 2015). However, participants in the study reported preference and stronger influence of media than peers in their financial literacy. These results suggest that Puerto Rican college students prefer to gather financial knowledge from Media outlets than from their friends. Further research in these topics would help identify the specific media outlets that Puerto Rican college students

prefer to interact with as well as the level of influence that these communication vehicles have on their financial decisions.

Demographic Characteristics as Mediators or Moderators

Although the study did not focus on the impact of demographic characteristics on the socialization experiences or the financial knowledge or participants, it is important to mention the role of age in this study. The results of this study highlighted that age plays a significant role in the financial literacy levels of Puerto Rican college students. Researchers agree that the impact that age has on the socialization experiences of individuals is twofold. On the one hand, people who start having socialization experiences at a younger age demonstrate stronger financial skills and will show positive financial behaviors (Hira et al., 2013; Thaichon, 2017). Likewise, older people tend to have a deeper understanding of financial concepts, hence displaying better financial attitudes and behaviors than younger individuals (Ahluwalian & Sanan, 2016; Grohmann et al., 2015; Smyczek & Matysiewicz, 2015). Both perspectives might explain why some groups demonstrate having better financial skills than others. I recommend additional research to assess the role of age and other demographic characteristics, either as moderators or mediators of financial literacy.

Methodological Enhancements

I think this study can become stronger than it is. To that end, I would change two main characteristics of this study. First, I limited the sample to Puerto Rican college students. Most study participants in the sample (88.9%) were enrolled at the Polytechnic University of Puerto Rico (PUPR). This issue had both positive and negative

connotations. In one hand, the study provided a thorough description of the socialization preferences of college students enrolled in this institution of higher education. However, this same issue limits the generalizability of the study results. Hence, I recommend future researchers who intend to replicate the study to use a broader population. Also, future researchers should not limit the characteristics of the sample to college students. Instead, I would include any members from different industries, occupations, generations, and locations, to build a more representative sample and, as a result, collect stronger data and produce robust results.

Second, I would also include a qualitative component to this study to further assess socialization processes. Qualitative researchers collect data through in-depth, open-ended interviews that produce information about participants' experiences, opinions, feelings, and knowledge (Dorantes & Low, 2016; Hussain, Salia, & Karim, 2018; Patton, 2014). Qualitative studies also provide the setting to collect data through observations, behaviors, and a full range of interpersonal interactions, allowing researchers to understand phenomena through people's activities (Hussain et al., 2018; Patton, 2014). In contrast, the cross-sectional design limits the assessment of causal relationships between the variables of the study. Since the data collected in this study consisted of self-reported measures, it is important to mention that people may be biased when reporting their own experiences. The combination of cross-sectional, self-reported data with qualitative data that documents interpersonal interactions would produce a more accurate description of the financial experiences of the sample.

Final Summary

The outcomes of this study highlighted how the participants of this study preferred to interact with parents to obtain financial knowledge, followed by media. Likewise, respondents reported that parents had the most influence on their financial decisions, also followed by media. In all cases, the frequency of exposure to the socialization agents did not play a significant role in the financial knowledge of participants. These findings agree with the theoretical framework of the study and with many researchers reviewed in the literature.

However, parents did not appear as an effective source of information among respondents. In general, study participants failed the financial knowledge component of the survey, getting an average score of 39%. Maybe, low financial literacy levels is an intergenerational issue that is transmitted over the years without much attention or managing. Perhaps, people ignore that they lack the necessary financial skills to participate in the financial system actively and improve their financial wellbeing. It is no secret that Puerto Ricans could experience a significant benefit from participating in the financial markets if they improve their financial literacy.

The results of this study may not represent the general population currently living in Puerto Rico. However, this study brings an opportunity to continue the discussion of financial literacy levels among Puerto Ricans. After assessing the outcomes of the study, I identified the need to start a conversation on the significant role that parents play as financial socialization agents in Puerto Rican society. More importantly, researchers, educators, policy makers, and even individuals interested in improving their financial

knowledge must identify strategies to capitalize on their position as parents to further transmit positive financial behaviors to future generations.

This study did not fully clarify the social learning processes that Puerto Ricans employ to acquire and transmit financial knowledge and behaviors. The identification of information sources is only the first step into bigger, deeper, and broader research studies to understand island Puerto Ricans as a focus group. Further understanding requires the assessment of historical, social, cultural, political, and economic complexities that Puerto Ricans live and deal with every day. All these fields and areas of study offer different lenses to inquire about the financial socialization practices of Puerto Ricans. Moreover, studying the socialization experiences of Puerto Ricans from all these perspectives may lead to a kaleidoscopic view of the complex financial processes that separate Puerto Ricans from other ethnic groups.

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Appendix A: Survey

College Student Financial Literacy Survey

INFLUENCES

1. **What sources of information do you use to learn about money management? (Check all that apply)**
   ☐ Parents or guardian (including grandparents)
   ☐ Peers or friends
   ☐ School (including seminars, workshops, or professional counseling)
   ☐ Mass media (including television, radio, newspaper, books, internet, and social media)

2. **Rate the following influences on a scale of 1 through 5 (1 = Unimportant, 2 = Of little importance, 3 = Moderately important, 4 = Important, 5 = Very important). How important were the following information sources for you to learn about managing your money:**
   Parents or guardian (including grandparents)
   　☐1　☐2　☐3　☐4　☐5
   Peers or friends
   　☐1　☐2　☐3　☐4　☐5
   School (including seminars, workshops, or professional counseling)
   　☐1　☐2　☐3　☐4　☐5
   Mass media (including television, radio, newspaper, books, internet, and social media)
   　☐1　☐2　☐3　☐4　☐5

3. **Rate the following on a scale of 1 through 5 (1 = Never, 2 = Rarely, 3 = Occasionally, 4 = Frequently, 5 = Very Frequently).**
   How often were you influenced by or did you discuss finances with the following:
   Parents or guardian (including grandparents)
   ☐1　☐2　☐3　☐4　☐5
   Peers or friends
   ☐1　☐2　☐3　☐4　☐5
   School (including seminars, workshops, or professional counseling)
   ☐1　☐2　☐3　☐4　☐5
   Mass media (including television, radio, newspaper, books, internet, and social media)
   ☐1　☐2　☐3　☐4　☐5

FINANCIAL KNOWLEDGE

4. **Net worth is:**
   ☐ 1. The difference between expenditures and income
   ☐ 2. The difference between liabilities and assets
   ☐ 3. The difference between cash inflow and outflow
   ☐ 4. The difference between borrowings and savings
   ☐ 5. None of the above

5. **In which year after a car is bought does it lose its value the fastest?**
   ☐ 1. First Year
   ☐ 2. Second year
   ☐ 3. Fourth year
   ☐ 4. Seventh year

6. **Which account usually pays the MOST interest?**
   ☐ 1. Certificate of deposit (CD)
   ☐ 2. Savings account
   ☐ 3. Checking account
   ☐ 4. Money Market account

7. **When a check bounces, who, if anyone, is usually charged a fee?**
   ☐ 1. The check writer only
   ☐ 2. The person to whom the check is written only
   ☐ 3. Neither the check writer nor the person to whom the check is written
   ☐ 4. Both the check writer and the person to whom the check is written

8. **Rob and Molly are the same age. At age 25 Rob began saving $2,000 a year for 10 years and then stopped at age 35. At age 35, Molly realized that she needed money for retirement and started saving $2,000 per year for 30 years and then stopped at age 65. Now they are both 65 years old. Who has the most money in his or her retirement account (assume both investments had the same interest rate)?**
   ☐ 1. Molly, because she saved more money overall
   ☐ 2. Rob, because his money has grown for longer period of time
   ☐ 3. They would each have about the same amount
   ☐ 4. Unable to determine with information provided

9. **If you signed a 12-month lease for $300 /month but never occupied the apartment, you legally owe the landlord**

☐ 1. Your security deposit
☐ 2. Your first month's rent of $300
☐ 3. Your twelve-month's rent of $3,600
☐ 4. Nothing
☐ 5. Whatever the landlord wants

10. The MOST important factors that lender use when deciding whether to approve a loan are
☐ 1. Marital status and number of children
☐ 2. Education and occupation
☐ 3. Age and gender
☐ 4. Bill-paying record and income

11. If you cosign a loan for a friend, then you
☐ 1. Become eligible to receive part of the loan principal
☐ 2. Vouch for the friend's reliability but have no legal obligation for the loan
☐ 3. Are responsible for repaying the loan if the friend defaults
☐ 4. Are in a better position to get a personal loan

12. If a consumer fails to pay personal debts, a creditor is allowed to do all of the following EXCEPT
☐ 1. Discuss the consumer's debts with his or her employer
☐ 2. Bring suit against the consumer
☐ 3. Tell a credit bureau that the account is delinquent
☐ 4. Turn the account over to a professional debt collector

13. All of the following are TRUE of bankruptcies except:
☐ 1. It is more difficult to get a low interest rate loan
☐ 2. It will stay on your credit for ten years
☐ 3. Any loan you receive will have a higher interest rate due to the bankruptcy
☐ 4. For all types of bankruptcies you are released from all your debt

14. What does a credit bureau do?
☐ 1. Approves applications for credit
☐ 2. Informs applicants of the reasons for denial of credit
☐ 3. Extends credit to qualified applicants
☐ 4. Provides creditors with reports of consumers' bill-paying records

15. The owner of a credit card that is lost or stolen is legally responsible for
☐ 1. Any unauthorized charges

☐ 2. Any unauthorized charges until the loss or theft is reported

☐ 3. Only the first $50 of any unauthorized charges

☐ 4. Only the first $500 of any unauthorized charges

☐ 5. No unauthorized charges

16. If a credit card account has a balance carried over from the previous month, when will interest charges usually begin on a new credit purchase?

☐ 1. On the day of the purchase

☐ 2. One month after the date of the purchase

☐ 3. After a 2-week grace period

☐ 4. After a 2-month grace period

17. Your take home pay for your job is less than the total amount you earn. Which of the following best describes what is taken out of your total pay?

☐ 1. Federal income tax, property tax, and Medicare and social security contributions

☐ 2. Social security and Medicare contributions

☐ 3. Federal income tax, social security and Medicare contributions

☐ 4. Federal income tax, sales tax, and social security contribution

☐ 5. Federal income tax, social security, Medicare contributions, state and local taxes

18. Is a $500 tax credit or a $500 tax deduction more valuable to you?

☐ 1. A $500 tax credit

☐ 2. A $500 tax deduction

☐ 3. They are the same

☐ 4. Depends on your tax bracket

19. Assume you are in your early twenties and you would like to build up your nest egg for a secure retirement in 30 years. Which of the following approaches would best meet your needs?

☐ 1. Start to build up your savings account gradually in an insured bank

☐ 2. Save money in certificate of deposit accounts

☐ 3. Put monthly savings in a diversified growth mutual fund

☐ 4. Invest in long-term Treasury bonds

☐ 5. Accumulate money in a safe-box rented from a local bank

20. Which of the following combination of investments is most risky?

☐ 1. A mutual fund containing 80% stocks and 20% bonds

☐ 2. A mutual fund containing 80% bonds and 20% stocks

☐ 3. An index fund (like the S&P 500)

☐ 4. Stock in a single company

21. Hector and Maria just had a baby. They received money as baby gifts and want to put it away for the baby's education. Which of the following tends to have the highest growth over periods of time as long as 18 years?

☐ 1. A U.S. Government savings bond

☐ 2. Stocks and mutual funds

☐ 3. A savings account

☐ 4. A money market account

22. Many people put aside money to take care of unexpected expenses. If Susan and Joe 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?

☐ 1. Savings account

☐ 2. A house

☐ 3. Stocks

☐ 4. Checking account

23. If an auto insurance policy has bodily injury limits of $100,000/$300,000, the insured person is covered for

☐ 1. Up to $100,000 for each accident but no more than $300,000 for the life of the policy

☐ 2. Up to $100,000 for medical bills but no more than $300,000 for hospital costs

☐ 3. Up to $100,000 for each person injured but no more than $300,000 for each accident

☐ 4. Up to $100,000 for people in the insured auto but no more than $300,000 for people outside the insured auto

24. Choose the type of insurance coverage (l. liability, 2. comprehensive, 3. collision, 4. uninsured motorist) that pays for the following:

a. The replacement of a stolen car

　　☐ 1. liability　☐ 2. comprehensive　☐ 3. collision　☐ 4. uninsured motorist

b. A loss resulting from a lawsuit

　　☐ 1. liability　☐ 2. comprehensive　☐ 3. collision　☐ 4. uninsured motorist

c. Damage to our own car from an accident caused by you

　　☐ 1. liability　☐ 2. comprehensive　☐ 3. collision　☐ 4. uninsured motorist

25. The main reason to purchase insurance is to

☐ 1. Protect you from a loss recently incurred

☐ 2. Provide you with excellent investment returns

☐ 3. Protect you from sustaining a catastrophic loss

☐ 4. Protect you from small incidental losses

☐ 5. Improve your standard of living by filing fraudulent claims

26. Assume you are in your twenties, don't have a lot of money, are married and have one child. Assuming you already have disability insurance through your employment, which of the following would you do regarding your life insurance?
☐ 1. You would buy a term insurance policy
☐ 2. You probably do not need to buy any life insurance policy
☐ 3. You would buy flight insurance each time you travel by air
☐ 4. You would buy a cash value insurance policy

27. The owner of a bank debit card that is lost or stolen is legally responsible for
☐ 1. Any unauthorized charges
☐ 2. Any unauthorized charges until the loss or theft is reported
☐ 3. Only the first $50 of any unauthorized charges
☐ 4. Only the first $500 of any unauthorized charges
☐ 5. No unauthorized charges

28. Which of the following cannot legally access your credit report?
☐ 1. Creditors
☐ 2. Employers
☐ 3. Apartment rental agencies
☐ 4. Insurance companies
☐ 5. All of the above can access your credit report

THANK YOU FOR ANSWERING THE FINANCIAL QUESTIONS. PLEASE ANSWER THE FINAL GENERAL QUESTIONS BELOW.
a. What is your gender?
☐ Male ☐ Female

b. What is your age?
☐ 18-22 ☐ 23-29 ☐ 30-39 ☐ 40-59 ☐ 60 or older

c. What is your academic standing?
☐ First-year (Freshman)
☐ Sophomore
☐ Junior
☐ Senior
☐ Masters student
☐ Doctoral student

d. What is your major field of study?
☐ Business
☐ Agriculture and Life Sciences
☐ Education
☐ Liberal Arts
☐ Human Sciences
☐ Science
☐ Engineering
☐ Medicine
☐ Law
☐ Other:

e. Which best describes your or your parents income last year?
☐ 0-$34,999
☐ $35,000-$49,999
☐ $50,000-$79,999
☐ $80,000 or more
☐ Don't Know

f. Where do you attend school?

Appendix B: Spanish Survey

Encuesta sobre el conocimiento financiero de estudiantes universitarios

INFLUENCIAS

1. **¿Qué fuentes de información usted usa para aprender sobre el manejo de dinero? (Marque todas los que aplican)**
   ☐ Padres o tutor (incluidos los abuelos)
   ☐ Pares o amigos
   ☐ Escuela (incluidos seminarios, talleres y asesoramiento profesional)
   ☐ Medios de comunicación (incluidos televisión, radio, periódicos, libros, internet y redes sociales)

2. **Clasifique las influencias a continuación usando una escala del 1 al 5 (1 = No es importante, 2 = Poco importante, 3 = Moderadamente importante, 4 = Importante, 5 = Muy importante).**
   ¿Cuán importantes fueron las siguientes fuentes de información en su aprendizaje sobre el manejo de dinero?
   Padres o tutor (incluidos los abuelos)
   　☐1　☐2　☐3　☐4　☐5
   Pares o amigos
   　☐1　☐2　☐3　☐4　☐5
   Escuela (incluidos seminarios, talleres y asesoramiento profesional)
   　☐1　☐2　☐3　☐4　☐5
   Medios de comunicación (incluidos televisión, radio, periódicos, libros, internet y redes sociales)
   　☐1　☐2　☐3　☐4　☐5

3. **Clasifique lo siguiente usando una escala del 1 al 5 (1 = Nunca, 2 = Raras veces, 3 = Ocasionalmente, 4 = Frecuentemente, 5 = Muy frecuentemente).**
   Cuán a menudo usted fue influenciado o discutió las finanzas en los siguientes contextos:
   Padres o tutor (incluidos los abuelos)
   ☐1　☐2　☐3　☐4　☐5
   Pares o amigos
   ☐1　☐2　☐3　☐4　☐5
   Escuela (incluidos seminarios, talleres y asesoramiento profesional)
   ☐1　☐2　☐3　☐4　☐5
   Medios de comunicación (incluidos televisión, radio, periódicos, libros, internet y redes sociales)
   ☐1　☐2　☐3　☐4　☐5

CONOCIMIENTO FINANCIERO

4. **El patrimonio neto es:**
   ☐ 1. La diferencia entre los gastos y el ingreso
   ☐ 2. La diferencia entre los pasivos y los activos
   ☐ 3. La diferencia entre los flujos de entrada y salida de efectivo
   ☐ 4. La diferencia entre los préstamos y los ahorros
   ☐ 5. Ninguna de las anteriores

5. **Después de comprar un auto, ¿en qué año este pierde valor con mayor rapidez?**
   ☐ 1. Primer año
   ☐ 2. Segundo año
   ☐ 3. Cuarto año
   ☐ 4. Séptimo año

6. **¿Cuál cuenta usualmente paga MÁS intereses?**
   ☐ 1. Certificado de depósito (CD)
   ☐ 2. Cuenta de ahorros
   ☐ 3. Cuenta corriente
   ☐ 4. Cuenta del mercado monetario

7. **Cuando se gira un cheque sin fondos, ¿quién, si alguien, usualmente tiene que pagar un cargo?**
   ☐ 1. Solamente la persona que giró el cheque
   ☐ 2. Solamente la persona a quien se le pagó el cheque
   ☐ 3. Ni el emisor ni el receptor del cheque
   ☐ 4. Tanto el emisor como el receptor del cheque

8. **Rob y Molly tienen la misma edad. A los 25 años, Rob comenzó a ahorrar $2,000 al año. Lo hizo durante 10 años y se detuvo a los 35. A los 35 años, Molly se percató de que necesitaba dinero para su jubilación y comenzó a ahorrar $2,000 al año. Lo hizo durante 30 años y se detuvo a los 65. Ahora ambos tienen 65 años. ¿Quién tiene más dinero en su cuenta de jubilación (presume que ambas inversiones tenían la misma tasa de interés)?**
   ☐ 1. Molly, porque ella ahorró más dinero en total
   ☐ 2. Rob, porque su dinero ha crecido durante un periodo más largo
   ☐ 3. Ambos tienen aproximadamente la misma cantidad
   ☐ 4. No se puede determinar con la información provista

9. **Si firmó un contrato de alquiler de 12 meses por la suma de $300 al mes pero nunca ocupó el apartamento, usted le debe al arrendador**

☐ 1. La fianza

☐ 2. El pago de $300 del primer mes de renta

☐ 3. El pago de $3,600 por los doce meses de renta

☐ 4. Nada

☐ 5. Lo que el arrendador quiera

10. Los factores MÁS importantes que los prestamistas toman en cuenta al momento de decidir si aprobar un préstamo son:

☐ 1. Estado civil y cantidad de hijos

☐ 2. Educación y ocupación

☐ 3. Edad y sexo

☐ 4. Historial crediticio e ingresos

11. Si es codeudor(a) en el préstamo de un(a) amigo(a), entonces usted

☐ 1. Es elegible para recibir parte del principal del préstamo

☐ 2. Avala la fiabilidad de su amigo pero no tiene ninguna obligación legal en cuanto al préstamo

☐ 3. Es responsable del repago del préstamo si su amigo incumple con el pago

☐ 4. Está en una mejor posición para obtener un préstamo personal

12. Si un consumidor no paga sus deudas personales, un acreedor puede hacer todo lo que sigue EXCEPTO:

☐ 1. Discutir las deudas del consumidor con su patrono

☐ 2. Presentar una demanda contra el consumidor

☐ 3. Informar a una agencia de crédito que la cuenta es morosa

☐ 4. Entregar la cuenta a un cobrador profesional

13. Todo lo que sigue es CIERTO sobre las quiebras excepto que:

☐ 1. Es más difícil conseguir un préstamo de bajo interés

☐ 2. Permanecerá en su crédito durante diez años

☐ 3. Cualquier préstamo que reciba tendrá una mayor tasa de interés debido a la quiebra

☐ 4. Para todo tipo de quiebras usted queda eximido de la totalidad de su deuda

14. ¿Qué hacen las agencias de crédito?

☐ 1. Aprueban las solicitudes de crédito

☐ 2. Informan a los solicitantes sobre las razones de la denegación de crédito

☐ 3. Otorgan crédito a los solicitantes que cualifiquen

☐ 4. Proveen a los acreedores informes del historial crediticio de los consumidores

15. El dueño de una tarjeta de crédito perdida o robada es legalmente responsable de

☐ 1. Cualquier cargo no autorizado

☐ 2. Cualquier cargo no autorizado hasta que se informe la pérdida o el robo

☐ 3. Solamente los primeros $50 de los cargos no autorizados

☐ 4. Solamente los primeros $500 de los cargos no autorizados

☐ 5. Ningún cargo no autorizado

16. Si una tarjeta de crédito tiene un balance transferido del mes anterior, ¿cuándo, generalmente, comienzan los intereses por una nueva compra a crédito?

☐ 1. El día de la compra

☐ 2. Un mes después de la fecha de la compra

☐ 3. Después de un periodo de gracia de 2 semanas

☐ 4. Después de un periodo de gracia de 2 meses

17. Su salario neto es menor que la cantidad total que gana. ¿Cuál de las siguientes alternativas describe mejor las deducciones hechas a su salario total?

☐ 1. Impuesto sobre ingresos, impuesto sobre la propiedad inmueble y contribuciones a Medicare y el seguro social

☐ 2. Contribuciones al seguro social y Medicare

☐ 3. Impuesto sobre ingresos, contribuciones al seguro social y Medicare

☐ 4. Impuesto sobre ingresos, impuesto sobre las ventas y contribuciones al seguro social

☐ 5. Impuesto sobre ingresos, seguro social, contribuciones a Medicare, impuestos estatales y locales

18. ¿Qué es más valioso para usted: un crédito contributivo de $500 o una deducción contributiva de $500?

☐ 1. Un crédito contributivo de $500

☐ 2. Una deducción contributiva de $500

☐ 3. Son lo mismo

☐ 4. Depende de su categoría tributaria

19. Presuma que usted tiene poco más de veinte años y desea crear su reserva de fondos para una jubilación segura en 30 años. ¿Cuál de los siguientes métodos satisfaría mejor sus necesidades?

☐ 1. Comenzar a fortalecer gradualmente su cuenta de ahorros en un banco asegurado

☐ 2. Ahorrar dinero en cuentas de certificado de depósito

☐ 3. Invertir los ahorros mensuales en un fondo mutuo de crecimiento diversificado

☐ 4. Invertir en bonos del Tesoro a largo plazo

☐ 5. Acumular dinero en una caja fuerte rentada de un banco local

20. ¿Cuál de las siguientes combinaciones de inversiones es la más riesgosa?

☐ 1. Un fondo mutuo con un 80% en acciones y un 20% en bonos

☐ 2. Un fondo mutuo con un 80% en bonos y un 20% en acciones

☐ 3. Un fondo índice (como el S&P 500)

☐ 4. Acciones en una sola compañía

21. Héctor y María acaban de tener un bebé. Recibieron dinero como un regalo al bebé y quieren guardarlo para la educación del bebé. ¿Cuál de las siguientes alternativas usualmente tiene el mayor crecimiento durante periodos de hasta 18 años?

☐ 1. Un bono de ahorros del Gobierno de los EE. UU.

☐ 2. Las acciones y los fondos mutuos

☐ 3. Una cuenta de ahorros

☐ 4. Una cuenta del mercado monetario

22. Muchas personas guardan dinero para cubrir gastos inesperados. Si Susan y Joe han guardado dinero para emergencias, ¿cuál de las siguientes formas sería la MENOS beneficiosa para hacerlo si necesitaran el dinero de inmediato?

☐ 1. Cuenta de ahorros

☐ 2. Una casa

☐ 3. Acciones

☐ 4. Cuenta corriente

23. Si una póliza de seguro de auto tiene un límite de $100,000/$300,000 para lesiones corporales, la persona asegurada tiene una cobertura de

☐ 1. Hasta $100,000 por cada accidente pero no más de $300,000 por la duración de la póliza

☐ 2. Hasta $100,000 para gastos médicos pero no más de $300,000 para costos de hospital

☐ 3. Hasta $100,000 por cada persona herida pero no más de $300,000 por cada accidente

☐ 4. Hasta $100,000 para las personas en el auto asegurado pero no más de $300,000 para las personas que no estaban en el auto asegurado

24. Elija el tipo de cobertura de seguro (1. cobertura de responsabilidad, 2. cobertura integral, 3. cobertura contra colisión, 4. cobertura contra conductores no asegurados) que paga por lo siguiente:

a. El reemplazo de un auto robado

☐ 1. cobertura de responsabilidad ☐ 2. cobertura integral ☐ 3. cobertura contra colisión ☐ 4. cobertura contra conductores no asegurados

b. Una pérdida resultado de una demanda

☐ 1. cobertura de responsabilidad ☐ 2. cobertura integral ☐ 3. cobertura contra colisión ☐ 4. cobertura contra conductores no asegurados

c. Daño a su auto por un accidente causado por usted

☐ 1. cobertura de responsabilidad ☐ 2. cobertura integral ☐ 3. cobertura contra colisión ☐ 4. cobertura contra conductores no asegurados

25. La razón principal para adquirir un seguro es

☐ 1. Protegerse de una pérdida en la que haya incurrido recientemente

☐ 2. Conseguir un excelente rendimiento de inversión

☐ 3. Protegerse de sufrir una pérdida catastrófica

☐ 4. Protegerse de pérdidas incidentales pequeñas

☐ 5. Mejorar su nivel de vida presentando reclamaciones fraudulentas

26. Presuma que tiene poco más de veinte años, no tiene mucho dinero, está casado(a) y tiene un(a) hijo(a). Partiendo de la premisa de que ya tiene un seguro por incapacidad mediante su empleo, ¿qué haría en cuanto a su seguro de vida?

☐ 1. Compraría una póliza de seguro a término

☐ 2. Probablemente no necesita comprar una póliza de seguro de vida

☐ 3. Compraría un seguro de vuelo cada vez que viaje en avión

☐ 4. Compraría una póliza de seguro con valor en efectivo

27. El dueño de una tarjeta de débito perdida o robada es legalmente responsable de

☐ 1. Cualquier cargo no autorizado

☐ 2. Cualquier cargo no autorizado hasta que se informe la pérdida o el robo

☐ 3. Solamente los primeros $50 de los cargos no autorizados

☐ 4. Solamente los primeros $500 de los cargos no autorizados

☐ 5. Ningún cargo no autorizado

28. ¿Quiénes no pueden acceder a su informe de crédito legalmente?

☐ 1. Acreedores

☐ 2. Empleadores

☐ 3. Agencias de alquiler de apartamentos

☐ 4. Compañías de seguros

☐ 5. Todos los anteriores pueden acceder a su informe de crédito

GRACIAS POR RESPONDER LAS PREGUNTAS FINANCIERAS. POR FAVOR, RESPONDA LAS PREGUNTAS GENERALES FINALES A CONTINUACIÓN.

a. **¿Cuál es su sexo?**

☐ Masculino   ☐ Femenino

b. **¿Cuántos años tiene?**

☐ 18-22   ☐ 23-29   ☐ 30-39   ☐ 40-59   ☐ 60 o más

c. **¿Cuál es su nivel académico?**

☐ Primer año

☐ Segundo año

☐ Tercer año

☐ Cuarto año

☐ Estudiante de maestría

☐ Estudiante de doctorado

d. **¿Cuál es su campo de estudio principal?**

☐ Negocios

☐ Agricultura y Ciencias biológicas

☐ Educación

☐ Artes liberales

☐ Ciencias humanas

☐ Ciencias

☐ Ingeniería

☐ Medicina

☐ Derecho

☐ Otro:

e. **¿Cuál alternativa se acerca más a su ingreso o al ingreso de sus padres del año pasado?**

☐ 0-$34,999

☐ $35,000-$49,999

☐ $50,000-$79,999

☐ $80,000 o más

☐ Desconozco

f. **¿En qué universidad estudia?**

Appendix C: IRB Approval Number

11-16-18-0234939

Appendix D: College Student Financial Literacy Survey Approval Request

Approval request to use the College Student Financial Literacy Survey (CSFLS) for a doctoral study

EA
Enid Alvarez
Reply all |
Thu 12/14/2017, 3:36 PM
Bryce Jorgensen;
Steven C. Tippins
Sent Items

Dr. Jorgensen,

Thank you so much. I will keep you posted about what instrument I'll use and the outcomes of the study.

Best regards,

Enid

BJ
Bryce Jorgensen
Thu 12/14/2017, 12:15 PM
Show all 6 attachments (2 MB) Download all
Save all to OneDrive - Laureate Education

Hi Enid,

You are welcome to use the CSFLS (the answers to the knowledge questions are attached). I have also included my updated survey – the EAFCS, along with some other helpful attachments. You are welcome to use part or all of either survey. I would appreciate an update on how it is going once you decide what to use. An explanation of my survey and research is included below in an email I sent to another who requested use of the survey. Please let me know if you have any questions.

Warm regards,
Bryce Jorgensen

EA

Enid Alvarez

|

Thu 12/14/2017, 3:25 AM

December 13, 2017

Bryce Jorgensen, Ph.D.
Extension Specialist/Family Res. Mgmt
College of Agricultural, Consumer, and Environmental Sciences
New Mexico State University

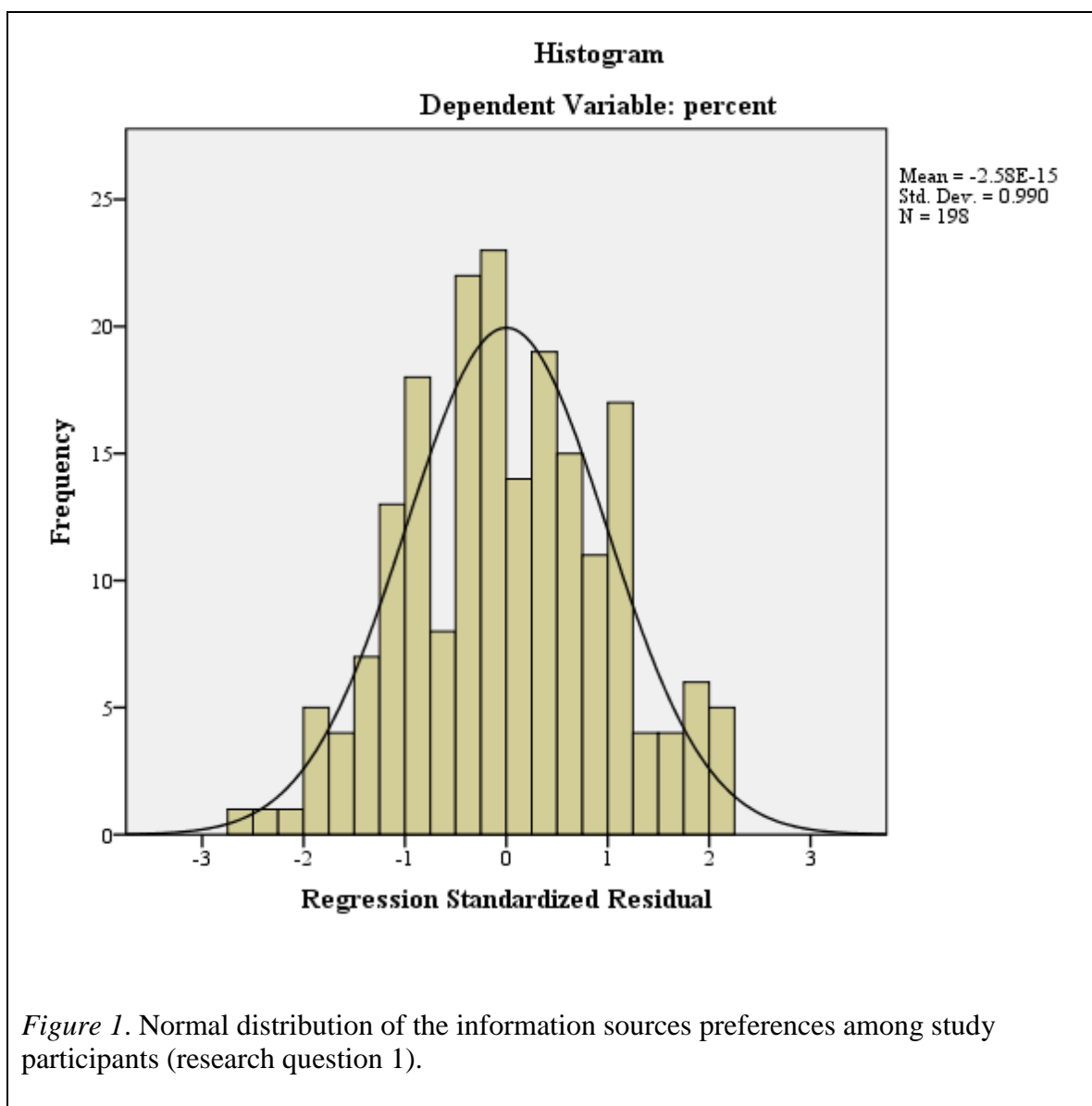**Re: College Student Financial Literacy Survey (CSFLS)**

Dear Dr. Jorgensen,

My name is Enid Álvarez. I am a doctoral student at Walden University. I am currently working on my dissertation proposal in which I intend to assess the information sources that Puerto Rican students use to inform their financial decisions. After a thorough examination, I found that the College Student Financial Literacy Survey (CSFLS) that you developed back in 2006 fits the needs of my study. Your survey includes all the variables I will examine in my research, and I am sure it will help me gather precise and thoughtful data.
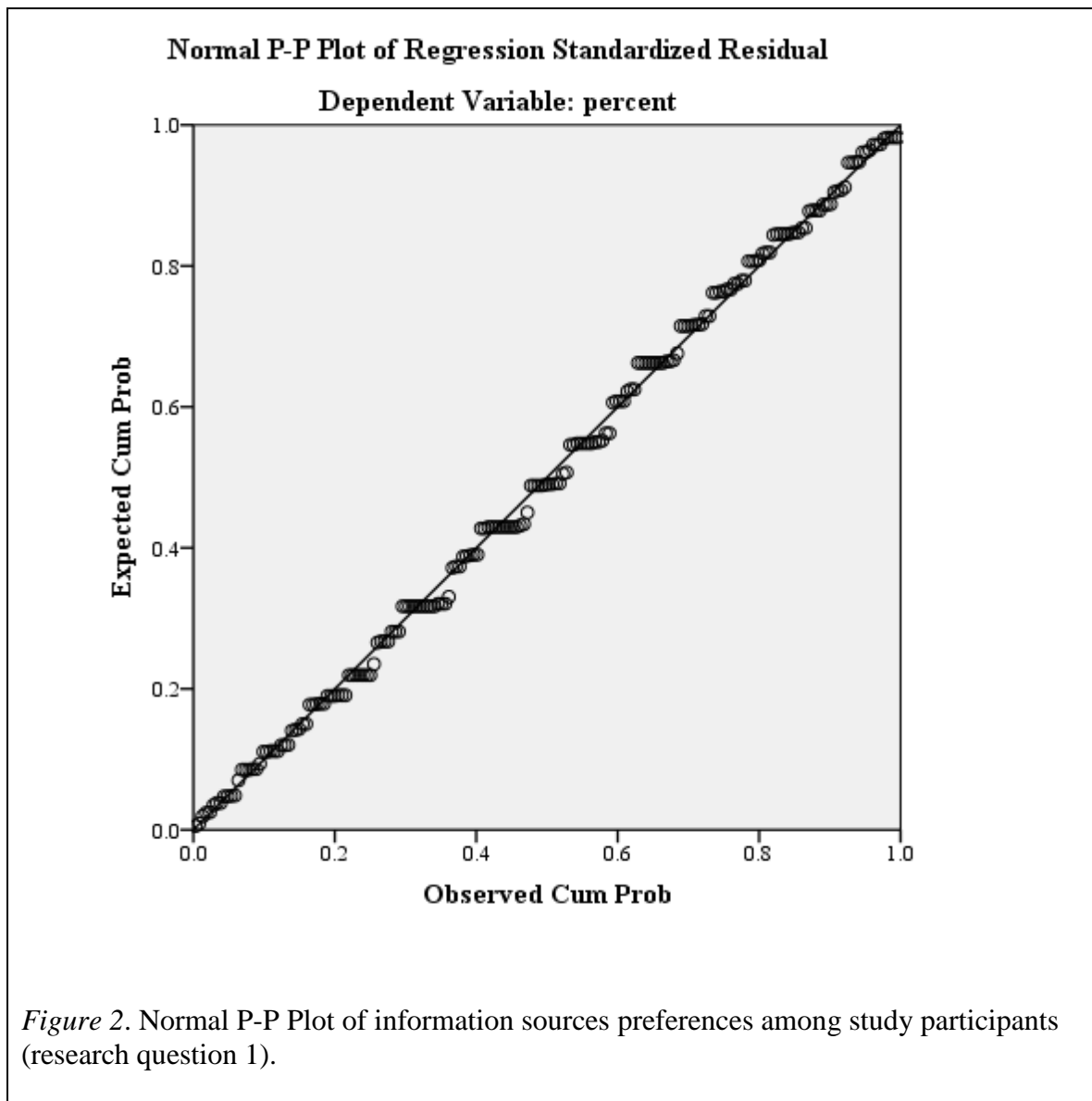
Please, let me know if you have any reservation for me to use the CSFLS survey for my research. In case you need further information, do not hesitate to contact me at enid.alvarez@waldenu.edu.
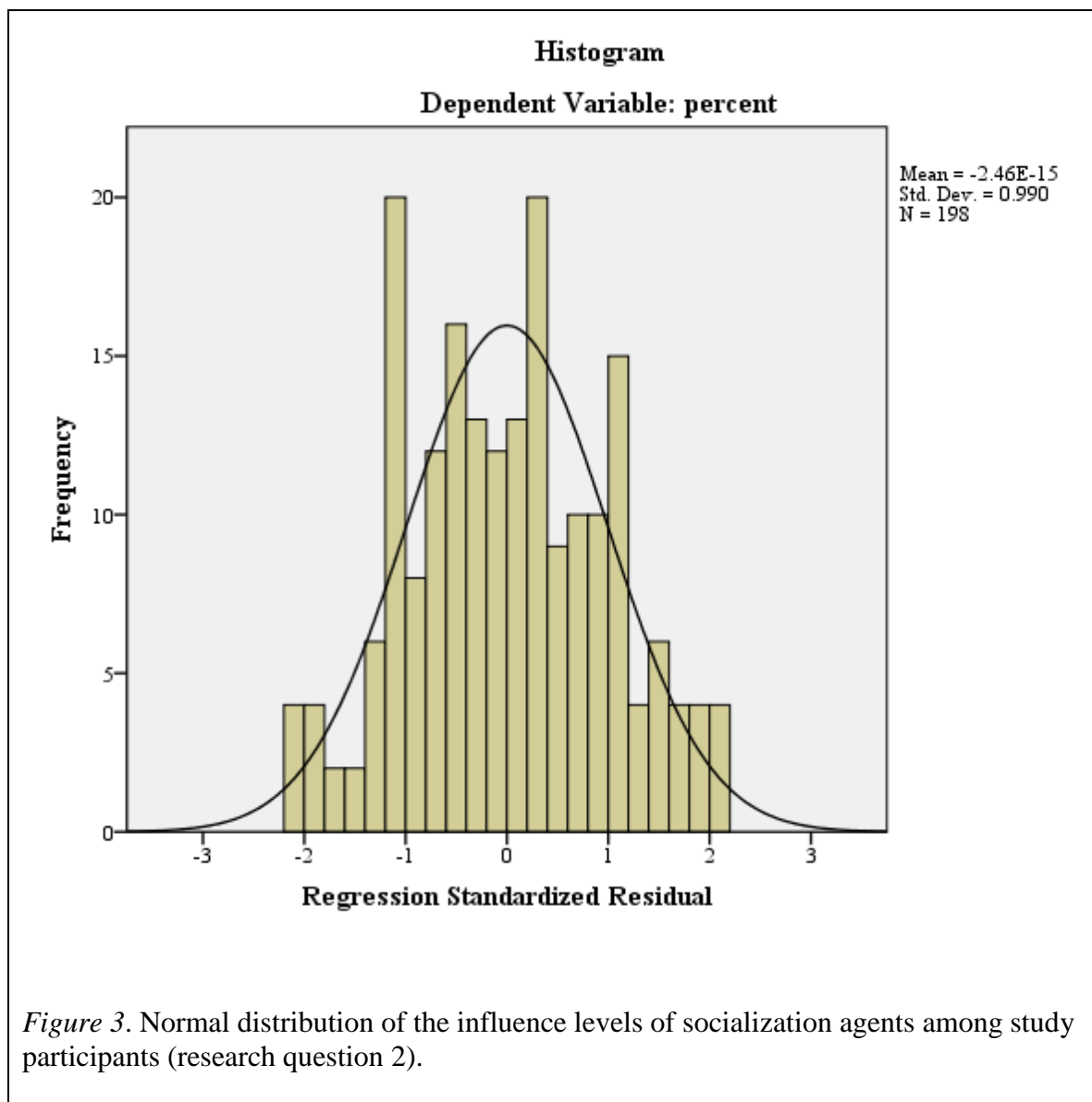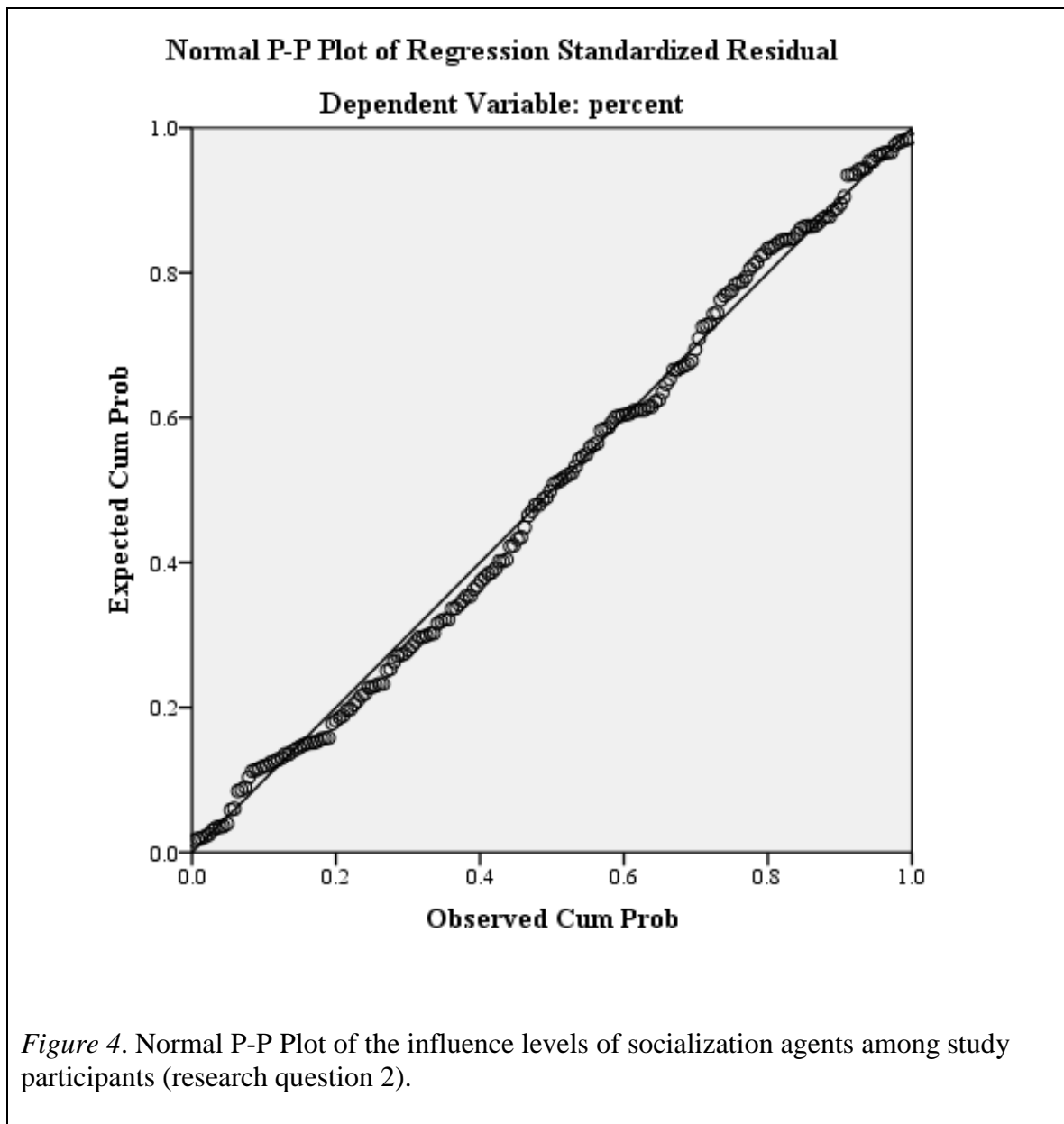
Respectfully,

Enid Álvarez
Ph.D. Candidate
Walden University

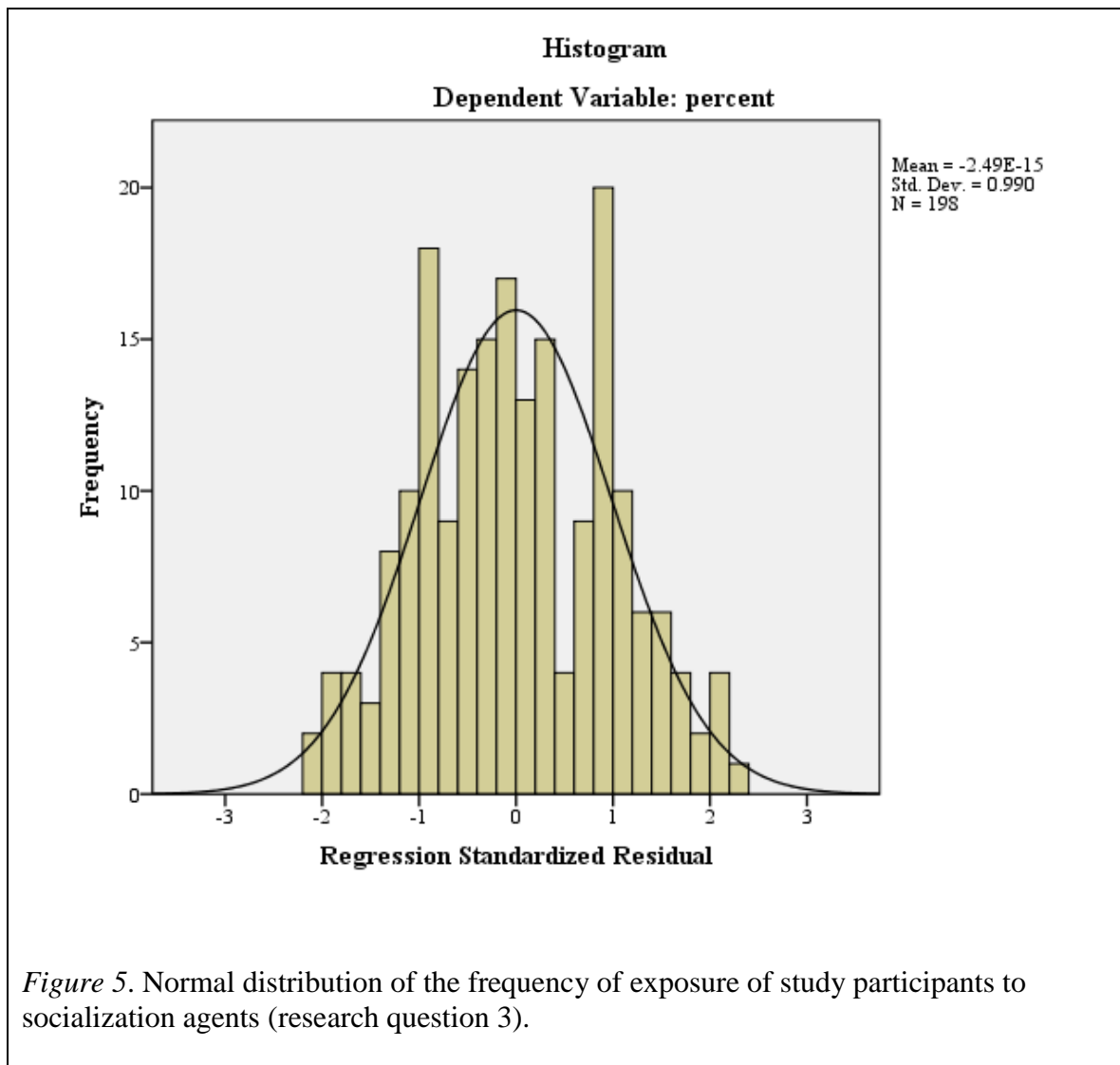Appendix E: Histograms to Test Data Normality

Figure 1. Normal distribution of the information sources preferences among study participants (research question 1).

Figure 2. Normal P-P Plot of information sources preferences among study participants (research question 1).

Figure 3. Normal distribution of the influence levels of socialization agents among study participants (research question 2).

Figure 4. Normal P-P Plot of the influence levels of socialization agents among study participants (research question 2).
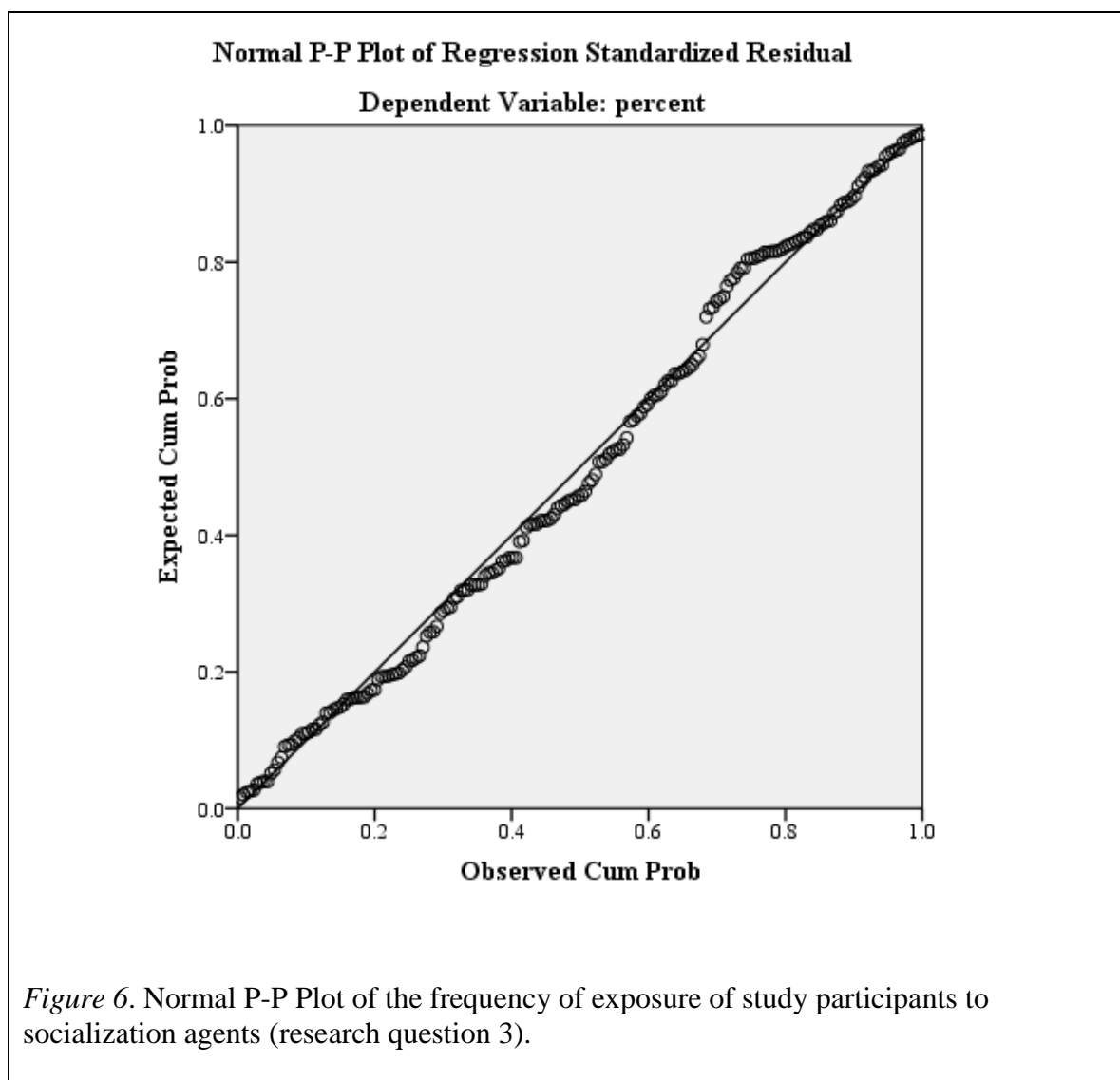
Figure 5. Normal distribution of the frequency of exposure of study participants to socialization agents (research question 3).
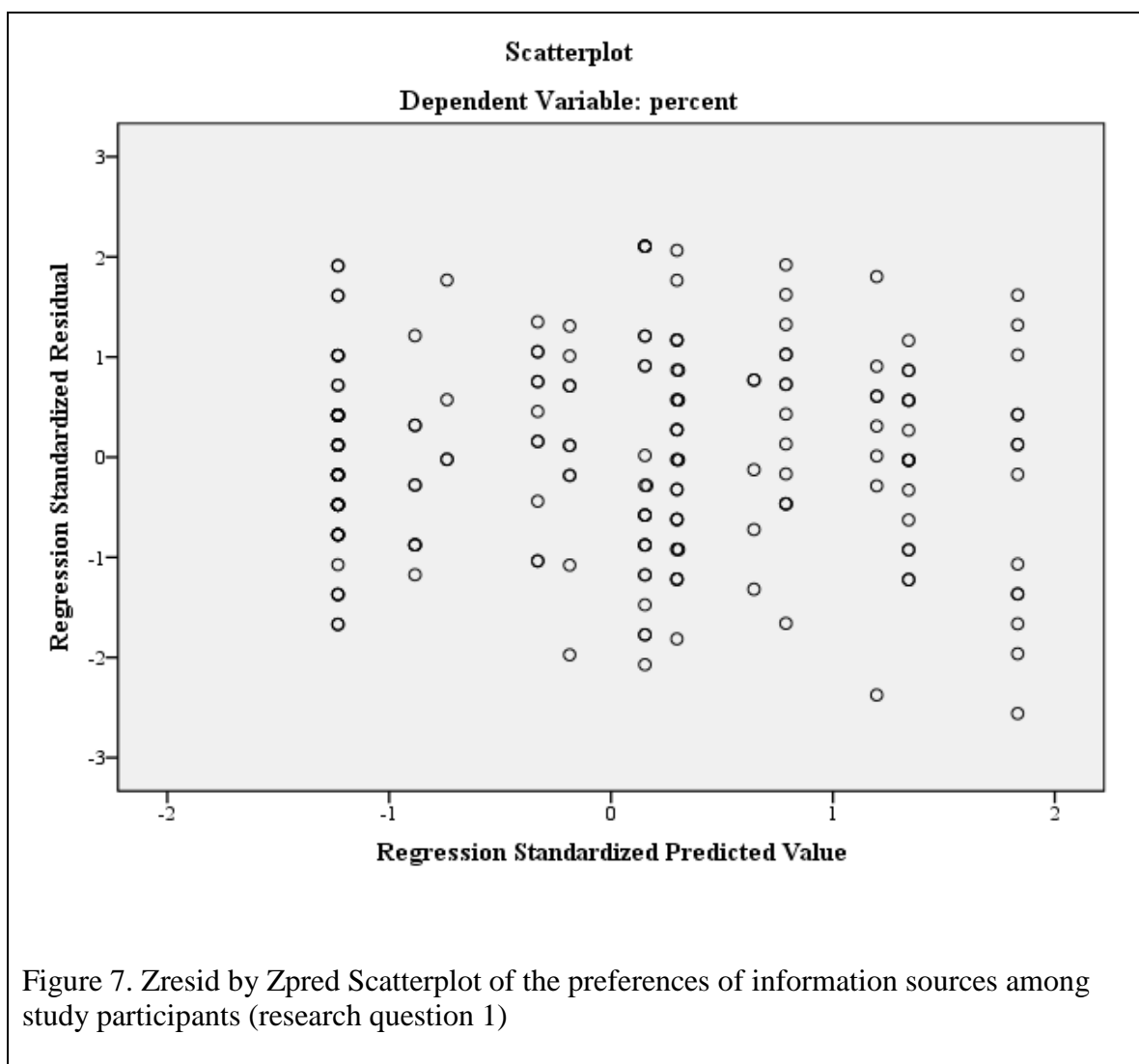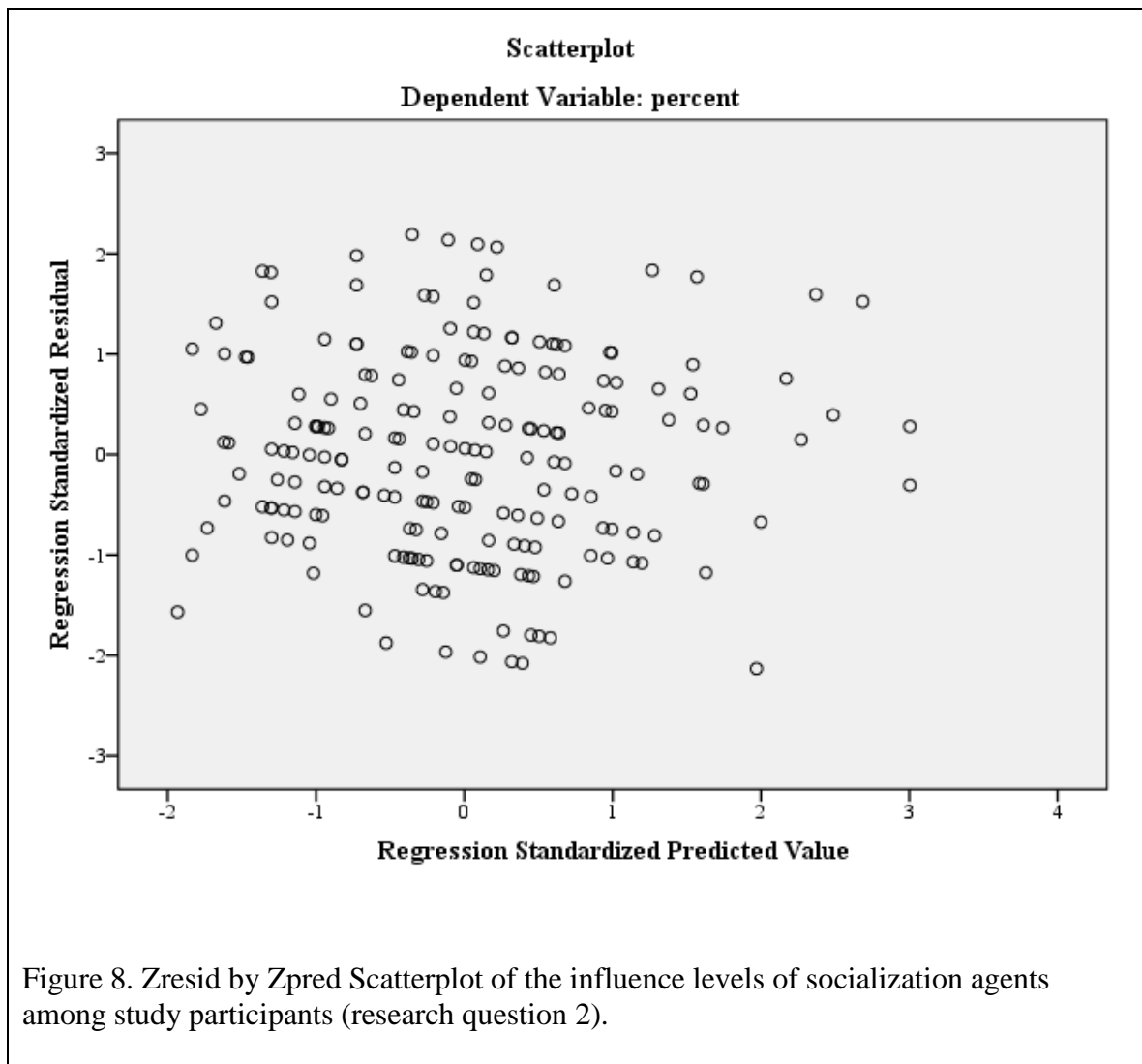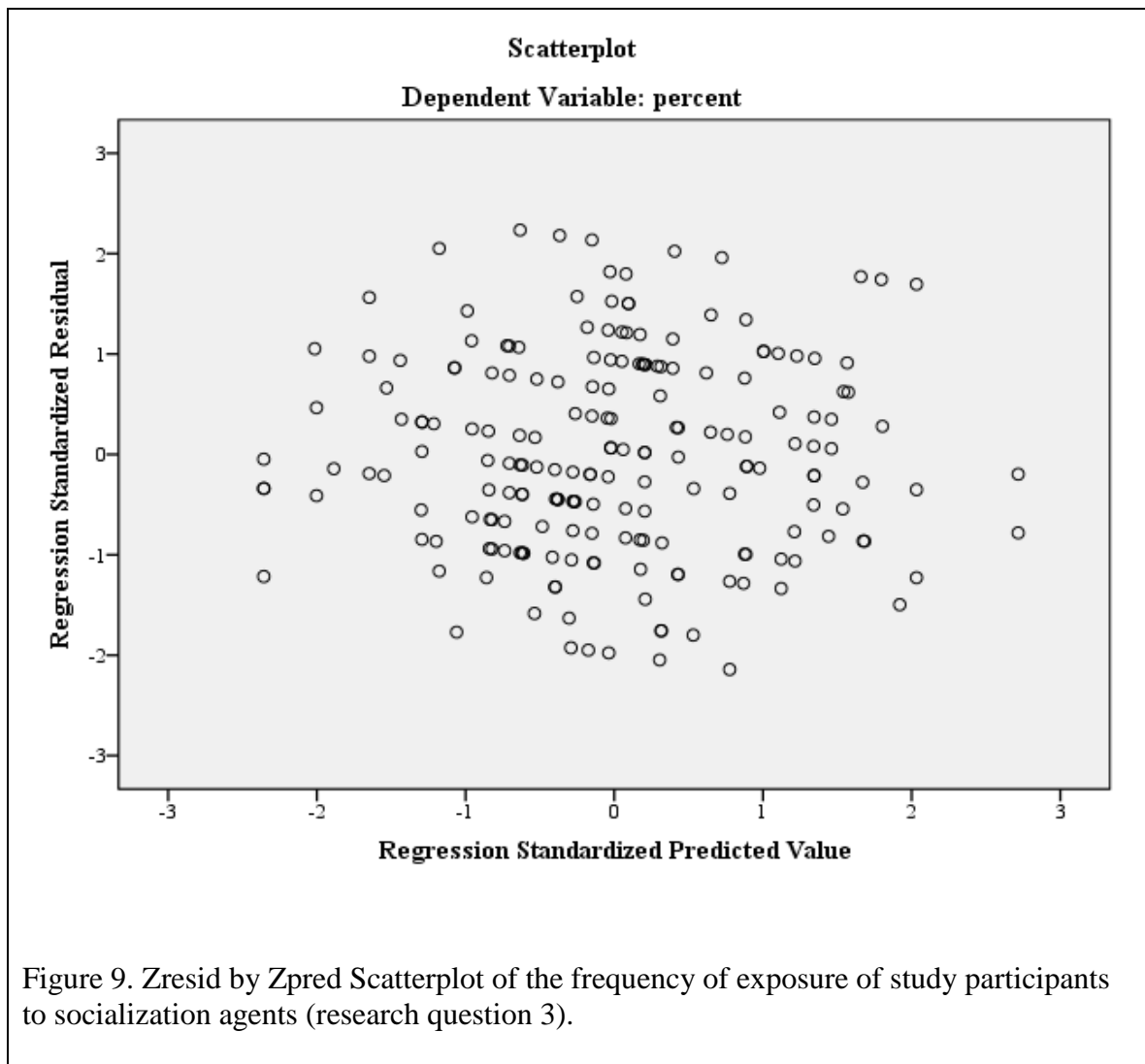
Figure 6. Normal P-P Plot of the frequency of exposure of study participants to socialization agents (research question 3).

Appendix F: Scatterplots to Assess Homoscedasticity of Variance

Figure 7. Zresid by Zpred Scatterplot of the preferences of information sources among study participants (research question 1)

Figure 8. Zresid by Zpred Scatterplot of the influence levels of socialization agents among study participants (research question 2).

Figure 9. Zresid by Zpred Scatterplot of the frequency of exposure of study participants to socialization agents (research question 3).

Appendix G: Research and Survey Questions Matrix

Table 13

Research and Survey Questions Matrix

Research Question	Survey Question	Statistical Tests
1. What sources of information do Puerto Rican college students use to obtain financial information?	Question 1: What sources of information do you use to learn about money management?	Descriptive Statistics One-way ANOVA RMANOVA Multiple Linear Regression
2. How much do the information sources influence the financial decisions that Puerto Rican college students made?	Question 2: How important were the following information sources for you to learn about managing your money?	One-way ANOVA RMANOVA Multiple Linear Regression
3. To what extent does the frequency of exposure to financial topics through family communication, mass media, school, or peers predict the degree to which the participants show financial literacy?	Question 3: How often were you influenced by or did you discuss finances with the following:	Multiple Linear Regression