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Factors Associated With Financial Stressors, Financial Stress, and Financial Behaviors

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FACTORS ASSOCIATED WITH FINANCIAL STRESSORS, FINANCIAL STRESS, AND FINANCIAL BEHAVIORS

by

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ABSTRACT

Factors Associated with Financial Stressors, Financial Stress, and Financial Behaviors

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As of the end of the first quarter of 2021, overall consumer debt in the U.S. reached $14.64 trillion. The more debt a family has, the higher the reported levels of financial stress the family reports. The main objectives of this study were: 1) to explore factors associated with financial stressors and financial stress; 2) to examine the effects of financial stressors and financial stress on financial behaviors; and 3) to examine the effects of race/ethnicity and socio-demographic characteristics on financial behaviors.

Using a revised version of the ABC-X model (Hill, 1949) and the double ABC-X model (McCubbin & Patterson, 1983) of family stress theory, this study attempted to examine associations among financial stressors, financial stress, and financial behaviors. This study utilized data from the 2018 National Financial Capability Study (NFCS). A final sample of 5,252 individuals were analyzed. OLS regression analyses were performed to test seven proposed hypotheses.

The descriptive results indicated that Black individuals reported the highest levels of financial stressors, financial stress, and negative and positive financial behaviors as compared to Hispanic, Asian/Other, and White individuals. The descriptive results also

showed that a higher proportion of Black individuals reported having too much debt, collector calls, and inability to pay bills. The OLS results showed that high financial stress increased the levels of negative financial behaviors, and decreased the levels of positive financial behaviors. The OLS results also indicated that high financial worry increased the levels of both positive and negative financial behaviors. Further, the OLS results showed that having stressors/events (e.g., too much debt, difficulty paying bills) significantly increased the level of negative financial behaviors, but significantly decreased the level of positive financial behaviors.

This study expands the current literature on household debt, financial stress, and behaviors. The findings can be applied to support financial counselors, coaches, or therapists as they implement the information and knowledge in their practical settings. The findings can further provide insights on household debt and consumer well-being issues for policy makers.

(130 pages)

PUBLIC ABSTRACT

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and Financial Behaviors

Paula Andrea Lopez Alvarado

As of the end of the first quarter of 2021, overall consumer debt reached $14.64 trillion. The more debt a family has, the higher the reported levels of financial stress the family reports. Using data from the 2018 National Financial Capability Study (NFCS), the purpose of this study was to examine the associations among financial stressors, financial stress, and positive and negative financial behaviors. The findings of this study suggested that Black individuals had the highest levels of financial stressors, financial stress, and negative and positive financial behaviors among four racial/ethnic groups. The findings also suggested that high financial stress increased the levels of negative financial behaviors and decreased the levels of positive financial behaviors. These findings can help financial professionals and practitioners understand the link between high financial stress and poor financial behaviors and assist some demographic groups (e.g., Black individuals, millennials, less educated individuals, or low-income individuals) who might practice poor financial behaviors.

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CHAPTER I INTRODUCTION

Overspending has become an easy practice as new banking technologies and financial services become available to consumers. This overspending has increased the debt levels in American households, which increases the financial pressure families and individuals experience. In addition, this pressure can affect other areas of individuals' and families' lives. The negative impact of financial circumstances on relationships, work productivity, academic performance, and health is of utmost importance. Research has shown how financial stress can lead to marital issues, family conflict, and mental and physical health issues (Archuleta et al., 2013; Hardie & Lucas, 2010). Financial stress is the emotional reaction to present financial circumstances that may not be solved only by financial counseling or financial coaching.

Financial stress has been studied across the literature but needs to be explored more because the road to financial well-being can be lengthy and challenging. Individuals and families need to have stress-coping skills or adaptation behaviors that can aid them in their journey to financial well-being, particularly when they are under a difficult and uncertain financial situation. However, to be able to make an impact on society, it is important to understand the association among financial stressors, financial stress, and financial behaviors. Particularly, it is important to understand who presents the highest levels of financial stress as debt levels and financial pressures continue to grow in the U.S. (Lee et al., 2019).

Statement of the Problem

The rising levels of consumer debt in the U.S. continues to affect American individuals and families. Mortgages and other forms of debt such as auto loans, student loan debt, and credit card debt continue to grow (Lee et al., 2019). As of the end of the first quarter of 2021, overall consumer debt in the U.S. reached $14.64 trillion (Federal Reserve Bank of New York, 2021). By the end the first quarter of 2021, the Federal Bank of New York (2021) also reported auto debt and student loan debt to have increased by $8 billion and $29 billion, respectively. These numbers are consistent with existing literature. Lee et al. (2019) reported that automobile debt is one of the major sources of debt in the U.S. As of 2018, there were 44.2 million student loan borrowers with a delinquency rate of 10.7% (Friedman, 2018). More than 61 million Americans reported having medical debt totaling over $77 million (Doty et al., 2005). In terms of current mortgage delinquency rates, the number remains unclear due to the CARES-provisioned moratorium (Federal Reserve Bank of New York, 2018).

During 2020, and after the economy took a downturn from the COVID-19 pandemic, the delinquency rates on debt showed a decline (Federal Reserve Bank of New York, 2020). The constant increase in delinquency rate was mainly attributed to the funds from the CARES Act and lenders. However, a concerning amount of $462 billion of debt is reported to be delinquent. $349 billion of that amount is qualified as “seriously delinquent” or “in a state of severe derogatory” (Federal Reserve Bank of New York, 2020).

The more debt a household has, the higher the level of financial stress the family reports (Heckman, et al., 2014). In fact, the more debt one has, the more likely that person is to experience financial stress (Afonso et al., 2018). When individuals and families find themselves under challenging financial circumstances, they can become susceptible to emotional side effects. Work productivity, marriage quality, family relationships, adolescent behaviors, physical and mental health, and academic performance decreased due to the financial stress placed on individuals and families (Archuleta et al., 2011; Archuleta et al., 2013; Hardie & Lucas, 2010). These findings emphasize the extent to which financial stress can overspill into non-financial aspects of one's life.

There are various financial stressors that affect American families today. Rising debt, income volatility, or negative outcomes to financial choices can trigger an emotional response from people (Heckman, et al., 2014). This emotional response is financial stress. Financial stress is the subjective feeling or emotional response to one or many financial stressors that affect a family unit (Falconier & Epstein, 2011). For example, some financial stressors can include sudden income drop, the death of a main provider, or a sudden loss of retirement funds, among others (Archuleta et al., 2011; Lim et al., 2014). In other words, any event that has a negative impact on one's financial circumstances and triggers an emotional response is financial stress. Once there is financial stress, the family or individual could adapt positively or negatively to their new financial circumstances (Bozick, & Estacion, 2014).

Between 2016 and 2019, national Gross Domestic Product (GDP) increased 2.5% and unemployment decreased 1.2% (Federal Reserve Bank of New York, 2018);

however, unemployment increased drastically when the COVID-19 pandemic hit the U.S. According to the U.S. Bureau of Labor Statistics (2020), by the end of September of 2020 the unemployment rate doubled, with Hispanics and Blacks making up most of the unemployed population. By December 2020, the unemployment rate sat at 6.7% (U.S. Bureau of Labor Statistics, 2021).

Sudden job loss is one of the factors that can lead individuals to a financial situation where meeting their financial responsibilities is not possible (Xu et al., 2015; Xu et al., 2017). These individuals could develop financial worry—worrying about the family's financial future and accumulated debt. Financial worry can lead individuals to experience financial stress and to practice negative financial behaviors such as mortgage delinquency, use of alternative financial services, and overdrawing bank accounts (Lim et al., 2014). Individuals can find themselves unable to meet their financial responsibilities such as mortgage, rent, and monthly bills payments, among others (Xu et al., 2015; Xu et al., 2017).

Racial/ethnic groups carry their own interpretations, views, and meanings of personal finances (Heckman et al., 2014; Kakar et al., 2019; Kim & Xiao, 2020; Lee & Zhou, 2014). Black and Hispanic individuals—and other minority racial/ethnic groups—are in a financially disadvantaged situation compared to White individuals. Racial minority groups such as Hispanics, Asians, and Blacks continue to be at the lower end of economic progress, even in times of economic stability (Conger et al., 2010). When experiencing debt pressures, Black individuals had a stronger association to (i.e., higher levels of) financial stress and depressive episodes compared to White individuals (Assari, 2019). It has been shown that African Americans were more likely to show negative

financial behaviors than White individuals were (Assari, 2019). Similarly, White individuals had higher levels of financial capability than racial/ethnic minority groups, which allowed them to have more skills to perform everyday financial tasks over other racial/ethnic groups (Herring & Henderson, 2016; Kim & Xiao, 2020).

Research has also shown that racial minority groups such as Black, Hispanic, Asian, and Native American individuals were more likely to experience financial stress and be in financially distressful situations—where they may not be able to meet any of their financial responsibilities such as paying utilities or mortgages/rents—than their White counterparts (Archuleta et al., 2013; Roll et al., 2016). All racial minority groups appear to experience financial stress like their White counterparts (Drentea & Lavrakas, 2000); however, not all racial groups appear to experience the negative impact of financial stress in the same magnitude (Brown et al., 2020). Racial/ethnic minority groups appear to have fewer resources (financial and non-financial) to positively cope with financial stress as compared to White individuals (Assari, 2019; Grable & Joo, 2006; Heckman et al., 2014). For example, after employment declined due to the COVID-19 pandemic, a higher percentage of the unemployed individuals were Black and Hispanic (Mizota & Darity, 2020; US Bureau of Labor, 2020).

Despite the likelihood of individuals practicing negative financial behaviors such as debt accumulation and debt delinquency, some individuals are equipped with skills and resources (financial and non-financial) that can help them prevent negative financial behaviors under financial stress. Family financial and non-financial resources, financial knowledge, financial literacy, and financial capability can help families and individuals practice healthy financial behaviors under stressful circumstances. Hence, some studies

have shown that when individuals find themselves under financial uncertainty, financial stress (the emotional response) could serve as a motivator to seek out financial help (Idris et al., 2017) to improve their deteriorating financial circumstances and financial behaviors.

This study employed family stress theory as the conceptual framework. Family stress theory states that the reaction to stressors is driven by integration and adaptability (Angell, 1936)—the unity of the family and the ability to adjust to the new circumstances based on their perceptions and available resources (Hill, 1949; Smith & Hamon, 2017). These perceptions (i.e., financial stress) and available resources (i.e., race and sociodemographic characteristics) play a role in how individuals and families respond to potential triggers (i.e., financial stressors) and reach certain outcomes (i.e., financial behaviors) which are part of the problem at hand.

Research Questions

The purpose of this study was to examine the relationships among financial stressors, financial stress, and financial behaviors in the U.S. To fulfill the objectives of the present study, data from the 2018 National Financial Capability Study (NFCS) was used. The main objectives of the present study included the following: 1) to explore factors associated with financial stressors and financial stress; 2) to examine the effects of financial stressors and financial stress on financial behaviors; and 3) to investigate race/ethnicity and sociodemographic characteristics associated with financial behaviors.

To accomplish these research objectives, the following seven research questions were examined throughout the study:

1) What is the association between personal/family resources and financial stressors?
2) What is the association between financial stress and financial stressors?
3) What is the association between personal/family resources and financial stress?
4) What is the association between financial stressors and financial stress?
5) What is the association between financial stress and financial behaviors?
6) What is the association between financial stressors and financial behaviors?
7) What is the association between personal/family resources and financial behaviors?

Importance of the Study

As mental health awareness increases in the U.S., it is important to expand the impact that financial stress has on the mental and financial well-being of individuals and families (Archuleta et al., 2011; Britt et al., 2016). Financial stress can affect individuals' emotions as well as behaviors. To date, knowledge about the extent to which financial stress impacts financial practices in individuals and families continues to be limited. Additionally, there are trained professionals available to address financial well-being challenges such as financial coaches, financial counselors, and financial advisors. The focus of these financial professionals is to aid individuals struggling with debt and to help them change financial behaviors and ultimately reach financial well-being (Delgadillo, 2015). However, these professionals lack training in stress-coping mechanisms (Delgadillo & Britt, 2015). Thus, the findings of this study can help financial professionals, practitioners, or educators with new information as they work with families and individuals with high stress due to debt burden.

Throughout this study, including race/ethnicity in understanding the associations among financial stressors, financial stress, and financial behaviors can help financial professionals, practitioners, educators, policy makers, and researchers see how everyone's financial experience varies across their race/ethnicity. Understanding the role of race/ethnicity in financial stress and behaviors in financial research is particularly important in today's social environment where it is desired to increase racial awareness (Gooden & O'Doherty, 2015). However, little is known about the associations among financial stressors, financial stress, and financial behaviors across race/ethnicity. Thus, the findings of this study can be a benchmark for future research on ethnic minorities, financial stress, and financial behaviors. Further, the findings of this study can add to the existing literature on factors associated with financial stress and financial behaviors.

The findings of this study can help all forms of financial professionals adjust their existing programs and develop new programs to address the financial needs of individuals under financial stress. For example, financial advisors, financial coaches, financial counselors, and financial educators can utilize these findings as they develop prevention programs for individuals and families to deal with financial stressors more efficiently. In addition, based on this study, these financial professionals can assist in creating tools that educate individuals and families of everyday financial matters. Further, this study can provide insights for researchers and scholars to expand financial stress research, how it affects families and individuals, and how it varies across race/ethnicity.

CHAPTER II LITERATURE REVIEW

Financial stress—the emotional response to financial issues, stressors, or events—continues to impact American individuals and families, with increased debt levels being one of the main sources of stress (Drentea, & Reynolds, 2015; Heckman, et al., 2014). In addition to high amounts of debt, there are various financial stressors such as income drop or inability to pay bills that lead to financial stress in individuals and families (Britt et al., 2017; Falconier & Epstein, 2011). The experience of financial stress has impacted individuals' emotional, physical, and mental health as well as family relationships (Kwon, et al., 2003; Santacroce et al., 2020; Tsuchiya et al., 2020). Financial stressors and financial stress have been studied separately (Archuleta et al., 2011; Dew et al., 2012; Heckman et al., 2014). However, there is less research on examining the relationships among financial stressors, financial stress, and the financial behavior of individuals who experience financial hardships. It brings the question to the surface: after experiencing financial stressors and stress, do individuals and families positively or negatively adapt? This chapter documents previous studies on financial stressors, stress, personal resources, and behaviors.

Financial Stressors

Financial stressors are events or situations that affect the emotional well-being of individuals (Falconier & Epstein, 2011). Financial stressors are defined as events or circumstances where individuals are not able to meet economic needs and have been related to physiological and psychological distress that leads to increased financial worry, health issues, and decreased marital adjustment (Drentea & Reynolds, 2015; Kinnunen &

Feldt, 2004; Santacroce et al., 2020). Rising credit card debt, student loan debt, auto loans, and medical debt, in addition to sudden economic downturns, continue to place a burden in the financial well-being of American individuals and families (Juselius & Drehmann, 2015). These sources and events of financial changes can lead individuals to experience high levels of financial stress.

Even though it is evident that various types of debt have negative impacts on the life of individuals and families such as poor academic performance and increased mental health, it has been shown that debt is a stressor that causes financial stress on individuals (Afonso et al., 2018; Drentea, & Reynolds, 2015; Ross et al., 2006). There are economic impacts that create yet another financial stressor: that is, calls from debt collectors. As individuals fail to meet their financial responsibility to a creditor or lender, their debts are sent to collection agencies or debt collection agencies (Surviving Debt, 2020). Debt collectors are individuals "who collects debt" (Surviving Debt, 2020, p. 259). Though there are various ways to deal with debt collection agencies and the owed debt, the stress from being contacted by those agencies and the debt itself continues to negatively affect the emotional well-being of individuals and families.

The presence of financial stressors is shown to have varying impacts on the life of individuals at various stages of life. Tsuchiya et al. (2020) reported that 74.6% of adults in the United States have experienced financial stressors. A similar finding was shown in Ettman et al. (2020), where 40% of adults in the United States reported experiencing financial-related stressors due to the COVID-19 pandemic. The research is clear on the presence of financial stressors in adults and its impact to their emotional, mental, and physical well-being. However, little is known on the financial impacts of financial

stressors on financial behaviors. Financial stressors, such as sudden job loss, decrease of the available funds to cover pre-existing financial obligations, as well as illnesses that increase the financial responsibilities of the household can lead to failures to make mortgage and non-mortgage debt payments on time (Xu et al., 2015; Xu et al., 2017). Despite the correlation, the evidence on financial behaviors remains scarce.

Along with debt levels and debt delinquency, the inability to cover financial obligations continues to be linked to individuals' non-financial lives, particularly among those with medical bills. In 2005, over 61 million Americans have medical debt totaling more than $77 million (Doty et al., 2005). The presence of one or more chronic health conditions had a higher likelihood of accumulating or building medical debt (Richard et al., 2018). Individuals with children with disabilities reported that they struggled with mortgage payments, rent payments, or utility bills to cover the cost of health needs for their children (Goudie et al., 2014). A similar finding was shown in a study done for parents with children with pediatric cancer. The growing costs of cancer treatments limited the ability of parents to cover their pre-existing financial obligations regardless of their income level (Santacrose et al., 2020). Medical debt has shown to be one of the main reasons why individuals and families file for bankruptcy (Dobkin et al., 2018). Additionally, medical debt has shown to lead to depression and anxiety among older adults in the U.S. (Marshall et al., 2020).

During economic downturns, unemployment rates increase. Consequently, individuals and families are at risk of experiencing income volatility. Income drop has been a financial stressor that has direct impacts on the financial well-being of individuals and families (Donnelly & Farina, 2021). A previous study showed how measures of

loneliness increased under the presence of income shock among the elderly (Hawkley et al., 2020). More recently, the COVID-19 pandemic brought a wave of income loss, causing an economic recession not only in the U.S., but also worldwide. In the U.S., the pandemic has brought a drastic and rapid increase to unemployment levels (Federal Reserve, 2020). The unemployment rate doubled between March and the end of September 2020 (U.S. Bureau of Labor Statistics). This income shock has brought on many financial concerns, such as debt delinquency (Drentea, & Reynolds, 2015) and mental health concerns such as increased emotional stress (Donnelly & Farina, 2021).

Due to the Great Recession (2007-2009), it was perceived that households would struggle to meet financial obligations and face heavy financial burdens during upcoming economic downturns (Hanna et al., 2012; Garriga, et al., 2017). This prediction has shown to be true under the current economic climate brought by the COVID-19 pandemic (Beland et al., 2020). Depression and anxiety levels increased among adults who experienced income shock, and the income shock experienced due to the COVID-19 pandemic had a significant impact on the mental health of Americans (Donnelly & Farina, 2021).

The inability to pay bills is a stressor that affects individuals and families. As mentioned above, medical debt is an example of potential causes that make individuals and families unable to meet preexisting financial responsibilities (Dobkin et al., 2018; Santacroce et al., 2020; Valero-Elizondo et al., 2019). College students give another perspective on the inability to pay bills. To meet the rising cost of education, students often experience food and housing insecurity—some students being homeless (Broton & Goldrick-Rab, 2018). A study done by Hernandez (2019) also showed how the inability

to pay energy bills ended in service shutdown and varied across socioeconomic characteristics. Nevertheless, medical debt is the main factor that can limit the ability to meet financial obligations such as paying rents, utilities, or/and food (Hailey et al., 2019; Valero-Elizondo et al., 2019).

Financial Stress and Perceptions

Financial stress has been associated with low levels of subjective well-being. The negative effect of financial stress on individuals' and families' emotional well-being is clearly stated across the literature (Steptoe et al., 2020; Wrosch et al., 2000). High debt levels and limited income can cause individuals and families to develop a feeling of worry, anxiety, and stress about their present and future financial well-being (Robb, 2017; Viseu, et al., 2018). Financial stress is the emotional reaction that comes from individuals who experience financial stressors (Falconier & Epstein, 2011). For example, holding student loan debt, existing medical obligations, and increasing living expenses have been associated with financial stress (Heckman et al., 2014; Robb, 2017; Santacroce et al., 2020).

The consequences of financial stress are shown in the literature. College students who reported experiencing financial stress were more likely to show poor academic performance because longer working hours were necessary to meet financial responsibilities and pay educational costs (Bennett et al., 2015). Research shows that financial issues due to financial stress led to marital conflict and divorce (Andersen, 2000; Dew et al., 2012). Those who experienced financial stress were more likely to experience relational conflict and divorce compared to couples who reported low

financial stress (Dew et al., 2012). Individuals appeared to be aware of these potential outcomes as they chose to postpone marriage until they became financially stable (Bozick, & Estacion, 2014).

As the subjective emotional reaction to financial stressors, financial stress can vary based on the individuals' perception and resources available to deal with the stressors (Park & Kim, 2018; Smith & Hamon, 2017). Heckman et al. (2014) reported that the levels of financial stress experienced by the students in their sample varied depending on the stressor.. For example, those who did not have enough financial resources to participate in the same activities as their peers, such as extracurricular activities and social events, reported feeling more financial stress compared to those with enough financial funds to participate in the same activities as their peers (Heckman et al., 2014).

In the literature, financial stress has been measured differently. Archuleta et al. (2011) examined the association between financial stressors and financial satisfaction in marital satisfaction. A set of events were used to measure the levels of financial stress experienced among couples. In that study, financial stressors consisted of 24 events that married couples had experienced in the last 12 months that led them to experience financial stress. Some of these events included receiving an overdue notice from a creditor, death, decrease in income, medical bills, garnished wages, divorce, investment loss, bankruptcy, and foreclosure (Archuleta et al., 2011). In another study, Lim et al. (2014) found that as individuals experienced having too much debt, holding different types of debt, and worrying about school costs, they reported feeling stressed about their finances.

Like financial stress, financial anxiety is described as a subjective reaction to financial stressors. However, these concepts are different in how individuals and families feel about stressors. While financial stress is the immediate reaction to financial stressors, financial anxiety is defined as the feeling of anxiousness or worry about one's current and future financial situation (Archuleta et al., 2013). Grable et al. (2014) stated that financial anxiety led to self-imposed feelings of helplessness. Financial anxiety is also explained as the unhealthy attitude towards one's financial situation by not practicing positive financial behaviors, such as financial planning (Archuleta et al., 2013; Grable et al., 2014; Roll et al., 2016). Santacroce et al. (2020) reported that, as individuals experienced high levels of financial stress over time, they began to develop depression, supporting the literature on financial anxiety.

In many studies, it is shown that financial anxiety impacts individuals' emotional well-being and financial behavior in a way that places them in a cycle where their financial circumstances do not seem to improve (Archuleta et al., 2020; Roll et al., 2016; Sages et al., 2013). Those who experience financial anxiety showed poorer financial behavior such as lack of budgeting and saving (Roll et al., 2016; Sages et al., 2013). Several scholars attempted to find ways to reduce negative impact of financial anxiety on individuals and families. Archuleta et al. (2020) used solution-focused financial therapy techniques to decrease the financial anxiety levels of the participants. They found that the goal-setting program helped the participants decrease their levels of financial anxiety, but only for a short term. Another study by Sages et al. (2013) showed that financial counseling and mental health services mitigated financial anxiety; however, it did not fully correct the problems caused by financial anxiety.

In summary, financial stress and financial anxiety are subjective feelings caused by one stressor or the accumulation of many. However, these two terms differ in how long of an impact the stressor has, how soon the respondent began experiencing one of these emotions, and how long an impact one of these emotions had in the respondent's life. Constant and recurring financial stress can lead to financial anxiety (Grable et al., 2015). Considering the abundant literature on the negative impact of financial stress and anxiety on individuals and families, it is important to examine how to reduce the negative impact of financial stress on financial behavior. Financial stressors can lead to financial conflict and financial distress (financial stress) which can be alleviated by seeking financial advising and financial education programs (Archuleta et al., 2020; Lim et al., 2014). On the other hand, financial anxiety can impact one's desire to seek out financial help, and confidence in the effectiveness of such help (Grable et al., 2014).

Race/Ethnicity

The existing literature shows differences in the financial experiences of racial/ethnic groups. Financial behaviors are affected by cultural attitudes toward financial issues (Hawkins & Zuiker, 2019). Race/ethnicity is a key factor in understanding the financial behavior of individuals and families (Perry & Morris, 2005). Race/ethnicity was a factor that showed individuals and families financial values and financial interests that could determine their financial behaviors (Hawkins & Zuiker, 2019). In this study, race/ethnicity is considered as a factor associated with financial stressors, financial stress, and financial behaviors. Particularly, race/ethnicity is considered a key factor because one's racial/ethnic identity could shape their financial

behaviors and financial priorities of individuals and families (Hawkins & Zuiker, 2019). Four racial/ethnic groups (Black, Hispanic, Asian/Other, and White individuals) were considered in understanding the associations among financial stressors, financial stress, and financial behaviors in the present study.

Black Individuals

Black individuals and families have been shown across the literature to be a financially vulnerable racial/ethnic group (Herring & Henderson, 2016; Gilligan et al., 2018). This issue is mainly attributed to the race inequality issues the country faces, which limits the exposure to money management techniques to Black individuals and families (Gilligan et al., 2018). It has been shown that Black individuals reported a lower level of wealth and financial literacy compared to their White counterparts (Federal Reserve, 2020; Herring & Henderson, 2016). The experienced racism of Black individuals continues to hinder not only to their emotional well-being, but also their financial well-being (Hollingsworth et al., 2018; Washington, 2018). Black individuals were more likely to report experiencing financial stress and dropout of school due to low financial resources than their White counterparts (Lange & Byrd 1998; Sages et al., 2013).

The difference between the financial circumstances of Black and White individuals is clear across the literature. The overall net worth of Black families is significantly lower than the net worth of White families (Thompson & Suarez, 2015), and the racial/ethnic differences in income, business ownership, and investment accounts continued to explain the racial wealth gap between Black individuals and White individuals (Herring & Henderson, 2016). Black individuals were found to be 2.6 times

more likely to acquire medical debt compared to White individuals (Wiltshire et al., 2016). Black individuals were also more likely to be contacted by a collection agency and acquire extra debt to pay for medical expenses compared to their White counterparts (Wiltshire et al., 2016). This issue can be explained by the difference between health status, income, levels of financial stress, and insurance disparities between Black and White individuals (Wiltshire et al., 2016).

Hispanic Individuals

The Hispanic population in the U.S. are mainly composed of immigrants from various Latin American countries (Massey et al., 2016). Due to immigration status and language barriers, among other factors, Hispanic individuals had lower income and wealth compared to other racial groups (Gilbert et al., 2017). Hispanic individuals perceived and measured financial success differently. However, they are considered a financially vulnerable population (Porto, 2016). Compared to other racial groups, Hispanic individuals received the least financial messages from family (Mimura et al., 2015); appeared to be less successful at resolving debt problems (Dellande et al., 2015); and showed less overall financial wealth compared to White individuals (Thompson & Suarez, 2015). Similar to Black individuals, when Hispanic individuals were considered "gifted" in educational contexts, they continued to experience microaggressions due to their race and income (Stambaugh & Ford, 2015).

Even though some Hispanic individuals are considered White, they still face racial discrimination that can be reflected in their financial situation. Research shows that Hispanics' consumer choices differed from non-Hispanic White individuals (Plath & Stevenson, 2005). White Hispanics were more likely than non-Hispanic White

individuals to be unbanked (do not have bank accounts) (Aguila et al., 2016), and bank account ownership was also associated with the mental health status of individuals. Compared to White individuals, Hispanic individuals were more likely to be unbanked, hold stock or mutual funds, and show lower levels of financial literacy (Porto, 2016). Their homeownership, assets, and overall wealth was lower than that of White individuals. Financial knowledge and perceived control played a role in the financial services Hispanic families choose to purchase (Weisfeld-Spolter et al., 2018).

Hispanic individuals, like Black individuals, continued to face rejection throughout their post-educational experience (Salinas & Hidrowoh, 2018). This is relevant in the understanding of the financial circumstances of Latino or Hispanic families because research has shown that money played a key role in their ability to pursue and succeed in post-secondary education (Salinas & Hidrowoh, 2018). The financial challenge of children from immigrant families affected their school performance (Gilbert et al., 2017). Latino parents were less likely than White parents to have money saved up for their child's post-secondary education (Dondero & Humphries, 2016). Also, part of the disadvantage is that Hispanic and/or Latino families and individuals are limited in their understanding of their financial choices. A qualitative study done by Zalaquett and Lopez (2006) showed how mentoring, including topics of financial aid and other financial topics, led to the success of undergraduate Latino and Latina students.

Other Individuals

Asian, Native Americans, and biracial communities continued to show contradicting information across the literature. A study that evaluated the overall wealth based on race while accounting for similar financial responsibilities showed that Asian

and White individuals presented the highest levels of wealth across the four racial groups (Whites, Blacks, Hispanics, Asians). Asian individuals are known for having high expectations of success. Title and wealth were part of their measures of success (Lee & Zhou, 2014). Asian individuals and families were more likely to have money saved for their child's college education compared to White parents, even though their income was less predictable due to their lack of experience in the United States and their immigrant status (Dondero & Humphries, 2016). According to the U.S. census, Asian individuals had the highest average income ($43,883) across race followed by non-Hispanic White individuals ($42,106) (Census, 2019). When compared to non-Hispanic White individuals—controlling for age and internal locus of control—there was no racial difference between Whites and Asians in financial planning (Grable et al., 2015). When controlling for locus of control, financial knowledge, and income interactions, Koreans showed better financial management behaviors than their White counterparts (Grable et al., 2009).

Credit delinquency was the lowest among Asian individuals, even when compared with White individuals (Hanna et al., 2015). Asian individuals showed positive financial behaviors similar to their White counterparts when it comes to spending less than their income (Hanna et al., 2010). In their study, Hanna et al. (2015) found that Asian individuals had the highest median income compared to Whites, Blacks, and Hispanics, and similar median income when controlling for age. Asian individuals continued to show better financial circumstances in terms of income and net worth compared to Blacks and Hispanics (Hanna et al., 2015). Other minorities, such as American Indians, experience circumstances and challenges similar to Black Americans

(Chetty et al., 2020). Unfortunately, research on the financial circumstances of Native Americans is significantly limited. This is attributed to the fact that Native Americans and other smaller racial groups (such as biracial individuals) are usually combined with Asian individuals in sample groups.

White Individuals

White individuals are shown across research to be in a privileged position in comparison to other minority groups. This is reflected in the wealth-gap presented amongst all racial groups (Thompson & Suarez, 2015). Existing literature consistently shows that White individuals showed better financial circumstances than other racial minority groups, with some exceptions when compared to Asian individuals (Cole & Sokolyk, 2016; Wiltshire et al., 2016). As compared to Hispanic and Black individuals, White individuals presented higher levels of financial capability, overall wealth, and retirement savings (Tang & Baker, 2016; Thompson & Suarez, 2015). Non-Hispanic White individuals had higher amounts of savings compared to Hispanic individuals (Porto, 2016), though they showed more negative financial management practices compared to Asians (Grable et al., 2009). Despite the variations across the literature, it is evident that White individuals typically perform better financially than other race/ethnic individuals (Cole & Sokolyk, 2016; Jorgensen et al., 2017; Thompson & Suarez, 2015).

Socio-Demographic Factors

Individuals' socio-demographic characteristics play a role in the adaptability and integration that an individual or family has when facing financial stressors. These characteristics can impact the level of perceived financial stress due to the resources

available to deal with financial stressors. Self-efficacy, income, household size, amount of debt, type of debt, and gender, among others, remained predictors of financial stress (Grable & Joo, 2006; Ponnet, 2014). The wage gap among racial minority groups appeared to be explained by other sociodemographic characteristics such as income, marital status, education, and wealth (Chetty et al., 2020). Previous studies have shown that those with more education were also less likely to present financial anxiety, but females, those with low income, and minority groups were more likely to present financial anxiety than their socio-demographic counterparts (Archuleta et al., 2013; Roll et al., 2016).

Age

There is a variation on the approach to saving, investing, and debt management across age groups (Fry et al., 2018). Older individuals showed better retirement and investment practices compared to younger individuals (Henager et al., 2016). This could be explained by the fact that financial knowledge improves with age (Alhenawi & Elkhal, 2013). Older individuals showed higher levels of subjective and objective financial knowledge compared to younger individuals (Xiao et al., 2015). Younger individuals also scored lower on perceived financial capability and the financial capability index compared to older adults (Xiao et al., 2015).

In literature, the impact of financial hardships also appeared to differ across age groups. Older adults with difficulty covering financial obligations were more likely to show high levels of depressive symptoms and anxiety (Marshall et al., 2020). However, regardless of age, financial problems had a significant impact on a couple's life regardless of the life stage (Park & Kim, 2018). Older individuals (55+) were more likely

to do comparison shopping before applying for a credit card compared to younger individuals whereas younger individuals were less likely to have information-seeking behaviors than older individuals (Fan & Chatterjee, 2017).

Gender

Gender has been shown to be a factor in financial stress. Research has shown that women had lower income levels compared to men (Bishu & Alkadry, 2017) as well as higher levels of financial stress (Tran et al., 2018). Females, compared to males, were more likely to experience financial stress (Ponnet, 2014). Similarly, women also appeared to be less confident of their financial abilities and financial decision-making skills compared to men (Al-Bahrani et al., 2020). Men received more financial information from college professors and financial courses compared to women (Mimura et al., 2015). Additionally, females were more likely to have their health affected by debt (Chen et al., 2020). In households with struggling mortgages, women were more likely to show impact to their health compared to men (Chen et al., 2020).

Though women appeared to be disadvantaged across the literature, there was a positive side to a woman's financial situation: the potential income of a woman is considered an attractive characteristic to potential partners, lowering the risk of economic hardship in marriage (Amato et al., 2007). Men and women had different levels of risk tolerance (Fisher & Yao, 2017). However, this is caused by other factors besides gender. Fisher and Yao (2017) found that income uncertainty and net worth moderated the relationship between gender and risk tolerance.

Education

Education appears to be a factor in understanding the financial behavior of individuals. Research shows that individuals who completed financial education in high school practiced better financial behaviors post high school graduation (Urban et al., 2018). Similarly, individuals with an educational level above high school showed an increase in positive credit card behavior (Fan & Chatterjee, 2017). Educational attainment was also positively associated with individuals doing comparison analyses when applying for a credit card (Fan & Chatterjee, 2017). Individuals' educational attainment was associated with the increased likelihood of individuals and families to do comparison shopping before acquiring a new credit card (Fan & Chatterjee, 2017). The higher the levels of education individuals reported, the higher the levels of financial education (Silva et al., 2017). Financial education was associated with higher levels of positive financial behavior and financial literacy (Kaiser & Menkhoff, 2017). Unfortunately, women presented lower levels of education compared to men (Crawford & Greaves, 2015). The gap between educational levels and income between men and women can also help us understand how employment status impacts the financial behavior and financial circumstances of individuals and families.

Marital Status

Marital status is crucial in understanding the financial behavior of individuals as it can be a factor of their financial choices and practices. Married, single, divorced, and widowed individuals had different financial needs and financial responsibilities (Love, 2010). For example, single and married individuals can designate spouses or children as beneficiaries of insurance policies based on their marital status (Love, 2010). Marital status also influenced income and child expenses. Married households had a higher

likelihood of being a dual-income household and child expenses varied based on the parents being together or divorced (Love, 2010).

Marital status has also been associated with wealth accumulation. Married individuals were more likely to have increased wealth throughout the course of their lives compared to nonmarried individuals (Grinstein-Weiss et al., 2006). In one study, it was revealed that single or unmarried women experienced higher levels of psychological distress compared to married women, which could make them more susceptible to financial stress (Hope et al., 1999). It was also found that married individuals were more likely to present positive saving practices compared to single individuals (Heckman & Hanna, 2015). These previous studies provide evidence that marital status plays a role in the financial circumstances and financial outcomes (financial behaviors) of individuals.

Employment Status

Employment status is shown to be a factor associated with the financial circumstances and practices of individuals and families. Employment status has also been associated with financial knowledge and retirement planning. A study done by Prawitz and Cohart (2014) showed that those who had access to financial education in the workplace were more likely to improve budgeting practices and increased retirement contributions than those who did not participated in workplace financial education. Those who had less time in the work force were more likely to have low retirement savings (Hsu, 2016). In contrast, those with employer-sponsored retirement plans showed a higher likelihood of positive saving practices (Heckman & Hanna, 2015). Kim and Garman (2004) found that those who were not satisfied with their pay rate at work showed higher levels of financial stress and poor work performance. A similar finding

was seen in a study that compared working and non-working students. Mukherjee et al. (2017) found that working individuals had higher financial stress than their non-working peers.

Income

Previous studies have shown that individuals with lower income had higher levels of financial stress compared to those with higher income (Archuleta et al., 2013; Roll et al., 2016). However, it is not always consistent that those with higher income present lower levels of financial stress. Individuals within the $50-$75K income bracket have reported having higher levels of financial stress compared to those with incomes of a $100K and higher (Roll et al., 2016). This has been attributed to expensive lifestyles, wealth mismanagement, or poor financial behaviors (Lusardi, 2015). In another study, Kaiser & Menkhoff (2017) found that financial education was less effective among individuals of lower income, and income was also associated with positive financial behaviors. Research also suggests that individuals with higher income levels were more likely to show positive saving behaviors and reported spending less than earned (Heckman & Hanna, 2015).

Financial Knowledge

There are two forms of financial knowledge that have been used across the literature: subjective financial knowledge and objective financial knowledge. Subjective financial knowledge is commonly defined as confidence (Atlas et al., 2019). Though subjective financial knowledge can lead to positive financial behaviors, research suggest that overconfidence can have the opposite effect—negative financial behaviors (Atlas et

al., 2019). Objective financial knowledge is defined as the combination of financial competence, mathematical ability, and understanding of financial matters (Lind et al., 2020). High levels of objective financial knowledge were associated with positive financial behaviors (Lind et al., 2020). Though, other studies suggest that high levels of financial knowledge did not lead to positive financial behavior (Peach & Yuan, 2017).

Kim et al. (2019) examined the role of financial knowledge in long-term and short-term financial behaviors. Contrary to Peach and Yuan (2017), their findings suggest that financial knowledge increased the likelihood of individuals to perform positive short-term and long-term financial behaviors (Kim et al., 2019). However, between objective and subjective financial knowledge, it has been shown that subjective financial knowledge had a higher impact on financial behaviors (Robb & Woodyard, 2011). Additionally, financial knowledge, both objective and subjective, have been associated with the decreased likelihood of financial anxiety and self-reported levels of financial stress (Lind et al., 2020; Peach & Yuan, 2017).

Financial Behaviors

Financial behaviors can also be viewed as long-term financial behaviors and short-term financial behaviors. Short-term financial behaviors include emergency saving and budgeting, whereas long-term financial behaviors include retirement planning and investment practices (Henager & Cude, 2016). Financial behavior is usually measured by accounting for available cash, credit management practices, and saving habits (Xiao et al., 2008). In more detail, positive financial behavior includes spending less then income,

tracking expenses, paying bills on time, having an emergency fund, retirement plan, and paying credit cards on time (Xiao et al., 2008).

Credit card shopping before applying for a credit card can also be seen as a positive financial behavior (Fan & Chatterjee, 2017). Positive financial behaviors were believed to increase financial satisfaction in individuals and families (Xiao et al., 2014). Financial behaviors are influenced by the levels of subjective financial knowledge and other socioeconomic factors (Tang & Baker, 2016). Those with higher financial capability tended to show better financial behaviors (Grable et al., 2015); and positive financial behaviors were positively associated with financial satisfaction and life satisfaction by extension (Xiao et al., 2008).

When controlling for socioeconomic factors, subjective knowledge, financial knowledge, and self-esteem were directly related to positive financial behaviors (Tan & Baker, 2016). This supports existing literature on the connection between psychological traits and financial behavior (Tan & Baker, 2016). Similarly, financial socialization played a role in more positive financial behaviors (Jorgensen et al., 2017). Those who received direct and indirect financial information at home were more likely to present positive financial behaviors because they felt they had more control over their financial outcomes (Jorgensen et al., 2017). High self-esteem was also correlated to financial behaviors (Tang & Baker, 2016). In addition, the self-perception of control over finances—accounting for financial knowledge and income—also influenced the likelihood of presenting positive financial behaviors (Perry & Morris, 2005). Individuals and families' propensity to save, budget, and control their spending—positive financial

behaviors—was partly attributed to their perceived control over financial outcomes (Perry & Morris, 2005).

Some negative financial behaviors such as failure to plan for retirement, lack of participation in the stock market, and poor borrowing behavior can be attributed to low financial literacy (Lusardi, 2015). As mentioned above, financial knowledge was associated with short- and long-term financial behaviors (Henager & Cude, 2016). Therefore, low levels of financial knowledge can be associated with negative financial behaviors. Financial literacy appeared to be related to financial behaviors—positive and negative. Financial education programs focused on decreasing negative financial behaviors was important to avoid decreased financial satisfaction as negative financial behaviors are associated with low financial satisfaction (Xiao et al., 2014).

Some negative financial behaviors and practices can be associated with low wages (Letkiewicz & Heckman, 2019). Negative financial behaviors such as late mortgage or rent payments and other financial obligations were not necessarily associated with lack of motivation or financial literacy, but rather were attributed to personality traits such as consciousness and neuroticism (Letkiewicz & Heckman, 2019). This study also showed how payment delinquency increased when individuals were financially delinquent in the past. Similar to personality traits, technology implementation such as the use of mobile payments appeared to be relevant in understanding credit card practices. The utilization of financial technologies has been shown to improve financial management behaviors (Bapat, 2019).

The use of mobile payment technology has been associated with negative financial practices such as overspending with credit cards due to the effortless process to

spend money (Meyll & Walter, 2019). In addition, income, education, marital status, and number of credit cards also appeared to play a role in credit card usage and repayment behaviors (Hamid & Loke, 2020). Short-term financial behaviors such as financial monitoring (budgeting), spending habits, and other money handling practices were all associated with credit card repayment (Hamid & Loke, 2020).

In their study, Bikernmaier & Fu (2020) tried to understand the relationship between financial behaviors and individuals with limited access to financial services such as bank accounts and their utilization of alternative financial serves (AFS). The results showed that most of the U.S. population had access to financial services with the exception of retirement accounts and other types of investment accounts. Their results also showed how overspending increased the likelihood of individuals and families to have limited access to financial services. Retirement accounts were also associated with financial risks and financial well-being during retirement. For example, some individuals opted to withdraw from their retirement account, which was considered a double-edged sword because of the risk of significantly reducing financial resources during retirement (Argento et al., 2015). Additionally, withdrawal from retirement accounts were also associated with income shock and low-income (Argento et al., 2015).

Similarly, among low-income individuals' and families' access to employer-sponsored retirement plans and credit access appeared to encourage saving behaviors (Heckman & Hanna, 2015). In this study, low-income families and individuals were composed mainly of Blacks, Hispanics, single females, and individuals with low education level (high school diploma or GED). In the financial context, they presented poor financial situations, limited access to financial services, low to no access to credit,

and limited access to retirement programs through employers—over half of the low-income sample reported spending more than what they earned (Heckman & Hanna, 2015). This kind of behavior (overspending, poor credit, limited access to financial services, and employer sponsored plans), can place individuals and families in a financially delicate state. Research suggests that individuals decide to take a hardship withdrawal from their retirement accounts when they find themselves in financial need (Tacchino, 2019), meaning individuals do not have any other resources available to cover their financial needs.

Minority groups and low-income groups present poorer financial behaviors compared to White individuals, and individuals and families with higher income levels due to limited access to financial services, including financial education. Fan and Chatterjee (2017) found that individuals of low income or those who presented the most financial needs were the least likely to use information search services. In their study, individuals with low educational attainment, financial literacy, and financial knowledge were less likely to do comparison shopping before applying for a new line of credit. Credit card use has also been associated with financial satisfaction and mental health. According to Payne et al. (2017), credit card mismanagement decreased financial satisfaction and increased stress and anxiety. As credit card mismanagement (carrying balances over one billing cycle from the previous one) increased, the likelihood of individuals feeling sad or worried increased also. Those individuals and families who did not carry a credit card balance were less likely to be in a crisis or at risk (Payne et al., 2017).

In summary, based on the literature, this study attempted to examine the relationship between financial stressors, financial stress, and financial behaviors in individuals in the United States. This study attempted to see how race and socio-demographic characteristics play a role in the association among financial stressors, financial stress, and financial behaviors. Financial stressors—not being able to meet economic needs—causes an emotional reaction that can lead to financial stress (Drentea, & Reynolds, 2015; Falconier & Epstein, 2011; Kinnunen & Feldt, 2004; Santacroce et al., 2020). The levels of financial stress may vary based on racial and other socio-demographics characteristics. This variety exists particularly because racial/ethnic minorities such as Black and Hispanic individuals were more likely to acquire high levels of debt, financial stress, and income volatility (Lange & Byrd 1998; Sages et al., 2013; Wiltshire et al., 2016). In the case of Asian individuals, the literature is contradicting. However, they appeared to present better financial circumstances to Black and Hispanic individuals but continued to be behind White individuals (Grable et al., 2009; Hanna et al., 2015).

Similar to race/ethnicity, sociodemographic characteristics such as age and gender also play a role in levels of financial stress and types of financial behaviors. For example, women were more likely to experience financial stress than men (Ponnet, 2014). Education is another factor associated with types of financial behaviors, such as comparison shopping for credit cards (Fan & Chatterjee, 2017). Financial behaviors were also associated with socio-demographic characteristics. Older individuals presented better investment behaviors compared to younger individuals (Henager et al., 2016) and individuals of low-income present poorer financial behaviors than individuals of higher

income. This is particularly relevant because desirable financial behaviors were important for individuals and families with low financial access (Bikernmaier & Fu, 2020). Therefore, race/ethnicity, financial stressors, financial stress, financial knowledge, and sociodemographic characteristics play a role in the financial behavior of individuals and families.

Conceptual Framework

Family Stress Theory

This study employed family stress theory as the conceptual framework. In family stress theory, stress is a part of individuals' and families' lives. Research continues to show how stress can negatively affect individuals' mental and physical health, relationships, work and academic performances, parenting, and other aspects of life (Archuleta et al., 2013; Crandall et al., 2017; Falconier & Epstein, 2011; Hardie & Lucas, 2010; Odle-Dusseau et al., 2018). Family stress theory assumes that the family's reaction to stressors is dependable on integration and adaptability (Angell, 1936). Integration refers to the unity of the family and adaptability to the ability to adjust to the new circumstances (Smith & Hamon, 2017). Family stress theory also assumes that family' reactions and perception to stressor events vary based on certain personal and demographic characteristics and resources that lead to the ability to positively (bonadaptation) or negatively adapt (maladaptation) (Smith & Hamon, 2017; McCubbin & Patterson, 1983).

Figure 1 presents the framework of the ABC-X model of family stress theory, which shows the relationship between stressors, resources, perception, and crisis (Hill,

1949). In the ABC-X model of the theory, “A” refers to the stressor event; “B” to the family’s resources; “C” to the perceptions of the stressors; and “X” to the outcome or adaptation to the stressors (does the family enter in crisis or not?) (Hill, 1949). This theory accounts for the variation of the impact particular stressors have in the family unit. By accounting for resources “B”, the theory considers how stressor events have a varying influence depending on who is experiencing the event and what resources they have available to deal with the stressor. The available resources—tangible and nontangible—shape the perception the family has of the stressor event “C”. This perception, positive or negative, plays a key role in the possibility of the family entering crisis “X”.

In the McCubbin and Patterson (1983) double ABC-X model family stress and adaptation, the “X” outcome accounts for how the family or individual adapted to the new situation (Malia, 2006; Smith & Hamon, 2017). In this model, McCubbin and Patterson (1983) used the terms bonadaptation and maladaptation to address the outcome. Bonadaptation refers to the family’s or individual’s ability to positively adapt to the new circumstances. Maladaptation refers to the family or individual negatively adapting to the new circumstances brought up by the stressor event— an unhealthy or dysfunctional outcome to the presence of the new stressors (Smith & Hamon, 2017).

Based on family stress theory (Hill, 1949; McCubbin & Patterson, 1983), the ABC-X model has been modified for the purpose of this study. The original ABC-X model focuses on the stress experienced by families, their available resources, their perception of the stressor event, and outcome. The double ABC-X model accounts for two potential outcomes—bonadaptation and maladaptation. Financial stress is the way individuals react to a particular financial stressor and— according to the theory—is a

constantly evolving concept. Stressors can be single events or a combination of events that impact individuals and families (Malia, 2006). Family stress theory recognizes the interaction between stressors, resources, and perception that lead to bonadaptation or maladaptation. This study focuses on the relationship among financial stressors, financial stress, resources, and outcome (positive or negative).

Figure 1

Hill (1949) Stress Model

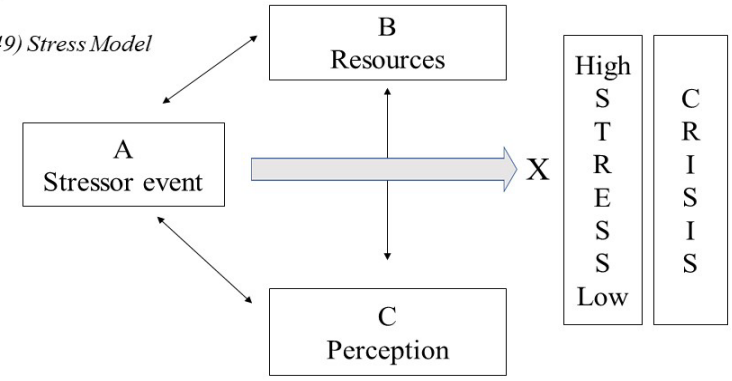
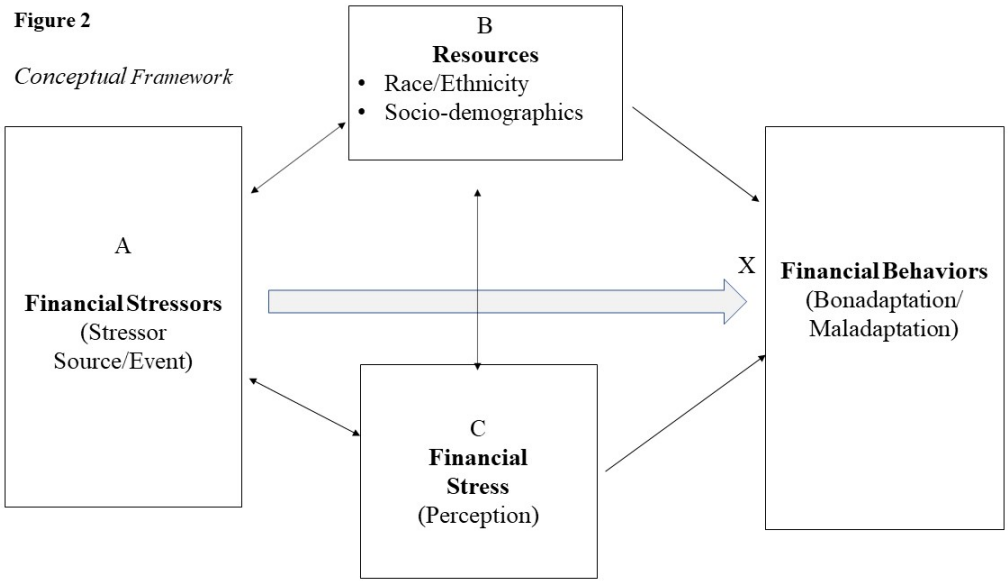


Figure 2 presents the modified ABC-X model for the present study. Although there is extensive literature on financial stressors and its impact on the well-being of individuals and families, the focus of this study is to understand the relationship between financial stress and financial behaviors in response to financial stressors or financial stressor event individuals and families could experience (Archuleta et al., 2013; Falconier & Epstein, 2011; Hardie & Lucas, 2010; Kelley eta al., 2018).

Figure 2

Conceptual Framework



According to Figure 2, using the original ABC-X model, the components of the modified ABC-X model are explained as the following: 1) "A" is the financial stressors such as high levels of debt or a stressful event such as income drop; 2) "B" is the resources such as Race/Ethnicity and other sociodemographic characteristics; 3) "C" is the individuals' perception of stressful feeling; and 4) "X" accounts for either bonadaptation or maladaptation. The modified model does not account for a crisis as shown in the original ABC-X model. Instead, as individuals perceive high levels of financial stress, they could reach maladaptation or bonadaptation. In this revised ABC-X model, bonadaptation is measured by positive financial behavior, while maladaptation is measured by negative financial behavior.

In summary, using the original ABC-X family stress model, we assumed that the experience of financial stressors "A" has led individuals to feel financially stressed. The model assumes that the levels of financial stress "C" will vary based on race/ethnicity as

well as other sociodemographic characteristics “B”. Based on McCubbin and Patterson’s double ABC-X model (1983), as individuals face financial stress, this could lead to two potential outcomes such as maladaptation (negative financial behavior) or bonadaptation (positive financial behavior). Therefore, employing the conceptual framework from both, the original ABC-X model and double ABC-X model of family stress and adaptation as a guide, a set of hypotheses were proposed.

Hypotheses

Based on the ABC-X model (Figure 1) and findings in the literature on the topic, conceptual model and hypotheses are presented below.

H1: Higher levels of financial stress will be positively associated with the levels of financial stressors.

H2: Resources (race/ethnicity, financial knowledge, and socio-demographic characteristics) will be associated with the levels of financial stressors.

H3: Higher levels of financial stressors will be positively associated with the levels of financial stress.

H4: Resources (race/ethnicity, financial knowledge, and socio-demographic characteristics) will be associated with the levels of financial stress.

H5: Higher levels of financial stress will be associated with negative and positive financial behaviors.

H6: Higher levels of financial stressors will be associated with negative and positive financial behaviors.

H7: Resources (race/ethnicity, financial knowledge, and socio-demographic characteristics) will be associated with negative and positive financial behaviors.

CHAPTER III

METHODS

Data and Sample

National Financial Capability Study Data

This study used data from the 2018 National Financial Capability Study (NFCS), which is funded by the Financial Industry Regulatory Authority (FINRA). FINRA is a "government-authorized not-for-profit organization that oversees U.S. broker-dealer" dedicated to protecting investors' rights, ensuring market integrity, and educating investors and consumers (FINRA.org, 2021). FINRA has collected the NFCS data every three years since 2009. There are four waves of the NFCS up to date: 2009, 2012, 2015, and 2018. Each of the four waves collected data through nationwide online surveys of over 25,000 American adults.

The NFCS was designed to "measure perceptions, attitudes, experiences, and behaviors on a wide variety of topics" (USfinancialcapability.org, 2021). It seeks to measure the levels of financial capability of individuals in the U.S. and is updated every year the survey is conducted to keep up with recent financial services. The NFCS also included various indicators of financial capability in American adults. Some of these indicators include resources, financial knowledge, financial skills, decision making, and sociodemographic characteristics. The NFCS is relevant to the purpose of this thesis because it contains information about financial stressors, financial stress, financial behaviors, and socio-demographic characteristics.

Data Collection of NFCS

The 2018 NFCS was conducted by ARC Research, a company that provides market research, organizational research, and data analysis services. The data was gathered by online survey from June to October of 2018. Respondents were identified by using non-probability quota sampling from online panels, which consisted of million individuals who had been recruited to join and were offered incentives for their participation. The panels used for the NFCS survey were provided by Survey Sampling International (SSI), EMI Online Research Solutions, and Research Now (2018 NFCS Methodology report, 2018).

The NFCS data were weighted to be nationally representative in terms of age, gender, ethnicity, education, and Census Division according to the American Community Survey (USfinancialcapability.org, 2021). There are two main surveys for the NFCS: The State-by-State Survey and the Investor Survey. The State-by-State Survey was conducted across a large, diverse sample to provide a comprehensive analysis of the financial capability of the national population as a whole (FINRA, 2020). The Investor Survey focuses on investing decisions of individuals and families. For the purpose of this study, data from the State-by-State Survey (the largest component of the NFCS) were employed.

Sample of the Study

The main purpose of this study was to examine the association among variables such as financial stressors, financial stress, and financial behaviors. Data from the 2018 NFCS was composed of a nationally representative sample of 27,091 respondents. The present study included individuals 22 years of age and older because of the increased

likelihood to be in the work force full-time and hold retirement accounts such as 401(k) and IRA. The current study also included only individuals who responded the survey questions this study focused on. Thus, the respondents who answered 98=" don't know" and 99=" prefer not to say" to the survey questions were excluded from the final study sample. After the data cleaning procedures, the total sample included 5,252 individuals.

To examine the effects of financial stressors and financial stress on financial behaviors across racial/ethnic groups, race/ethnicity was classified by four racial/ethnic subgroups: [White (n=4,137), Black (n=402), Hispanic (n=330), and Asian/Others (American Indian, Other, 2+ ethnicities) (n=383)]. These subsamples allowed to test Hypothesis 2 (Resources (race/ethnicity, financial knowledge, and socio-demographic characteristics) will be associated with the levels of financial stressors), Hypothesis 4 (Resources (race/ethnicity, financial knowledge, and socio-demographic characteristics) will be associated with the levels of financial stress) and Hypothesis 7 (Resources (race/ethnicity, financial knowledge, and socio-demographic characteristics) will be associated with negative and positive financial behaviors).

Variable Measures

Independent Variables

Table 1 presents the measurements of the key independent variables analyzed in this study: 1) financial stress; 2) financial stressors, and 3) race/ethnicity, financial knowledge, and socio-demographic characteristics. To test Hypothesis 2, Hypothesis 4, and Hypothesis 7 (i.e.,, how resources influence the level of financial stressors, financial stress, and financial behaviors). Race/ethnicity was included in the empirical model as

four dummy categorical variables [Black, Hispanic, Asian/other, White (reference group)].

Table 1

Measurements of Key Independent Variables in the Analyses

Variables	Measurements
Resources	
Race/Ethnicity	
Black	1 if R is Black, 0 if otherwise
Hispanic	1 if R is Hispanic, 0 if otherwise
Asian/Other	1 if R is Asian/Other, 0 if otherwise
(White)	1 if R is White, 0 if otherwise
Financial Knowledge	
Subjective Knowledge	Continuous, how would you assess your overall financial knowledge, 1=very low, 7=very high
Objective Knowledge	Continuous, sum of six quiz score, 1=zero corrected, 7=all corrected
Socio-demographic Characteristics:	
Age/Generation:	
Age 22-29	1 if R's age 22-29, 0 if otherwise
Age 30-37	1 if R's age 30-37, 0 if otherwise
Age 38-45	1 if R's age 38-45, 0 if otherwise
Age 46-53	1 if R's age 46-53, 0 if otherwise
Age 54-62	1 if R's age 54-62, 0 if otherwise
(Age 73+)	1 if R's age 73+, 0 if otherwise
Gender:	
Female	1 if R is female, 0 if otherwise
(Male)	1 if R is male, 0 if otherwise
Education:	
High sch. grad	1 if R high school graduate, 0 if otherwise
Some college	1 if R some college, 0 if otherwise
College graduate	1 if R college graduate, 0 if otherwise
(Post college)	1 if R post college degree, 0 if otherwise
Marital Status:	
Never-married	1 if R never married, 0 if otherwise
Unmarried	1 if R separated, divorced, widowed, 0 if otherwise
(Married)	1 if R married, 0 if otherwise
Employment Status:	

Working	1 if R self-employed, work part/full time, 0 if otherwise
(Not-working)	1 if R unemployed, full-time student, permanently sick/disabled, retired, 0 if otherwise
Income Levels:	
$25,000 - $49,999	1 if HH income $25,000-$49,999, 0 if otherwise
$50,000 - $74,999	1 if HH income $50,000-$74,999, 0 if otherwise
$75,000 - $99,999	1 if HH income $75,000-$99,999, 0 if otherwise
$100,000 or more	1 if HH income $100,000+, 0 if otherwise
(Less than $25,000)	1 if HH income <$25,000; 0 if otherwise
Financial Stress:	
Financial stress:	
Low	1 if R reported 1-4, 0 if otherwise
High	1 if R reported 5-7, 0 if otherwise
Financial anxiety:	
Low	1 if R reported 1-4, 0 if otherwise
High	1 if R reported 5-7, 0 if otherwise
Financial worry:	
Low	1 if R reported 1-4, 0 if otherwise
High	1 if R reported 5-7, 0 if otherwise
Financial Stressors:	
Too much debt:	
Low debt	1 if R reported 1-4, 0 if otherwise
High debt	1 if R reported 5-7, 0 if otherwise
Collector calls:	
No calls	1 if R had no calls, 0 if otherwise
Yes calls	1 if R had calls, 0 if otherwise
Unpaid medical bills:	
No bills	1 if R no medical debt, 0 if otherwise
Yes bills	1 if R medical debt, 0 if otherwise
Income drop:	
No drop	1 if R no income drop, 0 if otherwise
Yes drop	1 if R income drop, 0 if otherwise
Inability to pay bills:	
No difficulty	1 if R not at all difficult, 0 if otherwise
Yes difficulty	1 if R very or somewhat difficult, 0 if otherwise

In addition to race/ethnicity, financial knowledge and socio-demographic characteristics were also considered as resource variables in this study. The financial knowledge was measured by subjective and objective financial knowledge. Subjective financial knowledge was measure by a survey question [how would you assess your

overall financial knowledge?] and objective financial knowledge was measure by summing six financial literacy questions that addressed individuals' knowledge on numeracy, interest, inflation, bonds, mortgage, and compound interest.

The socio-demographic characteristics included age, gender, education, marital status, employment status, and income. Age was classified by six dummy categorical variables [ages 22-29, ages 30-37, ages 38-45, ages 46-53, ages 54-62, and ages 63 or older (reference group)]. Other socio-demographic variables were measured as follows: gender [females, (males, reference group)]; education [less than high school/high school graduate, some college, college graduates, (post-college, reference group)]; marital status [married, (non-married, reference group)]; employment status [working, (non-working, reference group)]; and income level [$25,000-$49,999, $50,000-$74,999, $75,000-$99,999, more than $100,000, (less than $25,000, reference group)].

To test Hypothesis 1 and Hypothesis 5, financial stress was measured by three survey questions: 1) financial stress—"how strongly do you agree or disagree with the following statements –discussing my finances can make my heart race or make me feel stressed"(J33_41); financial anxiety—"how strongly do you agree or disagree with the following statements —thinking about my personal finances can make me feel anxious" (J33_40); and financial worry—"how strongly do you agree or disagree with the following statements —I worry about running out of money in retirement" (J33_1) . These three questions were measured on a 7 point-Likert scale where 1 = Strongly disagree, 4= Neither agree nor disagree, and 7= Strongly agree. This scale was recoded to measure high levels of financial stress, financial anxiety, and financial worry. High financial stress was coded 1= if R reported 5-7, 0 if otherwise; high financial anxiety

coded 1= if R reported 5-7, 0 if otherwise; and financial worry coded 1= if R reported 5-7, 0 if otherwise.

To test Hypothesis 3 and Hypothesis 6, financial stressors were measured by five financial stressor sources/event: 1) too much debt, 2) collector calls, 3) unpaid medical bills, 4) income drop, and 5) inability to pay bills. These five variables were included as dummy categorical variables in the multivariate analyses. To measure the "too much debt" variable, a question in the NFCS survey was used: "How strongly do you agree or disagree with the following statement? – I have too much debt right now "(G23). The answer was measured on a 7 point-Likert scale where 1 = Strongly disagree, 4= Neither agree nor disagree, and 7= Strongly agree. This scale was recoded to measure low debt and high debt where 1= if R reported 1-4, 0 if otherwise for low debt and 1= if R reported 5-7, 0 if otherwise for high debt.

Collector calls, unpaid medical bills, and income drop are asked in a yes and no question format in the original survey. The variables were coded as: collector calls [1 if R had no calls, 0 if otherwise; 1 if R had calls, 0 if otherwise], unpaid medical bills [1 if R no medical debt, 0 if otherwise; 1 if R medical debt, 0 if otherwise], income drop [1 if R no income drop, 0 if otherwise; 1 if R income drop, 0 if otherwise]. Inability to pay bills is asked in the data set: "in a typical month, how difficult is it for you to cover your expenses and pay all your bills?" (J4). The response for this survey question is formatted as 1= Very difficult, 2= Somewhat difficult, and 3= Not at all difficult. This variable was recoded as inability to pay bills [1 if R not at all difficult, 0 if otherwise; 1 if R very or somewhat difficult, 0 if otherwise].

Dependent variables

In this study, there are four major dependent variables: 1) financial stressors, 2) financial stress, 3) positive financial behaviors (bonadaptation), and 4) negative financial behaviors (maladaptation). Table 2 shows the measurements of the key dependent variables used in the present study. To test Hypothesis 1 and Hypothesis 2, financial stressors was a continuous variable. This index variable was created by summing five financial stressor events where too much debt (0-1), collector calls (0-1), unpaid medical bills (0-1), income drop (0-1), and inability to pay bills (1-0). The variable ranges 0-1, but was recoded where 0=1, 5=6, to get a rage 1-6.

To test Hypothesis 3 and Hypothesis 4, financial stress was a continuous variable. This index variable was created by summing three financial stress feelings: financial stress ["discussing my finances can make my heart race or make me feel stressed"] (1-7), financial anxiety ["thinking about my personal finances can make me feel anxious"] (1-7), and financial worry ["I worry about running out of money in retirement"] (1-7). The sum of the index variable ranges 3-21.

To test Hypothesis 5, Hypothesis 6, and Hypothesis 7, both negative and positive financial behaviors were measured by continuous variables. In this study, negative financial behavior was a continuous variable. This index variable was created by summing seven behaviors: mortgage delinquency (0-1), credit card delinquency (0-1), credit limit overdraw (0-1), checking account overdraw (0-1), retirement withdrawal (0-1), hardship withdrawal (0-1), payday lender use (0-1). The variables where recoded where 0=1 and 7=8, for a rage of 1-8. An index variable for positive financial behaviors was also created by summing seven behaviors: spend within budget (0-1), pay credit card

bill on time (0-1), have emergency fund (1-0), own stocks (0-1), have IRAs (0-1), have 401(K) (1-0), have will (0-1). The total rage of positive financial behaviors was 1-7. Figure 4 presents the hypotheses and variable measurements based on these key independent and dependent variables.

Table 2.

Measurements of Key Dependent Variables in the Multivariate Analyses

Variables	Measurements
Financial Stressors	Continuous, sum of five financial stressor source/events – too much debt (0-1), collector calls (0-1), unpaid medical bills (0-1), income drop (0-1), inability to pay bills (1-0), recoded 0=1, 5=6, range 1-6
Financial Stress	Continuous, sum of three financial stress feelings – financial stress (1-7), financial anxiety (1-7), financial worry (1-7), range 3-21
Negative Financial Behavior	Continuous, sum of seven negative financial behaviors – mortgage delinquency (0-1), credit card delinquency (0-1), credit limit overdraw (0-1), checking account overdraw (0-1), retirement withdrawal (0-1), hardship withdrawal (0-1), payday lender use (0-1), recoded 0=1, 7=8, range 1-8.
Positive Financial Behavior	Continuous, sum of seven positive financial behaviors – spend within budget (0-1), pay credit card bill in full (0-1), have emergency fund (1-0), own stocks (0-1), have IRAs (0-1), have 401(K) (1-0), have will (0-1), range 1-7

To test Hypothesis 5, Hypothesis 6, and Hypothesis 7, both negative and positive financial behaviors were measured by continuous variables. In this study, negative financial behavior was a continuous variable. This index variable was created by

summing seven behaviors: mortgage delinquency (0-1), credit card delinquency (0-1), credit limit overdraw (0-1), checking account overdraw (0-1), retirement withdrawal (0-1), hardship withdrawal (0-1), payday lender use (0-1). The variables where recoded where 0=1 and 7=8, for a rage of 1-8. An index variable for positive financial behaviors was also created by summing seven behaviors: spend within budget (0-1), pay credit card bill on time (0-1), have emergency fund (1-0), own stocks (0-1), have IRAs (0-1), have 401(K) (1-0), have will (0-1). The total rage of positive financial behaviors was 1-7. Figure 4 presents the hypotheses and variable measurements based on these key independent and dependent variables.

Statistical Analyses

To obtain descriptive statistics on all key independent and dependent variables included in the present study, frequencies, percentages, means, and medians were presented. To compare the differences in the mean levels and proportions of financial stressors, financial stress, resources, and financial behaviors, t-tests, ANOVA, and χ^2-tests were conducted. In multivariate analyses, to examine the effects of financial stress and resources (race/ethnicity, financial knowledge, and socio-demographics) on the levels of financial stressors, Ordinary Least Squares (OLS) regression analyses were performed (H1 and H2). To examine the effects of financial stressors and socio-demographic factors on the levels of financial stress, OLS regression analyses were also conducted (H3 and H4). Further, to examine the effects of financial stress, financial stressors, and resources (race/ethnicity, financial knowledge, and socio-demographics) on

negative and positive financial behaviors, OLS regression analyses were accomplished (H5, H6, and H7).

CHAPTER IV RESULTS

Descriptive Results

Sample Characteristics

Table 3 shows the characteristics of the study sample (N=5,252). The racial distribution of the sample was White (78.8%), Black (7.6%), Asian/Other (7.3%), and Hispanic (6.3%). In terms of age, 6% of the study sample was between the ages of 22-29, 19.2% was between the ages of 30-37, 16.8% was between the ages of 38-45, 17.8% was between the ages of 46-53, 19.8% was between the ages of 54-62, and 20.4% of the sample was 63 years of age and older. More than half of the sample was male (54.2%) and 45.8% was female. As for educational attainment, 14.4% had completed high school or less, 33.5% had some college education, 30.1% completed college, and 22% had post college education.

Table 3 also shows that 74.4% of them were married, 14.9% were never married, and 10.6% were unmarried (divorced, widowed, or separated). More than half of the sample reported they worked full time or part time (74.3%) and 25.7% of the sample were not working in the labor force (unemployed, permanently sick/disabled, or retired). As for the income levels for the study sample, 2.1% reported their income levels less than $25,000, 11.3% reported their income levels between $25,000-$49,999, 19.9% reported their income levels between $50,000-$74,999, 24.4% reported their income levels between $75,000-$99,999, and 42.3% reported their income levels of $100,000 or higher.

Table 3.

Sample Characteristics (N=5,252)

Variables	Mean (Median) Frequency (%)
Socio-demographic Characteristics:	
Race/Ethnicity:	
Black	402 (7.6%)
Hispanic	330 (6.3%)
Asian/Other	383 (7.3%)
White	4,137 (78.8%)
Age/Generation:	
Age 22-29	314 (6.0%)
Age 30-37	1,009 (19.2%)
Age 38-45	882 (16.8%)
Age 46-53	936 (17.8%)
Age 54-62	1,042 (19.8%)
Age 63+	1,069 (20.4%)
Gender:	
Female	2,407 (45.8%)
Male	2,845 (54.2%)
Education:	
High school drop/grad	755 (14.4%)
Some college	1,758 (33.5%)
College graduate	1,582 (30.1%)
Post college	1,157 (22.0%)
Marital Status:	
Never-married	784 (14.9%)
Unmarried	559 (10.6%)
Married	3,909 (74.4%)
Employment Status:	
Working	3,531 (74.3%)
Not-working	1,350 (25.7%)
Income Levels:	
Less than $25,000	111 (2.1%)
$25,000 - $49,999	595 (11.3%)
$50,000 - $74,999	1,046 (19.9%)
$75,000 - $99,999	1,279 (24.4%)
$100,000 or more	2,221 (42.3%)
Subjective financial knowledge	5.6 (6.0)
Objective financial knowledge	4.9 (5.0)

Financial Stressors, Financial Stress, and Financial Behaviors

Table 4 shows the descriptive results of financial stressors, financial stress, and financial behaviors of the study sample (N=5,252). Financial stressors included five financial stressor variables (i.e., having too much debt, having collector calls, having unpaid medical bills, experiencing income drop, and experiencing inability to pay bills). It shows that 40.6% of the study sample reported that they had too much debt; 14.4 % of them reported that they had been contacted by collection agency, and 18% of the sample reported to have unpaid medical bills. Also, 17.8% reported they have experienced income drop. About 33.9% of the sample reported that they have experienced inability to pay bills. The average level for the sum of these five financial stressors/events was 2.3 where 1 means no experience with any of such events. This means that individuals in this study sample experienced one or more financial stressors.

In this study, financial stress was measured by summing the following questions: 1) Talking about my finances makes me feel stressed (1-7); 2) Thinking about my finances makes me feel anxious (1-7); and 3) worrying about running out of money during retirement (1-7). The average level for the sum of these three measures for financial stress was 12.5 where it ranged from minimum 3 to maximum 21. Table 4 shows that 38.5 % of the sample reported high levels of financial stress, 49.6 % of them reported high levels of financial anxiety, and 53.8% reported high levels of financial worry.

Table 4.

Descriptive results: Financial Stressors, Financial Stress, and Financial Behaviors (N=5,252)

	Mean (Median) Frequency (Percentages)
Financial Stressors:	
Sum of five financial stressor sources (1-6):	2.3 (2.0)
Have too much debt:	
No	3,118 (59.4%)
Yes	2,134 (40.6%)
Have collector calls:	
No	4,496 (85.6%)
Yes	756 (14.4%)
Have unpaid medical bills:	
No	4,307 (82.0%)
Yes	945 (18.0%)
Experience income drop:	
No	4,316 (82.2%)
Yes	936 (17.8%)
Have inability to pay bills:	
No	3,470 (66.1%)
Yes	1,782 (33.9%)
Financial Stress:	
Sum of three financial stress feelings (3-21):	12.5 (13.0)
Financial stress (1-7):	
Low (1-4)	3,231 (61.5%)
High (5-7)	2,021 (38.5%)
Financial anxiety (1-7):	
Low (1-4)	2,648 (50.4%)
High (5-7)	2,604 (49.6%)
Financial worry (1-7):	
Low (1-4)	2,426 (46.2%)
High (5-7)	2,826 (53.8%)
Positive Financial Behaviors:	
Sum of seven positive financial behaviors (1-8):	5.7 (6.0)
Spend within budget:	
No	918 (17.5%)
Yes	4,334 (82.5%)
Pay credit card bill in full:	
No	2,199 (41.9%)
Yes	3,053 (58.1%)
Have emergency fund:	
No	1,529 (29.1%)
Yes	3,723 (70.9%)

Own stocks:	
No	2,290 (43.6%)
Yes	2,962 (56.4%)
Have 401ks:	
No	390 (7.4%)
Yes	4,862 (92.6%)
Have IRAs:	
No	1,704 (32.4%)
Yes	3,548 (67.6%)
Have will:	
No	2,536 (48.3%)
Yes	2,716 (51.7%)
Negative Financial Behaviors:	
Sum of seven negative financial behaviors (1-8):	2.0 (1.0)
Have been mortgage delinquent:	
No	4,521 (86.1%)
Yes	731 (13.9%)
Have been credit card delinquent:	
No	4,464 (85.0%)
Yes	788 (15.0%)
Have overdrawn credit limit:	
No	4,710 (89.7%)
Yes	542 (10.3%)
Have overdrawn checking account:	
No	4,264 (81.2%)
Yes	988 (18.8%)
Have taken retirement withdrawal:	
No	4,427 (84.3%)
Yes	825 (15.7%)
Have taken hardship withdrawal:	
No	4,648 (88.5%)
Yes	602 (11.5%)
Have used payday lenders:	
No	4,648 (88.5%)
Yes	602 (11.5%)

In this study, positive financial behavior (i.e., bonadaptation) was measured by summing seven financial behaviors (e.g., spending within budget, paying credit card bill in full, having emergency fund, owning stocks, having 401(k)s, having IRAs, and having a will). The average level for the sum of these seven positive financial behaviors was 5.7,

which means that typical individuals in this study practiced at least four or more positive financial behaviors. Table 4 shows that 82.5% reported that they were spending within their budget. More than half of the sample (58.1%) reported that they were paying their credit card bills in full. About 71% reported that they had an emergency fund. More than half (56.4%) reported to have stock, 92.6% reported to have a 401(k), and 67.6% reported to have an IRA. Only 51.7% of the sample reported to have a will.

Negative financial behavior (i.e., Maladaptation) was measured by summing seven negative financial behaviors, which include having been mortgage delinquent, having been credit card delinquent, having overdrawn credit limit, having overdrawn checking account, having taken a retirement withdrawal, having taken hardship withdrawal, and having used payday lenders. The average level for the sum of these seven negative financial behaviors was 2.0, which means that typical individuals in this study practice one negative financial behavior. Table 4 shows that 13.9% of the sample reported to have been delinquent on their mortgage, 15% reported to have been delinquent on their credit card payments, and 10.3% reported to have overdrawn their credit limit. In addition, 18.8% of the sample reported to have overdrawn their checking accounts, 15.7% of the sample reported to have taken a withdrawal from their retirement accounts, and 11.5% had taken a hardship withdrawal from their retirement accounts. Lastly, 11.5% of the sample reported to have used payday lenders.

Financial Stressors, Financial Stress, and Financial Behaviors across Race/Ethnicity

Table 5 showed the results from the Analysis of Variance (ANOVA) that compared the means of financial stressors, financial stress, and financial behaviors across race/ethnicity. In this study, financial stressors were measured by summing five financial

stressor sources/events: 1) too much debt, 2) collector calls, 3) unpaid medical bills, 4) income drop, and 5) inability to pay bills. The range was 1-6 (1=not having financial stressor source and 6=was having all five stressor sources/events). There were significant differences in mean levels of financial stressors across the racial/ethnic groups ($p<.001$, $F=180.32^{***}$). The ANOVA results showed that Black individuals had the highest level of financial stressors ($M=3.9$), followed by Hispanic ($M=2.3$), White ($M=2.1$), and Asian/Other individuals ($M=2.0$).

Table 5.

Descriptive Results: Analysis of Variance (ANOVA)
Financial Stressors, Financial Stress, and Financial Behaviors across Race/Ethnic Groups

	White (n=4137)	Black (n=402)	Hispanic (n=330)	Asian/Other (n=383)	Test Statistics
Financial Stressors: (1-6)	2.1	3.9	2.3	2.0	F= 180.32***
Financial Stress: (3-21)	12.2	15.6	13.1	12.3	F= 51.31***
Positive Financial Behaviors: (1-8)	5.7	6.1	5.3	5.8	F= 14.02***
Negative Financial Behaviors: (1-8)	1.8	4.7	2.0	1.8	F= 342.10***

*$p<.05$, **$p<.01$, ***$p<.001$

Financial stress was measured by three survey questions: 1) financial stress—"how strongly do you agree or disagree with the following statements –discussing my finances can make my heart race or make me feel stressed"; 2) financial anxiety—"how strongly do you agree or disagree with the following statements —thinking about my personal finances can make me feel anxious"; and 3) financial worry—"how strongly do you agree or disagree with the following statements —I worry about running out of money in retirement." These three survey questions are measured on a 7 point-Likert scale where 1 = Strongly disagree, 4= Neither agree nor disagree, and 7= Strongly agree. The range of financial stress was 3-21. There were significant differences in financial stress across the racial/ethnic groups ($p<.001$, $F= 51.31^{***}$). The ANOVA results showed that Black individuals presented the highest levels of financial stress (M=15.6). Black individuals were followed by Hispanic individuals (M=13.1), Asian/Other individuals (M=12.3), and White individuals (M=12.2).

Positive financial behavior (i.e., bonadaptation) was measured by the sum of seven continuous variables: spend within budget (0-1), pay credit card bill in full (0-1), have emergency fund (1-0), own stocks (0-1), have IRAs (0-1), have 401(K) (1-0), have will (0-1). The total range was 1-7. There were significant differences in financial stress across the racial/ethnic groups ($p<.001$, $F= 14.02^{***}$). The ANOVA results showed that Black individuals reported the highest level of positive financial behavior (M=6.1) across the four racial/ethnic groups, followed by Asians/Other individuals (M=5.8), White individuals (M=5.7), and Hispanic individuals (M=5.3). Negative financial behavior was measured by the sum of seven continuous variables: mortgage delinquency (0-1), credit card delinquency (0-1), overdrawn credit limit (0-1), overdrawn checking account (0-1),

taken retirement withdrawal (0-1), taken hardship withdrawal (0-1), and use of payday lenders (0-1). These variables were recoded to 0=1 and 7=8 for a range of 1-8. There were significant differences in negative financial behavior across the racial/ethnic groups (p<.001, $F=342.10^{***}$). The ANOVA results showed that Black individuals had the most negative financial behavior (M=4.7), followed by Hispanic individuals (M=2.0), and White and Asian/Other individuals (M=1.8).

Table 6 showed the results from the Chi-Square test for financial stressors, financial stress, and financial behaviors across race/ethnicity. There were significant differences in *having too much debt* across the racial/ethnic groups (p<.001, $\chi^2 = 127.35^{***}$). The descriptive results showed that for financial stressors, Black individuals reported the highest proportion of having too much debt (66.9%), while Asian/Other reported the lowest proportion of having too much debt (35.3%) among the four racial/ethnic groups. There were also significant differences in *having collector calls* across the racial/ethnic groups (p<.001, $\chi^2 = 499.59^{***}$). The results showed that Black individuals reported the highest proportion of having collector calls (51.7%), while Asian/Other reported the lowest proportion of having too much debt (9.1%). Similarly, there were significant differences in *having unpaid medical bills* across the racial/ethnic groups (p<.001, $\chi^2 = 389.12^{***}$). The results showed that Black individuals reported the highest proportion of having unpaid medical bills (53.7%), while Asian/Other reported the lowest proportion of having unpaid medical bills (9.9%).

There were significant differences in *experiencing income drop* across the four racial/ethnic groups (p<.001, $\chi^2 = 369.33^{***}$). The results showed that Black individuals reported the highest proportion of experiencing income drop (52.7%), while White and

Asian/Other individuals reported the lowest proportion of experiencing income drop (14.5% and 14.4%, respectively). There were significant differences in *having inability to pay bills* across the racial/ethnic groups ($p<.001$, $\chi^2 = 165.82^{***}$). The results showed that consistent with other financial stressors, Black individuals reported the highest proportion of experiencing income drop (62.9%), while Asian/Other individuals reported the lowest proportion of experiencing income drop (29.0%). Across the five financial stressors categories, Black individuals reported the highest percentage of financial stressors, while Asian/Other individuals reported the lowest percentage for all five categories. Hispanic individuals and White individuals followed Black individuals in terms of percentage, respectively.

Table 6

Descriptive Results Chi-Square Tests
Financial Stressors, Financial Stress, and Financial Behaviors across Race/Ethnic groups

	White (n=4137)	Black (n=402)	Hispanic (n=330)	Asian/Other (n=383)	Test-statistics
Financial Stressors:					
Have too much debt:					
No	61.5%	33.1%	58.8%	64.7%	$\chi^2 = 127.35^{***}$
Yes	38.5%	66.9%	41.2%	35.3%	
Have collector calls:					
No	88.9%	48.3%	84.2%	90.0%	$\chi^2 = 499.59^{***}$
Yes	11.1%	51.7%	15.8%	9.1%	
Have unpaid medical bills:					
No	84.9%	46.3%	80.0%	90.1%	$\chi^2 = 389.12^{***}$
Yes	15.1%	53.7%	20.0%	9.9%	
Experience income drop:					
No	85.5%	47.3%	79.7%	85.6%	$\chi^2 = 369.33^{***}$
Yes	14.5%	52.7%	20.3%	14.4%	
Have inability to pay bills:					
No	68.5%	37.1%	65.5%	71.0%	$\chi^2 = 165.82^{***}$
Yes	31.5%	62.9%	34.5%	29.0%	

Financial Stress:					
Financial stress:					
Low (1-4)	64.2%	37.3%	56.7%	62.4%	$\chi^2 = 115.25^{***}$
High (5-7)	35.8%	62.7%	43.3%	37.6%	
Financial anxiety:					
Low (1-4)	51.9%	31.3%	47.9%	56.1%	$\chi^2 = 68.23^{***}$
High (5-7)	48.1%	68.7%	52.1%	43.9%	
Financial worry:					
Low (1-4)	47.7%	29.9%	44.2%	48.8%	$\chi^2 = 48.51^{***}$
High (5-7)	52.3%	70.1%	55.8%	51.2%	
Positive Financial Behaviors:					
Spend within budget:					
No	15.3%	38.6%	18.8%	17.5%	$\chi^2 = 137.52^{**}$
Yes	84.7%	61.4%	81.2%	82.5%	
Pay credit card bill in full:					
No	43.0%	31.6%	51.5%	32.4%	$\chi^2 = 46.33^{***}$
Yes	57.0%	68.4%	48.5%	67.6%	
Have emergency fund:					
No	29.8%	21.6%	30.6%	27.9%	$\chi^2 = 12.51^{***}$
Yes	70.2%	78.4%	69.4%	72.1%	
Own stocks:					
No	44.9%	27.6%	53.0%	38.4%	$\chi^2 = 60.75^{**}$
Yes	55.1%	72.4%	47.0%	61.6%	
Have 401ks:					
No	8.2%	3.5%	5.5%	4.4%	$\chi^2 = 19.95^{***}$
Yes	91.8%	96.5%	94.5%	95.6%	
Have IRAs:					
No	32.3%	24.9%	41.8%	33.4%	$\chi^2 = 23.92^{***}$
Yes	67.7%	75.1%	58.2%	66.6%	
Have will:					
No	48.2%	32.6%	57.6%	57.7%	$\chi^2 = 64.69^{***}$
Yes	51.8%	67.4%	42.4%	42.3%	
Negative Financial Behaviors:					
Mortgage delinquent:					
No	89.4%	46.8%	86.4%	90.9%	$\chi^2 = 465.82^{***}$
Yes	10.6%	53.2%	13.6%	9.1%	
Credit card delinquent:					
No	88.5%	49.0%	83.3%	86.2%	$\chi^2 = 449.70^{***}$
Yes	11.5%	51.0%	16.7%	13.8%	
Overdrawn credit limit:					
No	93.0%	50.5%	91.5%	93.2%	$\chi^2 = 722.92^{***}$
Yes	7.0%	49.5%	8.5%	6.8%	
Overdrawn checking account:					
No	85.0%	41.8%	80.3%	82.3%	$\chi^2 = 448.12^{***}$
Yes	15.0%	58.2%	19.7%	17.7%	

Taken retirement withdrawal:					
No	87.4%	49.3%	82.4%	89.6%	$\chi^2 = 410.99^{***}$
Yes	12.6%	50.7%	17.6%	10.4%	
Taken hardship withdrawal:					
No	91.7%	50.0%	90.3%	92.7%	$\chi^2 = 637.74^{***}$
Yes	8.3%	50.0%	9.7%	7.3%	
Used payday lenders:					
No	90.0%	47.0%	85.1%	89.6%	$\chi^2 = 577.34^{***}$
Yes	10.0%	53.0%	14.9%	10.4%	

$^{*}p<.05, ^{**}p<.01, ^{***}p<.001$

Table 6 also showed the Chi-Square test results for financial stress. The results indicated that there were significant differences in financial stress across the racial/ethnic groups ($p<.001$, $\chi^2 = 115.25^{***}$). Black and Hispanic individuals reported higher proportions of financial stress (62.7% and 43.3% respectively), while White individuals reported the lowest proportion of high financial stress (35.8%). There were also significant differences in financial anxiety across the racial/ethnic groups ($p<.001$, $\chi^2 = 68.23^{***}$). Black and Hispanic individuals reported higher proportions of financial anxiety (68.7% and 52.1% respectively), while Asian/Other individuals reported lowest proportion of high financial anxiety (43.9%). There were contradicting and significant differences in financial worry across the racial/ethnic groups ($p<.001$,$\chi^2 = 48.51^{***}$). Hispanic individuals reported high levels of financial worry (55.8%), while Asian/Other individuals reported lower levels of high financial worry (51.2%).

As for the positive financial behavior (Bonadaptation), Table 6 showed that there were significant differences in *spending within budget* across the four racial/ethnic groups ($p<.01$, $\chi^2 = 137.52^{**}$). White and Asian/Other individuals reported to spend within their budget (84.7% and 82.5% respectively), while Black individuals reported lower

percentage of spending within budget (61.4%). There were also significant difference in *paying credit card bill in full* across the racial/ethnic groups – ($p<.001$, $\chi^2 = 46.33^{***}$). Black individuals reported higher percentage of paying their credit card bill on time (68.4%), while Hispanic individuals reported lower percentage of paying their credit card bill in full (48.5%). Across the seven positive financial behaviors categories, Black individuals reported the highest percentage of positive financial behaviors, while Hispanic individuals reported the lowest percentage for most categories with the exception of *having a 401k*. There were significant difference in *having a 401k* across the racial/ethnic groups ($p<.001$ ($\chi^2 = 19.95^{***}$). Black individuals reported higher percentage of paying their credit card bill in full (68.4%), while Hispanic individuals reported lower percentage of paying their credit card bill in full (48.5%).

As for the negative financial behaviors (Maladaptation), Table 6 showed that there were significant differences in *mortgage delinquency* among the four groups ($p<.001$, $\chi^2 = 465.82^{***}$). Black individuals reported highest percentage of being mortgage delinquent (53.2%), whereas Asian/Other individuals reported lowest percentage of being mortgage delinquent (9.1%). There were also significant difference in *credit card delinquency* across the racial/ethnic groups ($p<.001$ ($\chi^2 = 449.70^{***}$). Black individuals reported highest percentage of credit card delinquency (51.0%), while White individuals reported lowest percentage of credit card delinquency (11.5%). Similar findings were shown in overdrawing credit limit, taken retirement withdrawal, and taken hardship withdrawal categories, indicating that Black individuals reported the highest percentage for these categories. In contrast, Asian/Other individuals reported the lowest percentages for these negative financial behavior categories. Specifically, Black individuals reported

highest percentages for overdrawing checking account and using payday lenders (49.5% and 53.0%, respectively), while White individuals reported lowest percentages of *overdrawing checking account* and *using payday lenders* (15.0% and 10.0%, respectively).

Descriptive Results of Financial Stressors, Financial Stress, and Financial Behaviors across Sociodemographic Characteristics.

Table 7 showed the results from the Analysis of Variance (ANOVA) and t-test that compared the means of financial stressors, financial stress, and financial behaviors by sociodemographic characteristics of the respondents. The results showed that there were significant differences in financial stressors ($p<.001$, $F=180.32^{***}$) across age. The results showed that individuals between the ages of 30-37 had the highest level of financial stressors ($M=3.3$), followed by individuals between the ages of 22-29 ($M=3.0$), while individuals between ages 63 and older had the lowest levels of financial stressors ($M=1.5$). There were also significant difference across education ($p<.001$, $F=56.16^{***}$), marital status ($p<.001$, $F=117.09^{***}$), and income levels ($p<.001$, $F=81.76^{***}$). The results showed that individuals with a high school education ($M=2.4$) and some college ($M=2.6$) reported the higher levels of financial stressors. The results showed that individuals who have never been married reported the highest level of financial stressors ($M=3.0$). Lastly, individuals with income less than $25,000 ($M=3.0$) and $75,000-$99,999 ($M=2.7$) reported the higher levels of financial stressors. The t-test results showed significant differences across gender ($p<.001$, $t=2.65^{**}$) and employment status ($p<.001$, $t=15.32^{***}$).

Table 7 showed that there were significant differences in financial stress across six age groups ($p<.001$, $F=108.18^{***}$). The results showed that individuals between the

ages of 30-37 had the highest level of financial stress (*M*=15.0), followed by individuals between the ages of 22-29 (*M*=13.9), while individuals between ages 63 and older presented the lowest levels of financial stress (*M*=10.0). There were also significant difference across education levels ($p<.001$, $F=23.75^{***}$). The results showed that individuals with a high school education (*M*=13.0) and some college education presented (*M*=13.2) reported the highest levels of financial stress as compared those with college degree or post-college degree.

Table 7.

Descriptive Results – Analysis of Variance (ANOVA) and t-tests
Financial Stressors, Financial Stress, Positive and Negative Financial Behaviors across Socio-Demographics (N=5,252)

	Financial Stressors (1-6)	Financial Stress (3-21)	Positive Behaviors (1-8)	Negative Behaviors (1-8)
Age/Generation:				
Age 22-29	3.0	13.9	5.6	3.2
Age 30-37	3.3	15.0	5.8	3.5
Age 38-45	2.3	13.3	5.3	2.0
Age 46-53	2.0	12.6	5.3	1.5
Age 54-62	1.8	11.6	5.8	1.4
(Age 63+)	1.5	10.0	6.3	1.2
	$F= 200.15^{***}$	$F= 108.18^{***}$	$F= 42.72^{***}$	$F= 263.58^{***}$
Gender:				
Male	2.3	12.2	6.0	2.2
Female	2.2	12.9	5.4	1.7
	$t= 2.65^{**}$	$t= -4.80^{***}$	$t= 11.41^{***}$	$t= 9.73^{***}$
Education:				
High school drop/grad	2.4	13.0	5.4	2.2
Some college	2.6	13.2	5.5	2.4
College graduate	2.0	12.0	5.8	1.7
Post college	2.0	11.8	6.1	1.7
	$F= 56.16^{***}$	$F= 23.75^{***}$	$F= 35.31^{***}$	$F= 50.10^{***}$
Marital Status:				
Married	2.1	12.3	5.7	1.8
Never-married	3.0	14.2	5.8	3.1
Unmarried	1.9	11.9	5.5	1.5
	$F= 117.09^{***}$	$F= 47.25^{***}$	$F= 7.28^{***}$	$F= 162.91^{***}$

Employment Status:				
Working	2.4	13.1	5.6	2.2
Not-working	1.8	10.7	6.0	1.4
	t= 15.32***	*t= 14.19****	*t= 6.78****	*t= 4.46****
Income Levels:				
Less than $25,000	3.0	14.7	5.1	2.9
$25,000 - $49,999	2.5	13.5	5.2	1.9
$50,000 - $74,999	2.4	12.9	5.3	1.9
$75,000 - $99,999	2.7	13.6	5.8	2.7
$100,000 or more	1.8	11.3	6.1	1.6
	F= 81.76***	*F= 50.60****	*F= 54*.12***	*F= 72.21****

$^{*}p<.05$, $^{**}p<.01$, $^{***}p<.001$

There were significant difference in levels of financial stress across three marital groups ($p<.001$, $F=117.09^{***}$), indicating that individuals who have never been married reported the highest levels of financial stress (M=14.2). Lastly, there were significant differences across income levels ($p<.001$, $F=47.25^{***}$), showing that individuals with income less than $25,000 ($M$=14.7) reported the highest level of financial stress based on income levels, while individuals with income $100,000 or more reported the lowest level of financial stress. The t-test results showed significant differences in financial stress across gender ($p<.001$, t=-4.80***) as well as employment status ($p<.001$, t=14.19***).

Table 7 also showed that there were significant differences in positive financial behaviors across age ($p<.001$, $F=42.72^{***}$). The results showed that individuals age 63 and older had the highest level of positive financial behavior (M=6.3), followed by individuals between the ages of 39-45 and 46-53 (M=5.3), while individuals between ages 22-29 had the lowest levels of positive financial behavior (M=5.6). There were also significant differences across education levels ($p<.001$, $F=35.31^{***}$). The results showed that individuals with post college education (M=6.1) and some college education (M=13.2) had the highest levels of positive financial behavior. In terms of marital status,

the results showed that individuals who have never been married reported the highest levels of positive financial behavior (*M*=5.8) and this difference was statistically significant ((*p*<.001, *F=7.28****). Lastly, individuals with income level $75,000-$99,999 (*M*=5.8) reported the highest levels of positive financial behavior based on income levels, while individuals with income less than $25,000 reported low levels of positive financial behavior. The t-test results show significant differences across gender (*p*<.001, t=-11.41***) where men had higher level of positive financial behavior compared to women (*M*=6.0); and employment status (*p*<.001, t=6.78***) where non-working individuals reported higher level of positive financial behaviors than working individuals did (*M*=6.0).

There were significant differences in negative financial behaviors for all socio-demographic characteristics of the respondents. The results showed that individuals of age between 30-37 reported the highest level of negative financial behavior (*M*=3.5). A similar result was seen in individuals between the ages 22-29, that they also reported higher level of negative financial behavior (*M*=3.2). The results showed that individuals with high school education (*M*=2.2) and some college (*M*=2.4) reported the higher levels of negative financial behaviors than the other two education groups. Table 7 showed that individuals who had never been married reported the highest level of negative financial behaviors (*M*=3.1). In terms of income levels, individuals with income less than $25,000 (*M*=2.9) reported the highest level of negative financial behavior among the four income groups, while individuals with income $100,000 or more reported the lowest level of negative financial behaviors.

Multivariate Results

OLS Regression Results: Determinants of Financial Stressors

Table 8 presents the OLS results that showed significant predictors associated with the level of financial stressors. In this OLS regression model, we included financial stress and resource variables as key factors to test the Hypothesis 1(Higher levels of financial stress will be positively associated with higher levels of financial stressors) and Hypothesis 2 (Race/Ethnicity, financial knowledge, and socio-demographic characteristics will be associated with the levels of financial stressors). As resource variables, we included race/ethnicity, financial knowledge, age, gender, education, marital status, employment status, and income. in the regression model The OLS regression results showed an Adj-R^2 = 0.52 and F = 235.89 (*df*=24), p<.0001, indicating that 52% of the variance was explained by the variables included in this model and the model fits well.

The OLS results showed that the coefficient associated with high financial stress was statistically significant and positive (*β=0.831, p<.0001*), meaning that as compared to those with low financial stress, those with high financial stress reported higher levels of financial stressors. The OLS results also show that the coefficient associated with high financial anxiety was statistically significant and positive (*β=0.622, p<.0001*), suggesting that as compared to those with low financial anxiety, those with high financial anxiety reported higher levels of financial stressors. Lastly, the coefficient associated with high financial worry was statistically significant and positive (*β=0.141*, *p<.0001*) as well,

meaning that as compared to those with low financial worry, those with high financial worry reported higher levels of financial stressors.

In this study, race/ethnicity and other socio-demographic characteristics were included as resources based on the conceptual framework. The OLS results in Table 8 showed that all else being equal, Black individuals reported higher level of financial stressors than their White counterparts (*β=0.663, p<.0001).* On the other hand, the results showed that all else being equal, Asian/Other individuals reported lower levels of financial stressors than White individuals did (*β=-0.182, p<.0013).* In addition, two coefficients associated with financial knowledge were statistically significant, but in opposite directions. The results indicated that while subjective financial knowledge increased the level of financial stressors, objective financial knowledge decreased the level of financial stressors.

Table 8.

OLS Results – Determinants of Financial Stressors (N=5,252)

	β	SE	P-value	b
Financial Stress (H1)				
Financial stress: (Low)				
High	0.831	0.046	<.0001	0.247
Financial anxiety: (Low)				
High	0.622	0.048	<.0001	0.189
Financial worry: (Low)				
High	0.141	0.039	<.0001	0.125
Resources: (H2)				
Race/Ethnicity: (White)				
Black	0.663	0.059	<.0001	0.120
Hispanic	-0.093	0.052	0.0756	-0.018
Asian/Other	-0.182	0.057	0.0013	-0.032
Subjective financial knowledge	0.097	0.015	<.0001	0.063
Objective financial knowledge	-0.136	0.013	<.0001	-0.121
Socio-Demographic Characteristics:				
Age/Generation: (Age 63+)				

Age 22-29	0.771	0.080	<.0001	0.116
Age 30-37	0.924	0.061	<.0001	0.228
Age 38-45	0.390	0.060	<.0001	0.088
Age 46-53	0.290	0.059	<.0001	0.066
Age 54-62	0.127	0.054	0.0187	0.030
Gender: (Males)				
Females	-0.214	0.034	<.0001	-0.064
Education: (Post college)				
High school drop/grad	0.067	0.056	0.2351	0.015
Some college	0.169	0.046	0.0002	0.050
College graduate	-0.085	0.047	0.0720	-0.023
Marital Status: (Unmarried)				
Married	0.043	0.057	0.4473	0.012
Never-married	0.182	0.068	0.0076	0.040
Employment Status: (Not-working)				
Working	-0.097	0.040	0.0162	-0.027
Income Levels: ($100,000 or more)				
Less than $25,000	0.525	0.106	<.0001	0.051
$25,000 - $49,999	0.300	0.058	<.0001	0.059
$50,000 - $74,999	0.275	0.046	<.0001	0.066
$75,000 - $99,999	0.383	0.042	<.0001	0.100
Intercept	0.999	0.143	<.0001	
F	235.89			
Adj-R^2	0.52			

Among sociodemographic characteristics, age, gender, education, marital status, employment status, and income levels were statistically significant in predicting levels of financial stressors. As for age, the coefficients associated with age 22-29, age 30-37, age 38-45, age 46-53, age 54-62 were statistically significant and positive, showing that compare to individuals of 63 years of age and older, those 62 years of age and younger had higher levels of financial stressors. There was also a gender difference in the levels of financial stressors, indicating that females reported lower levels of financial stressors than males. For education, the coefficients associated with some college education was statistically significant. This result means that individuals with some college education, compared to those with post college education, reported higher levels of financial stressors.

There was a significant difference in the levels of financial stressors between married and non-married individuals. As compared to unmarried singles, never married individuals reported higher levels of financial stressors. There was also a significant difference between working and non-working individuals. As compared to not-working individuals, working individuals reported lower levels of financial stressors. In terms of income, the coefficients associated with all four income levels were statistically significant and positive, meaning that those with lower income levels reported higher levels of financial stressors compared to those with income $100,000 and more. Specifically, those with less than $25,000 reported higher levels of financial stressors as compared to those with income of $100,000 and more. It is important to note that those with $75,000 - $99,999, a relatively higher income group, reported higher levels of financial stressors than those with income of $100,000 and more.

OLS Regression Results: Determinants of Financial Stress

Table 9 presented the OLS results that showed significant predictors associated with levels of financial stress. In this regression model, financial stressors and resource variables were included as key factors to test the Hypothesis 3 (Higher levels of financial stressors will be positively associated with higher levels of financial stress) and Hypothesis 4 (Race/Ethnicity, financial knowledge, and socio-demographic characteristics will be associated with the levels of financial stress). Thus, as key independent variables, the regression model included financial stressors, race/ethnicity, financial knowledge, and socio-demographic characteristics (age, gender, education, marital status, employment status, and income level). The OLS regression results showed an Adj-R^2 = 0.45 and F = 167.31 (*df*=26), $p<.0001$, indicating that 45% of the variance

was explained by the variables included in this model and the model was statistically significant.

The OLS results showed that all five coefficients associated with financial stressors were statistically significant. The coefficient associated with *too much debt* was statistically significant and positive (*β=0.223, p<.0001*), meaning that all else being equal, as compared to those with low debt levels, those with high debt levels reported higher levels of financial stress. The results showed that the coefficient associated with *collector calls* was statistically significant and positive (*β=0.079, p<.0001*), indicating that all else being equal, those who received collector calls reported higher levels of financial stress as compared to those with no collector calls. The results also showed that the coefficient associated with *unpaid medical bills* was statistically significant and positive (*β=0.077, p<.0001*), suggesting that all else being equal, as compared to those with no medical bills, those with medical bills reported higher levels of financial stress.

Table 9 showed that the coefficient associated with income drop was statistically significant and positive (*β=0.148, p<.0001*), suggesting that as compared to those with no income drop, those with income drop reported higher levels of financial stress. Lastly, the OLS results showed that the coefficient associated with *inability to pay bills* was statistically significant and positive (*β=0.248, p<.0001*), indicating that as compared to those with no difficulty in paying bills, those with difficulty in paying bills reported higher levels of financial stress.

Table 9 also showed significant resource variables associated with levels of financial stress. The OLS results showed that Hispanic individuals, when compared to White individuals, reported higher levels of financial stress (*β=0.022, p<.0389).*

Similarly, Asian/Other individuals reported higher levels of financial stress than White individuals did (*β=0.020, p<.0526).* In addition, financial knowledge was statistically significant. Table 9 also showed that both subjective financial knowledge and objective financial knowledge decreased the levels of financial stress, and the associations were statistically significant at *p<.0001*.

Table 9.

OLS Results – Determinants of Financial Stress (N=5,252)

	β	SE	P-value	b
Financial Stressors: (H3)				
Too much debt: (Low debt)				
High debt	2.502	0.141	<.0001	0.223
Collector calls: (No calls)				
Yes calls	1.170	0.230	<.0001	0.079
Unpaid medical bills: (No bills)				
Yes bills	1.047	0.210	<.0001	0.077
Income drop: (No drop)				
Yes drop	2.016	0.182	<.0001	0.148
Inability to pay bills: (No difficulty)				
Yes difficulty	2.859	0.150	<.0001	0.248
Resources: (H4)				
Race/Ethnicity (White)				
Black	0.130	0.213	0.5415	0.007
Hispanic	0.386	0.187	0.0389	0.022
Asian/Other	0.392	0.203	0.0526	0.020
Subjective financial knowledge	-0.560	0.056	<.0001	-0.109
Objective financial knowledge	-0.246	0.045	<.0001	-0.065
Socio-Demographic Characteristics:				
Age/Generation: (Age 63+)				
Age 22-29	0.130	0.287	0.6504	0.006
Age 30-37	0.960	0.222	<.0001	0.071
Age 38-45	1.140	0.215	<.0001	0.077
Age 46-53	0.816	0.209	<.0001	0.055
Age 54-62	0.736	0.193	0.0001	0.053
Gender: (Male)				
Female	0.364	0.123	0.0030	0.032
Education: (Post college)				
High school drop/grad	0.059	0.201	0.7681	0.004
Some college	0.174	0.164	0.2861	0.015
College graduate	0.110	0.169	0.5140	0.009
Marital Status: (Unmarried)				
Married	0.131	0.204	0.521	0.010

Never-married	0.087	0.244	0.720	0.005
Employment Status: (Not-working)				
Working	0.777	0.144	<.0001	0.066
Income Levels: ($100,000 or more)				
Less than $25,000	0.909	0.382	0.0175	0.026
$25,000 - $49,999	0.704	0.207	0.0007	0.041
$50,000 - $74,999	0.359	0.167	0.0319	0.026
$75,000 - $99,999	0.390	0.152	0.0108	0.030
Intercept	12.279	0.507	<.0001	
F	167.31			
Adj-R2	0.45			

Among socio-demographic characteristics, age, gender, employment status, and income levels were statistically significant in predicting levels of financial stress. However, education and marital status were not statistically significant. As for the age, the coefficients associated with age 30-37, age 38-45, age 46-53, age 46-53, and age 54-62 were statistically significant, suggesting that compare to individuals of 63 years of age and older, those between the ages of 62 years of age and 30 years of age had higher levels of financial stress. There was a gender difference in the levels of financial stressors, indicating that females reported higher levels of financial stress than males. There was also a significant difference between working and non-working individuals. As compared to not-working individuals, working individuals reported higher levels of financial stress. In terms of income, the coefficients associated with four income levels were statistically significant,, indicating that those with lower income levels reported higher levels of financial stress compared to those with income $100,000 and more.

OLS Regression Results: Determinants of Negative Financial Behavior

Table 10 presents the OLS results that showed significant predictors associated with negative financial behaviors (maladaptation). To test the Hypothesis 5 (Higher

levels of financial stress will be associated with negative financial behaviors), Hypothesis 6 (Higher levels of financial stressors will be associated with negative financial behaviors) and Hypothesis 7 (Resources will be associated with negative financial behaviors), financial stress, financial stressors, and resource variables were included in the model as key factors. The OLS regression results showed an Adj-R^2 = 0.75 and F = 556.12 (*df*=29), *p<.0001*, indicating that 75% of the variance was explained by the variables included in this model and the model fits well.

Table 10 showed that the coefficient associated with high financial stress was statistically significant and positive (*β=0.189*, *p<.0001*), meaning that all else being equal, as compared to those with low financial stress, those with high financial stress reported higher levels of negative financial behaviors. Similarly, the coefficient associated with high financial worry was statistically significant and positive (*β=0.110*, *p<.0019*), indicating that as compared to those with low financial worry, those with high financial worry practiced higher levels of negative financial behaviors. However, the coefficient associated with high financial anxiety was not statistically significant.

Table 10.

OLS Results – Determinants of Negative Financial Behaviors (N=5,252)

	β	SE	P-value	b
Financial Stress (H5)				
Financial stress: (Low)				
High	0.189	0.044	<.0001	0.044
Financial anxiety: (Low)				
High	-0.004	0.044	0.9339	-0.001
Financial worry: (Low)				
High	0.110	0.035	0.0019	0.026
Financial Stressors (H6)				

Too much debt: (Low debt)				
High debt	0.251	0.037	<.0001	0.059
Collector calls: (No calls)				
Yes calls	1.663	0.058	<.0001	0.298
Unpaid medical bills: (No bills)				
Yes bills	0.916	0.053	<.0001	0.178
Income drop: (No drop)				
Yes drop	1.088	0.046	<.0001	0.211
Inability to pay bills: (No difficulty)				
Yes difficulty	0.196	0.039	<.0001	0.045
Resources (H7)				
Race/Ethnicity (White)				
Black	0.726	0.054	<.0001	0.104
Hispanic	-0.081	0.047	0.0867	-0.012
Asian/Other	0.087	0.051	0.0917	0.012
Subjective financial knowledge	0.184	0.014	<.0001	0.095
Objective financial knowledge	-0.170	0.011	<.0001	-0.120
Socio-Demographic Characteristics:				
Age/Generation: (Age 63+)				
Age 22-29	0.453	0.073	<.0001	0.054
Age 30-37	0.328	0.056	<.0001	0.064
Age 38-45	0.046	0.055	0.4052	0.008
Age 46-53	-0.186	0.053	0.0005	-0.033
Age 54-62	-0.157	0.049	0.0013	-0.030
Gender: (Male)				
Female	-0.031	0.031	<.0001	-0.072
Education: (Post college)				
High school drop/grad	0.006	0.051	0.9114	0.001
Some college	0.010	0.041	0.8093	0.002
College graduate	-0.073	0.043	0.0885	-0.015
Marital Status: (Unmarried)				
Married	0.035	0.051	0.497	0.007
Never-married	0.137	0.062	0.0269	0.024
Employment Status: (Not-working)				
Working	0.083	0.036	0.0233	0.019
Income Levels: ($100,000 or more)				
Less than $25,000	0.460	0.097	<.0001	0.036
$25,000 - $49,999	-0.242	0.053	<.0001	-0.037
$50,000 - $74,999	-0.210	0.042	<.0001	-0.040
$75,000 - $99,999	0.077	0.039	0.0466	0.016
Intercept	0.882	0.130	<.0001	
F	556.12			
Adj-R2	0.75			

The OLS results in Table 10 showed that the coefficient associated with *too much debt* was statistically significant and positive (*β=0.251, p<.0001*), suggesting that as compared to those with low debt levels, those with high debt levels practiced higher levels of negative financial behaviors. The coefficient associated with *collector calls* was also statistically significant and positive (*β=1.663, p<.0001*), meaning that as compared to those with no collector calls, those who received collector calls practiced higher levels of negative financial behaviors. The OLS results also showed that the coefficient associated with *unpaid medical bills* was statistically significant and positive (*β=0.916, p<.0001*), meaning that as compared to those with no medical bills, those with medical bills practiced higher levels of negative financial behaviors. Similarly, the OLS results show that the coefficient associated with *income drop* was statistically significant and positive (*β=1.088, p<.0001*), suggesting that as compared to those with no income drop, those with income drop practiced higher levels of negative financial behaviors. Lastly, the OLS results show that the coefficient associated with *inability to pay bills* was statistically significant and positive (*β=0.196, p<.0001*), revealing that as compared to those with no difficulty paying bills, those with difficulty paying bills practiced higher levels of negative financial behaviors.

Table 10 also showed significant resource variables associated with negative financial behaviors. The OLS results showed that all else being equal, Black individuals, when compared to White individuals, practiced higher levels of negative financial behaviors (*β=0.726, p<.0001).* However, coefficients associated with other racial/ethnic groups were not statistically significant. The OLS results in Table 10 showed that while subjective financial knowledge increased negative financial behaviors, objective financial

knowledge decreased negative financial behaviors. Among socio-demographic characteristics, age, gender, marital status, employment status, and income levels were statistically significant in predicting negative financial behavior. However, education was not statistically significant in predicting the levels of negative financial behavior.

As for age, the coefficients associated with age 22-29, age 30-37, age 46-53, age 54-62 were statistically significant. The OLS results for the first two age groups showed that as compared to individuals of 63 years of age and older, those 37 years of age and younger presented higher levels of negative financial behaviors. In contrast, individuals between the ages of 46-53 and 54-62 presented lower levels of negative financial behavior than those ages 63 and older. There was also a gender difference in negative financial behaviors, indicating that females practiced lower levels of negative financial behaviors than males.

The OLS results showed that there was a significant difference in the negative financial behavior between never-married and unmarried single individuals. As compared to unmarried singles, never married individuals practiced higher levels of negative financial behaviors. The OLS results indicated that as compared to not-working individuals, working individuals reported higher levels of negative financial behaviors. In terms of income, the coefficients associated with all four income levels were statistically significant. The OLS results showed that those with income less than $25,000 and those with income $75,000 - $99,999 reported higher levels of negative financial behaviors than those with income of $100,000 and more. However, it is noted that those with income $25,000 - $49,999 and those with income $50,000 - $ 74,999, practiced

significantly lower levels of less negative financial behaviors than those with income of $100,000 and more.

OLS Regression Results: Determinants of Positive Financial Behavior

Table 11 presented the OLS results that showed significant predictors associated with positive financial behaviors. To test the Hypothesis 5 (Higher levels of financial stress will be associated with positive financial behaviors), Hypothesis 6 (Higher levels of financial stressors will be associated with positive financial behaviors), and Hypothesis 7 (Resources will be associated with positive financial behaviors), financial stress, financial stressors, and resource variables were included in the model as key factors in the regression model. The OLS regression results showed an Adj-R^2 = 0.33 and F = 91.47 (*df*=29), *p<.0001*, indicating that 33% of the variance was explained by the variables included in this model and the model was statistically significant.

Similar to the findings in the negative financial behavior model, financial stress and financial worry were statistically significant, but financial anxiety was not statistically significant in predicting positive financial behaviors. Specifically, the coefficient associated with high financial stress was statistically significant and negative

Table 11.

OLS Results – Determinants of Positive Financial Behaviors (N=5,252)

	β	SE	P-value	b
Financial Stress (H5)				
Financial stress: (Low)				
High	-0.196	0.060	0.0010	-0.056
Financial anxiety: (Low)				

High	-0.038	0.060	0.527	-0.011
Financial worry: (Low)				
High	0.212	0.049	<.0001	0.061
Financial Stressors (H6)				
Too much debt: (Low debt)				
High debt	-1.062	0.051	<.0001	-0.302
Collector calls: (No calls)				
Yes calls	0.428	0.078	<.0001	0.092
Unpaid medical bills: (No bills)				
Yes bills	0.170	0.073	0.020	0.040
Income drop: (No drop)				
Yes drop	0.750	0.063	<.0001	0.175
Inability to pay bills: (No difficulty)				
Yes difficulty	-0.678	0.054	<.0001	-0.188
Resources (H7)				
Race/Ethnicity (White)				
Black	0.212	0.074	0.0041	0.037
Hispanic	-0.314	0.065	<.0001	-0.057
Asian/Other	0.172	0.070	0.0142	0.028
Subjective financial knowledge	0.394	0.020	<.0001	0.243
Objective financial knowledge	-0.010	0.016	0.5058	-0.009
Socio-Demographic Characteristics:				
Age/Generation: (Age 63+)				
Age 22-29	-0.163	0.099	0.1019	-0.023
Age 30-37	-0.227	0.077	0.0032	-0.053
Age 38-45	-0.570	0.075	<.0001	-0.122
Age 46-53	-0.693	0.073	<.0001	-0.145
Age 54-62	-0.268	0.067	<.0001	-0.061
Gender: (Male)				
Female	-0.206	0.042	<.0001	-0.059
Education: (Post college)				
High school drop/grad	-0.471	0.070	<.0001	-0.102
Some college	-0.337	0.057	<.0001	-0.094
College graduate	-0.135	0.058	0.0209	-0.034
Marital Status: (Unmarried)				
Married	0.098	0.071	0.1674	0.025
Never-married	0.360	0.084	<.0001	0.077
Employment Status: (Not-working)				
Working	-0.253	0.050	<.0001	-0.068
Income Levels: ($100,000 or more)				
Less than $25,000	-0.611	0.132	<.0001	0.057
$25,000 - $49,999	-0.632	0.071	<.0001	-0.117
$50,000 - $74,999	-0.453	0.058	<.0001	-0.103
$75,000 - $99,999	-0.097	0.053	0.0675	-0.024
Intercept	4.870	0.178	<.0001	
F	91.47			
Adj-R2	0.33			

(*β=-0.196, p<.0010*), meaning that as compared to those with low financial stress, those with high financial stress practiced lower levels of positive financial behaviors. The OLS results also showed that the coefficient associated with high financial worry was statistically significant and positive (*β=0.110, p<.0001*), suggesting that those with high financial worry reported higher levels of positive financial behavior than those with low financial worry.

The OLS results in Table 11 showed that all five coefficients associated with financial stressors were statistically significant, but directions of the associations varied. Specifically, the coefficient associated with *too much debt* was statistically significant and negative, suggesting that as compared to those with low debt, those with high debt and those with inability to pay bills practiced lower levels of desirable financial behaviors than their counterparts. It was also found that those with difficulty in paying bills practiced lower levels of desirable behaviors than those without such difficulty. However, those with experience of collector *calls, those with having unpaid medical debt, and those with income drop experience* practiced higher levels of desirable financial behaviors as compared to their counter parts (i.e., those with no collector calls, those without unpaid medical bills, and those with no income drop experience).

Table 11 also showed significant resource variables that predict positive financial behavior. Significant variables include race/ethnicity, financial knowledge, age, gender, education, marital status, employment status, and income levels. The OLS results showed that Black individuals, when compared to White individuals, practiced higher levels of positive financial behavior (*β=0.212, p<.0041).* Similarly, the results show that

Asian/Other individuals, when compared to White individuals, reported more positive financial behavior *(β=0.172, p<.0142).* In contrast, Hispanic individuals, practiced lower levels of positive financial behaviors (*β=-0.314, p<.0001)* than their White counterparts.

Table 11 also revealed that while subjective financial knowledge was statistically significant, but objective financial knowledge was not significant. The result means that subjective financial knowledge increased the levels of positive financial behaviors. Among sociodemographic characteristics, age, gender, education, marital status, employment status, and income levels were statistically significant in predicting positive financial behaviors. As for the age, the coefficient associated with age 22-29 was not statistically significant, but the coefficients associated with other age groups were statistically significant. The results indicated that compared to individuals of 63 years of age and older, individuals between the ages of 30 and 62 practiced lower levels of positive financial behaviors. There was also a gender difference in positive financial behaviors, indicating that females practiced lower levels of positive financial behaviors than their male counterparts. There was a significant difference in the positive financial behaviors between never-married and unmarried single individuals, showing that never-married individuals practiced higher levels of positive financial behavior than unmarried singles such as divorced, widowed, or separated individuals.

The OLS results in Table 11 showed that individuals with high school education, some college education, and college degree practiced significantly lower levels of positive financial behaviors than those with post college education. There was also a significant difference in the levels of positive financial behavior between working and non-working individuals. The OLS results showed that as compared to not-working

individuals, working individuals practiced significantly lower levels of positive financial behaviors. Table 11 showed that the coefficients associated with all four income levels were statistically significant and negative. The results suggested that those with income less than $25,000, those with $25,000 - $49,999, those with $50,000 - $ 74,999, and those with $75,000-$99,999 practiced significantly lower levels of desirable financial behaviors than those with income of $100,000 and more.

CHAPTER V

DISCUSSION, IMPLICATIONS, AND CONCLUSION

Discussion

This thesis study explored the associations among financial stressors, financial stress, and financial behaviors in individuals in the U.S. In particular, this study examined how financial stressors are associated with financial stress, how financial stress is associated with financial stressors, how resources are associated with financial stress, and how these variables are associated with positive and negative financial behavior. It is important to understand the associations among these variables as debt levels continue to increase and affect the financial behaviors and financial well-being among individuals and families in the U.S.

Descriptive results indicated that the main stressors experienced among the study sample were too much debt and inability to pay bills. That means many of the participants included in this study had financial difficulties due to high debt or inability to pay regular on-going bills. These findings reflect similar findings in a recent national report and literature, which showed that high levels of debt and challenges from high debt are growing issues among American families and individuals (Federal Reserve Bank of New York, 2018; Lee et al., 2019; Wang et al., 2020).

Another interesting finding from the descriptive results was that there were significant differences in the mean levels of financial stressors, financial stress, and financial behaviors across race/ethnicity. In particular, Black individuals reported the

highest levels across all these variables (i.e., financial stressors, stress, negative financial behaviors, and positive financial behaviors) as compared to White, Hispanic, and Asian/Other individuals. Previous studies have noted that there were significant differences in financial challenges and behaviors among different racial/ethnic groups (Archuleta et al., 2013; Assari, 2019; Roll et al., 2016). While previous research did not clearly explain potential reasons why Black individuals were different from other racial groups, it is clear that findings of this study are consistent with previous studies in terms of challenging financial issues surrounding Black individuals and families (Herring & Henderson, 2016; Gilligan et al., 2018). However, there remains a lack of understanding regarding the mechanisms that are driving differences across racial/ethnic groups, particularly, between Black individuals and their White counterparts.

Additional information on racial/ethnic differences in financial stressors, stress, and behaviors was found in this study. According to the descriptive results, higher proportions of Black individuals reported having too much debt, having difficulty in paying bills, higher financial stress and anxiety, mortgage delinquency, credit card delinquency, overdrawn credit limits, and utilization of payday lenders as compared to the other three racial/ethnic groups. These findings are consistent with literature that suggested Black individuals had higher levels of financial stress (Lange & Byrd 1998; Sages et al., 2013), and they were more likely to report higher levels of financial stressors (Wiltshire et al., 2016). On the other hand, a higher proportion of Black individuals reported paying credit card bills in full, having emergency funds, owning stocks, and having retirement accounts as compared to the other three racial/ethnic groups.

There were significant differences in financial stressors, financial stress, negative and positive financial behaviors by individuals' socio-demographic characteristics. The descriptive results showed that younger individuals had the highest mean levels of financial stressors, financial stress, and negative financial behaviors, while older individuals showed the highest mean levels for positive financial behaviors. Literature suggests that older individuals practiced more desirable financial behaviors compared to younger individuals (Alhenawi & Elkhal, 2013; Henager et al., 2016; Xiao et al., 2015). The positive relationship between age and desirable financial behavior can be attributed to the financial experience individuals acquire as they age. While less educated individuals reported higher levels of financial stress, they reported lower levels of desirable financial behaviors than highly educated individuals. As income levels increased, they reported lower levels of financial stressors and stress, and negative financial behaviors. These findings are similar to the previous findings that higher SES levels were related to desirable financial behaviors (Fan & Chatterjee, 2017; Heckman & Hanna, 2015; Hsu, 2016; Prawitz & Cohart, 2014).

Financial Stressors

This study attempted to examine the associations among financial stress, financial stressors, and financial behaviors. In this study, Hypothesis 1, that higher levels of financial stress will be positively associated with the levels of financial stressors, was proposed. The OLS results suggested that having high levels of financial stress were associated with higher levels of financial stressors. Thus, Hypothesis 1 was supported. The finding regarding the positive relationship between financial stress and stressor is consistent with the findings in previous studies where individuals under financial stress

experienced other stressors (Tsuchiya, 2020). As individuals experienced high financial stress, they could struggle to deal with preexisting and/or new financial stressors. The intense feeling of stress and worry due to uncertain financial circumstances could hinder individuals' ability to clearly work through financial challenges such a debt payments and monthly financial transactions.

In this study, I proposed that resources (race/ethnicity, financial knowledge, and socio-demographic characteristics) would be associated with the levels of financial stressors (Hypothesis 2). Previous studies have suggested that individuals' likelihood of experiencing financial stressors may vary based on their race/ethnicity and some socio-demographic characteristics (Hawkins & Zuiker, 2019). The OLS results showed that some variables such as race/ethnicity, financial knowledge, age, gender, employment status, and income were statistically significant in predicting the levels of financial stressors. However, other variables such as education and marital status were not significant. Thus, Hypothesis 2 was partially supported. Specifically, the OLS results showed that Black individuals had higher levels of financial stressors compared to White individuals. Based on Census data, White individuals had higher levels of income than Black individuals (US Census Bureau, 2019); therefore, White individuals could have more financial resources to address their financial stressors. In addition, it has been shown that during economic downturns, Black individuals are part of the majority of the unemployed population, making them susceptible to financial stressors (U.S. Bureau of Labor Statistics, 2020).

There were also significant differences in the levels of financial stressors across gender, indicating that females had higher levels of financial stressors than males. This

finding consistent the literature, showing that women had higher levels of debts, lower income levels, and more challenges meeting financial obligations in comparison to men (Bishu & Alkadry, 2017). Education levels were also significant in predicting the levels of financial stressors, indicating that individuals with some college education, compared to those with post-college education, had higher levels of financial stressors.

Financial Stress

This study sought to examine the association between financial stressors and financial stress. Hypothesis 3—higher levels of financial stressors will be positively associated with higher levels of financial stress—was presented. The OLS results showed that all five financial stressors were positively associated with financial stress. Thus, Hypothesis 3 was supported. This finding is consistent with previous studies that financial stressors were associated with financial stress (Drentea & Reynolds, 2015; Juselious & Drehmann, 2015).

Hypothesis 4, race/ethnicity, financial knowledge, and socio-demographic characteristics will be associated with the levels of financial stress, was proposed. The OLS results showed that race/ethnicity, financial knowledge, age, gender, employment status, and income level were significant, while education and marital status were not significant. Thus, Hypothesis 4 was partially supported. The results indicated that compared to White individuals, Hispanics and Asian/Other individuals were more likely to experience financial stress. Existing literature suggests that these racial/ethnic groups were in financially challenging situations (Gilbert et al. (2017). On the other hand, previous research has shown how Black individuals held more debt and had lower levels of income across racial/ethnic groups (Federal Reserve, 2020; Herring & Henderson,

2016). In addition, Black individuals also reported the highest levels of financial stress than other racial/ethnic groups (Lange & Byrd 1998; Sages et al., 2013).

Financial Behaviors

This study also examined the association between financial stress and financial behaviors. Hypothesis 5, higher levels of financial stress will be associated with negative and positive financial behaviors, was proposed. The OLS results showed that high levels of financial stress and financial worry significantly increased the levels of negative financial behaviors. However, higher level of financial anxiety was not associated with practicing negative financial behaviors. Thus, Hypothesis 5 was partially supported. Previous studies have found that the presence of financial stress increased negative outcomes such as poor academic performance, low work productivity, and relational conflict (Archuleta et al., 2013; Hardie & Lucas, 2010; Ponnet et al., 2015). However, under the presence of financial stress, individuals might struggle to accommodate their on-going financial circumstances and can potentially make poor financial decisions.

The OLS results also support Hypothesis 6 that higher levels of financial stressors will be associated with negative and positive financial behaviors. The results indicated that those with high debt and difficulty paying bills reported less positive financial behaviors. A previous study has noted that increased debt amount and sudden economic downturns could be financial stressors that decreased the financial well-being of individuals and families (Juselius & Drehmann, 2015). It could be possible that as individuals experienced such financial stressor, their ability to perform desirable financial behaviors such as making credit card payments in full or saving for emergency funds may decrease.

Hypothesis 7, Resources (race/ethnicity, financial knowledge, and socio-demographic characteristics) will be associated with negative and positive financial behaviors, was proposed. The OLS results showed that while race/ethnicity and financial knowledge were significantly associated with the levels of negative and positive financial behaviors, some demographic variables were not significantly associated with financial behaviors. Thus, Hypothesis 7 was partially supported.

The OLS results showed that all else being equal, Black individuals had significantly higher levels of both positive and negative financial behaviors than their White counterparts. On the other hand, Hispanic individuals practiced lower levels of positive financial behaviors; whereas Asian/Other individuals practiced higher levels of positive financial behavior than White individuals. Previous research suggests that Black individuals compared to White individuals have lower saving rates, lower income, and higher debt levels, which is consistent with the findings of this study (Federal Reserve, 2020; Hanna et al., 2015; Herring & Henderson, 2016; Thompson & Suarez, 2015; Wiltshire et al., 2016). This could contribute to the increased likelihood of the overdrawing credit cards and checking accounts as their income may be barely enough or not enough to meet their financial obligations.

Family Stress Theory

A modified model of family stress theory, the ABC-X and the double ABC-X model, were the theoretical framework that guided this study (Hill, 1949; McCubbin & Patterson, 1983). Based on the assumptions of family stress theory and the modified model, seven hypotheses were developed and examined in this study. Family stress theory assumed that individuals could adapt positively (bonadaptation) or negatively

(maladaptation) to new circumstances depending on the ability to adjust to the new circumstances (Angell, 1936; McCubbin & Patterson, 1983; Smith & Hamon, 2017).

The findings of this study showed that financial stress decreased the levels of positive financial behaviors, while financial worry increased both, positive and negative financial behaviors. This finding is contradicting to the assumptions of the theory that individual can either positively adapt or negatively adapt, but not both. However, it can be assumed that the presence of good financial behaviors does not exempt individuals from practicing some negative financial behaviors and vice versa. Further research is necessary to explore potential reasons why individuals experiencing financial worry present positive and negative financial behaviors.

The finding of this study also showed that too much debt and the inability to pay bills increased the levels of negative financial behaviors, meaning that when individuals experience too much debt and inability to pay their on-going bills, they are more likely to "maladapt" to the financial stressors as the model suggested. The results of this study also indicated that collector calls and income drop increased positive financial behaviors and negative financial behaviors. Meaning that, when individuals are contacted by a collection agency and experience income drop they both "bonadapt" and "maladapt" to those financial stressors. This is inconsistent with the theoretical framework of this study as financial stressors should lead to either bonadaptation or maladaptation, instead of both.

Implications

The rising levels of household debt and financial stress from high levels of debt could affect the financial well-being of American families and individuals. The main purpose of this study was to examine the associations among financial stressors, financial stress, and financial behaviors in the U.S. The findings of this study have implications for financial professionals, practitioners, researchers, and policy makers. The findings of this study could be applied to support financial counselors, coaches, educators, or therapists as they implement the information and knowledge in their practical settings. The findings from this study could contribute to financial stress and behavior research field by expanding this line of research. Further, findings of this study could provide important insights with policymakers in their development of relevant consumer policy.

This study highlighted the importance of race/ethnicity as a key variable in understanding the associations among financial stressors, stress, and financial behaviors. The findings of this study could offer information on how racial/ethnic minorities experienced financial stressors and stress at a different magnitude and differently as compared to White individuals. Since this study highlighted how financial stressors, financial stress, and financial behaviors varied based on their race/ethnicity, the findings of this study can provide crucial findings and knowledge that will aid financial counselors and other financial professionals working with racial/ethnic minorities.

The findings could be particularly relevant to financial educators since the findings of this study can help financial educators adjust existing financial education programs or create new programs targeted to the specific needs of individuals in various

communities. For example, the findings of this study indicated that Black and Hispanic individuals practiced poorer financial behaviors and experienced higher levels of financial stressors and stress than did Asian/other and White individuals. These findings will be useful as financial professionals are working with Black and Hispanic individuals. It is important for financial educators to be aware of the potential implications and causes of the findings of this study to effectively educate and guide Black and Hispanic individuals' desirable financial practices.

The findings of this study have implications for financial professionals such as financial counselors and financial coaches as well. The results of this study indicated that financial stress increased under the presence of financial stressors and affected the financial behavior of individuals and families. Financial counselors and coaches can use these findings to help clients with preventive measures at the face of some financial stressors and financial stress. Particularly, since debt levels continue to grow and high debt is considered one of the main financial stressors that negatively impact the well-being of individuals and families, it is important for these professionals to better understand the associations between financial stressors and financial behaviors. As their clients are experiencing financial stress, providing important findings and knowledge to aid financial counselors and financial coaches is critical. That is, it is important for financial counselors and financial coaches to be adequately equipped to help clients adapt positively under the face of financial stressors and financial stress.

The findings showed that Black individuals had the highest levels of both positive and negative financial behaviors across racial/ethnic groups, suggesting that the presence of positive financial behaviors did not exclude the presence of concurrent negative

financial behaviors. As individuals seek out financial guidance from financial counselors, advisers, or coaches, it is important for these practitioners to be aware not only of where their clients need help, but also where they are doing well—especially as there are factors, such as financial stressors and levels of financial stress, that could influence the financial choices of individuals and families. This study was interested in examining how financial stressors and financial stress were associated with positive and negative financial behaviors. The finding of this study indicated that financial stress and financial worry increased maladaptation in individuals. Therefore, these findings could be helpful for financial coaches and financial counselors to better understand their clients' behaviors and help them improve their financial circumstances and financial practices.

Financial therapists can also benefit from the findings of this study. Financial therapists are trained to address both the emotional and the financial aspects of financial issues. They have the necessary tools to understand the financial behaviors of their clients and potential reasons for their behavior (Financial Therapy Association [FTA], 2021). The findings of this study suggest that financial stress and financial worry increased negative financial behaviors. These findings can help financial therapists focus on the levels of financial stress and financial worry their clients experience to help them reach financial bonadaptation. Financial worry also increased positive financial behaviors, meaning that as individuals worry about retirement and their future financial well-being, they showed more desirable financial behaviors.

The findings indicated that objective financial knowledge decreased maladaptation, meaning that higher levels of objective financial knowledge decreased the practice of poor financial behaviors. Financial therapists can utilize these findings to help

their clients increase their financial knowledge, preventing them from making poor financial choices. The findings of this study also indicated that Black individuals had less favorable financial behaviors, suggesting that Black individuals are a racial/ethnic group that needs assistance to practice more desirable financial behaviors. The understanding of racial/ethnic differences in individuals gives financial therapists the ability to provide their clients resources applicable to their specific financial circumstances to achieve financial bonadaptation.

The findings of this study could have implications for policymakers. It is important for policymakers to increase their diversity training when it comes to the financial matters of their community. Results showed that financial knowledge and income levels were associated with financial stress and financial behaviors. Therefore, policymakers can consider developing educational programs and outreach programs that can help individuals and families from low-income and minority communities. It is also crucial for diverse government programs that can help low-income individuals improve their financial circumstances. The findings of this study could further provide insightful information for policymakers to take preventive measures for future economic downturns and potential economic recessions.

Limitations and Future Research

Despite the strengths of this study, there were several notable limitations. First, the measurement of the financial stress and positive and negative financial behaviors were created while using available questions in the data from the 2018 NFCS. The selection of these variables were based on theory and existing literature related to the

main research questions. Studies like those conducted by Heo et al. (2020) and Archuleta et al. (2013) utilized an index scale to measure financial stress and financial anxiety. Heo et al. (2020) created a scaled of 24 items that addressed three aspects of financial stress, affective, physiological, and relational. Archuleta et al. (2013) created their own financial anxiety scale by adapting the Generalized Anxiety Disorder Scale to individual's financial situation. While this study measured financial stress by summing three survey questions from the NFCS survey, future studies should consider developing more accurate and consistent way to measure financial stress. Similarly, financial behaviors have been measured differently across the literature. Future research should consider utilizing multiple measures (e.g., both subjective and objective) of financial behaviors.

Second, in this study, there were four racial groups, including White, Black, Hispanic, and Asian/Other individuals. However, the Asians/Other category was not fully representative of Asian individuals since this category combined Asians with other racial/ethnic groups such as American Indian and biracial individuals. Thus, the finding of this study may not fully represent the financial stressors, stress, and behaviors of Asian individuals. Asians and Indian American individuals have different financial circumstances and show different financial behaviors (Borden et al., 2008). Future research should consider separating Asian individuals from other minority groups like Native Americans or biracial individuals if the sample size allows it.

Third, this study was unable to account for the role of time in the adaptation process after a stressor occurs as the McCubbin & Patterson (1983) double ABC-X model does. Future research could include the role of time in the families' and individuals' financial adaptation to financial stressors/events, while comparing different

periods. Longitudinal data can be helpful in understanding the potential influence of time in the adaptation processes.

The data set used for this study was the 2018 National Financial Capability Study (NFCS), which is gathered every three years. Since the data included a nationally representative sample, the findings on the associations among financial stressors, stress, and financial behaviors could be representative to American families and individuals. Future research that utilize data from the 2021 NFCS will provide further information about changes in the associations among financial stressors, stress, and financial behaviors during or post COVID-19 economic climate. That is, data from the 2021 NFCS could be used to further examine the associations between the financial stress and financial behavior of individuals in a post COVID-19 economic climate in order to address the impacts of financial stress on financial outcomes after the COVID-19 pandemic.

Conclusion

The current study had three main objectives: 1) to explore factors associated with financial stressors and financial stress, 2) to examine the effects of financial stressors and financial stress on financial behaviors, and 3) to investigate race/ethnicity and socio-demographic characteristics associated with financial behaviors. The results of the study showed that the proposed hypotheses were fully or partially supported. The findings gave insights on how financial stressors and financial stress influenced the financial behaviors of individuals and how these financial behaviors varied based on race/ethnicity and socio-demographic characteristics.

The findings of this study indicated that the majority of the participants in this study experienced too much debt and inability to pay bills. In addition, high debt and inability to pay bills increased individuals' levels of financial stress and negative financial behaviors. These findings showed the impact that financial stressors had on individuals' and families' financial lives. As individuals experienced financial stressors, their level of financial stress increased and had a direct impact on their ability to reach bonadaptation. Therefore, it is important to increase the understanding of potential financial stressors that might impact the financial well-being of individuals and families.

Financial stressors are events that cannot be controlled and, sometimes, cannot be prevented. Financial stress can come before, during, or after an individual or family begins to experience financial stressors. This brings out the question: how are individuals adapting to their new financial circumstances? To truly address financial issues and create effective financial programs with lasting results, it is crucial to understand the association among these variables and how it presents differently in every racial/ethnic group. The information about financial stressors, and their variation based on race/ethnicity, can help financial professionals and individuals understand more about financial stress and financial behaviors. Information about financial stressors and financial stress can also help financial professionals—particularly policymakers and financial educators—create programs that meet the actual financial needs of the local community. It will also be useful for individuals and families under financial stress, providing them resources that will improve their financial circumstances and have longer-lasting results.

There has been a new form of financial practitioners who focus on non-financial aspects affecting families' financial, emotional, and mental well-being. Financial therapy is the "process informed by both therapeutic and financial competencies that helps people think, feel, and behave differently with money to improve their overall well-being through evidence-base practices and interventions" (Financial Therapy Association [FTA], 2021). Financial therapists are trained to help clients reach their financial goals while addressing the emotional, psychological, behavioral, and relational aspects that are connected to one's financial life (FTA, 2021). Thus, financial therapists can use the findings from this study to deepen their understanding of financial stress and financial behaviors.

Additionally, this study highlighted the importance of race/ethnicity as a key variable in the financial experience of individuals and families. Previous research on race/ethnicity has shown that individuals experienced, perceived, and behaved financially different (Heckman et al., 2014; Kakar et al., 2019; Kim & Xiao, 2020). In the literature, it has been revealed that racial/ethnic minorities with fewer resources (financial and non-financial) placed at a higher risk of experiencing financial stress compared to White individuals; thus, they could practice negative financial behaviors in the presence of financial stressors (Assari, 2019; Grable & Joo 2006; Kim & Xiao, 2020; Kakar et al., 2019).

Debt and economic downturns continue to impact the financial well-being of individuals and families, particularly those of racial/ethnic minority groups. Therefore, it was important to examine the impact that financially stressful circumstances could have on the financial behaviors of individuals and families. Further information

regarding the negative association between financial stress and financial behaviors could raise awareness about this issue. Particularly, about how it has impacted—and continues to impact—all individuals and families. The road to financial success can be complex and challenging, especially if individuals and families have limited non-financial and financial resources available to help them improve their current financial circumstances. In particular, there is an increased need for awareness about how race/ethnicity and socio-demographic characteristics (e.g., Millennials, Black individuals, females) can affect their paths to financial success.

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APPENDIX

APPENDIX I. KEY VARIABLES IN CONCEPTUAL FRAMEWORK AND SURVEY QUESTIONS IN 2018 NFCS

Key Variables	Questions	Responses
Financial Stressors		
Too much debt	How strongly do you agree or disagree with the following statement? – I have too much debt right now (G23)	1 = Strongly disagree 2 3 4= Neither agree nor disagree 5 6 7= Strongly agree
Collector calls	Have you been contacted by a debt collection agency in the past 12 months? (G38)	1 = Yes 2 = No
Unpaid medical bills	Do you currently have any unpaid bills from a health care or medical service provider (e.g., a hospital, a doctor's office, or a testing lab) that are past due? (G20)	1 = Yes 2 = No
Income drop	In the past 12 months, have you [has your household] experienced a large drop in income which you did not expect? (J10)	1 = Yes 2 = No
Inability to pay bills	In a typical month, how difficult is it for you to cover your expenses and pay all your bills? (J4)	1= Very difficult 2= Somewhat difficult 3= Not at all difficult
Financial Stress		
Financial stress	How strongly do you agree or disagree with the following statements? - Discussing my finances can make my heart race or make me feel stressed (J33_41)	1 = Strongly disagree 2 3 4= Neither agree nor disagree 5 6 7= Strongly agree

Financial anxiety	How strongly do you agree or disagree with the following statements? – Thinking about my personal finances can make me feel anxious (J33_40)	1 = Strongly disagree 2 3 4= Neither agree nor disagree 5 6 7= Strongly agree
Financial worry	How strongly do you agree or disagree with the following statements? –I worry about running out of money in retirement (J33_1)	1 = Strongly disagree 2 3 4= Neither agree nor disagree 5 6 7= Strongly agree
Resources		
Race/Ethnicity	Which of the following best describes your race or ethnicity? – (A4a)	1 = White or Caucasian 2 = Black or African American 3 = Hispanic or Latino/a 4 = Asian, Native Hawaiian or other Pacific Islander, American Indian or Alaska Native, or Other
Age	What is your age? (A3A)	Continuous, R's age ranges 22 - 92
Gender	What is your gender? (A3)	1 = Male 2 = Female
Education	What was the highest level of education that you completed? (A5_2015)	1 = Did not complete high school, High school graduate - regular high school diploma, High school graduate - GED or alternative credential 2 = Some college, no degree, Associate's degree 3 = Bachelor's degree 4 = Post graduate degree
Marital status	What is your marital status? (A7a)	1 = Married

		2 = Single, Separated, Divorced, Widowed/widower
Employment status	Which of the following best describes your current employment or work status? (A9)	1 = Self-employed 2 = Work full-time or part-time 3 = Homemaker, full-time student, permanently sick, disabled, or unable to work, unemployed or temporarily laid off, retired
Income	What is your [household's] approximate annual income, including wages, tips, investment income, public assistance, income from retirement plans, etc.? (A8)	1 = Less than $25,000 2 = $25,000 -$49,999 3 = $50,000 - $74,999 4 = $75,000 -$99,999 5 = At least $100,000 but less than $150,000, $150,000 or more
Subjective Financial Knowledge		
	On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your overall financial knowledge? (M4)	1 = Very low 2 3 4= 5 6 7= Very high
Objective Financial Knowledge		
	Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow? (M6)	1 = More than $102 2 = Exactly $102 3 = Less than $102
	Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account? (M7)	1 = More than today 2 = Exactly the same 3 = Less than today

	If interest rates rise, what will typically happen to bond prices? (M8)	1= They will rise 2= They will fall 3= They will stay the same 4= There is no relationship between bond prices and the interest
	Suppose you owe $1,000 on a loan and the interest rate you are charged is 20% per year compounded annually. If you didn't pay anything off, at this interest rate, how many years would it take for the amount you owe to double? (M31)	1= Less than 2 years 2= At least 2 years but less than 5 years 3= At least 5 years but less than 10 years 4= At least 10 years
	A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less. (M9)	1= True 2= False
	Buying a single company's stock usually provides a safer return than a stock mutual fund. (M10)	1= True 2= False
Financial Behaviors		
Positive Financial Behaviors		
Spend within budget	Over the past year, would you say your [household's] spending was less than, more than, or about equal to your [household's] income? (J3)	1 = Spending less than income 2 = Spending more than income 3 = Spending about equal to income
Pay credit card bill on time	In the past 12 months, which of the following describes your experience with credit cards? - I always paid my credit cards in full (F2_1)	1 = Yes 2 = No
Have emergency fund	Have you set aside emergency or rainy day finds that would cover your expenses for 3 months, in case of sickness, job loss, economic downturn, or other emergencies? (J5)	1 = Yes 2 = No
Own stocks	Not including retirement accounts, do you have any investments in stocks,	1 = Yes 2 = No

	bonds, mutual funds, or other securities? (B14)	
Have IRAs	Do you have any other retirement accounts not though an employer, like an IRA, or any other type of retirement account that you have set up yourself? (C4_2012)	1 = Yes 2 = No
Have 401(K)	Do you have any retirement plans through a current or precious employer, like a pension plan, or a 401k? (C1_2012)	1 = Yes 2 = No
Have will	Do you currently have a will? (C41)	1 = Yes 2 = No
Negative Financial Behaviors		
Have been late on mortgage payment	How many times have you been late with your mortgage payments in the past 12 months? (E15_2015)	1= Never 2= Once 3= more than once
Have been late on credit card payment	In the past 12 months, which of the following describes your experience with credit cards? – In some months, I was charged a late fee for late payment. (F2_4)	1 = Yes 2 = No
Has overdrawn credit card limit	In the past 12 months, which of the following describes your experience with credit cards? – In some months, I was charged an over the limit fee for exceeding my credit line. (F2_5)	1 = Yes 2 = No
Has overdrawn checking account	Do you overdraw your checking account occasionally? (B4)	1 = Yes 2 = No
Taken retirement account withdrawal	In the past 12 months, have you taken a loan from your retirement account(s)? (C10_2012)	1 = Yes 2 = No
Taken hardship withdrawal	In the past 12 months, have you taken a hardship withdrawal from your retirement account(s)? (C11_2012)	1 = Yes 2 = No
Used payday lenders	In the past 5 years, how many times have you – Taken out a short-term "payday" loan? (G25_2)	1 = Never 2=1 time 3= 2 times 4= 3 times

		5= 4 or more times