FINANCIAL WELLNESS AND RELATIONSHIP SATISFACTION: IDENTIFYING MEDIATING COMMUNICATION PATTERNS VIA STRUCTURAL EQUATION MODELS

by

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(Under the Direction of Robert B. Nielsen)

ABSTRACT

This research investigated financial wellness in married individuals as well as the relationship of financial wellness, communication patterns, and relationship satisfaction. Using Healthy Families, Healthy Finances data from 2007 and 2011, the analyses bounded the economic recession that occurred from December 2007 and June 2009. Bivariate tests indicated that the 2011 sample had lower financial wellness than the 2007 sample on eight individual indicators and an overall financial wellness score. A series of ordinary least squares regression models were estimated to examine the correlates of financial wellness in separate samples and as a pooled sample to test for differences between the time periods. The results of the separate regression models suggest that income is the consistent correlate of financial wellness. A two-period, pooled regression model indicated that there were few differences in the correlates of financial wellness in 2007 versus 2011, with only three variables demonstrating differences (two levels of education and one level of income). Guided by social exchange theory, a series of structural equation models were specified to examine the mediating relationship of communication patterns on the relationship between financial wellness and relationship satisfaction. Using separate models for positive and negative communication patterns, a

mediating role for positive communication was not identified. However, negative communication patterns did indicate mediation (full mediation for 2007 sample and partial mediation for 2011 sample). Together, the results of this research provide insights into the financial wellness of married individuals before and after the Great Recession and inform the growing literature on the roles finances and communication play in relationships.

INDEX WORDS: Financial wellness, relationship satisfaction, communication patterns, structural equation modeling, PFW Scale™, CPQ-SF, RDAS

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CHAPTER 1

INTRODUCTION

In the United States, 55% of people age 15 years and older had been married once in 2009, while 15% had married more than once (12% married twice and 3% married three or more times) (U.S. Census Bureau, 2011). Marriage is a major life decision that includes significant financial implications. In the popular press coverage on marriage and money is not lacking, though most of the coverage is based on anecdotal personal experience or non-empirical reports from practitioners including financial planners and marriage counselors (e.g., Hale, Neidermeyer, Pearson, & Riley, 2008; Lieber, 2009). However the empirical research on marital financial matters remains inconsistent and tends to focus on specific financial areas or behaviors (e.g. Anderson, 2005; Hale et al., 2008).

In the past decade, American families have experienced many structural and economic changes affecting their composition, diversity, and economic well-being. Trends that include increasing rates of cohabitation, high rates of marriages ending in divorce, and increased existence of higher-order marriages and stepfamily households (Cherlin, 2010; Sweeney, 2010) all demonstrate changes in U.S. family composition. Economically, in the last thirty years there has been a continued increase in dual-income households (Raley, Mattingly, & Bianchi, 2006), increased labor force attachment and earning power for women (Blau & Kahn, 2007), and wealth accumulation that is greater for those who are married (Lupton & Smith, 2003).

It is expected that conflict will exist within marital relationships and is usually the result of differing needs, interests, and goals (Ridley, Wilhelm, & Surra, 2001). Money is one of the

topics couples argue over most often (Stanley, Markman, & Whitton, 2002), and disagreements over money significantly predicts both husbands' and wives' desire to divorce (Terling-Watt, 2001). However, limited and relatively old research suggests that the particular reason a conflict exists is less influential to relationship well-being than how couples communicate about the conflict (Ridley et al., 2001). In an effort to understand how these structural and economic changes affect the quality of marital relationships, researchers have investigated the extent to which relationship behaviors influence relationship satisfaction (Bradbury, Fincham, & Beach, 2000) and the extent to which financial management practices are related to relationship satisfaction (Kerkmann, Lee, Lown, & Allgood, 2000).

Stemming from the Great Depression, researchers have long been interested in how marital quality and marital processes are affected by economic factors such as unemployment and loss of income (e.g. Komarovsky, 1940; Liker & Elder, 1983). Much of this early research has focused on objective indicators related to economic hardship, such as income, employment, and education (Smith & Graham, 1995). More recent research has incorporated subjective indicators of economic hardship (e.g. Luhman, Schimmack, & Eid, 2011) as well as both direct and indirect effects of both objective and subjective economic hardship (e.g. Conger & Elder, 1994; White & Rogers, 2000).

Whereas early researchers' interests were piqued by the Great Depression, recent economic challenges have once again focused researchers' attention on marital relationships and financial wellness. In the time period between December 2007 and June 2009 the United States experienced an economic recession (NBER, 2010) that has since been termed the Great Recession. This economic crisis was characterized by bank failures, the burst of the housing bubble, and a tightened consumer credit market. Further, the U.S. experienced the highest

unemployment rates since the early 1980s (Bureau of Labor Statistics, 2012), record numbers of home foreclosures, and drops in household income (Amadeo, 2009). These market conditions have led researchers to investigate contemporary families' abilities to cope with these economic challenges (e.g. Baek & DeVaney, 2010; Dew, 2008).

The negative effects of the recent recession have been long-lasting, persisting several years after the National Bureau of Economic Research (NBER) declared that the recession had ended. Many have felt a continued economic hardship because of the severity of the unemployment rate, which has been slow to recover. Over 8 million jobs were lost (about 6% of all jobs) during this time period (Tasci & Zaman, 2010). The unemployment rate was consistently over 9% from July 2009 to January 2011, at which time the rate fell to 8.9% (Chiteji & Danziger, 2011). The negative effects on consumers go beyond the labor market issue of unemployment; household wealth, assets, and debts were all affected by the Great Recession. Consumers experienced a collapse in housing prices beginning in September 2008, and a decline in the stock market in which stocks lost almost half of their value between Fall 2008 and Spring 2009 (Chiteji & Danziger, 2011). In the housing market, 7.1 million foreclosures occurred in 2008 and 2009; 3.2 million in 2008 and 3.9 million in 2009 (RealtyTrac, 2011). Given these nearly unprecedented economic challenges, further investigation into the relationships between financial wellness and relationship satisfaction is warranted.

Objective of Study

Financial wellness, defined as "a comprehensive, multidimensional concept incorporating financial satisfaction, objective status of financial situation, financial attitudes, and behavior" (Joo, 2008, p. 21), is a part of almost every aspect of the daily lives of individuals and couples.

To contribute to the research community's understanding of the relationship between financial wellness and relationship satisfaction, and to identify areas for possible improvements for practitioners who counsel or interact with married couples, this research investigated the connection between financial wellness and the relationship satisfaction in samples of married individuals collected in 2007 and 2011. These two samples, from the Healthy Families, Healthy Finances study (Nielsen & Futris, 2007), allowed for an exploration of the pre- and post-recessionary period of what became the longest recession the United States has experienced since World War II.

Specifically, this research investigated the predictors of personal financial wellness, as well as levels of relationship satisfaction, of married individuals in Georgia. Further, due to the evidence from past research (e.g. Berkowitz, 1989; Lorenz, Conger, Simons, Whitbeck, & Elder, 1991), this study investigated the possibility that interpersonal communication patterns mediate the relationship between personal financial wellness and relationship satisfaction. The precise research questions were as follows:

1. What was the level of financial wellness of married individuals in 2007 and 2011?
2. What were the demographic, family status, and financial behavior correlates of financial wellness for married individuals in 2007 and in 2011?
3. Were there differences in the demographic, family status, and financial behavior correlates of financial wellness for married individuals between 2007 and 2011?
4. Theory and literature suggest that communication about finances can affect relationship satisfaction. For these samples, did communication patterns mediate the relationship between financial wellness and relationship satisfaction?
5. Does unemployment affect the model of relationship satisfaction?

United States and Georgia, 2007 and 2011

The data utilized for this study were collected in the summers of 2007 and 2011, immediately before and two years after the recession that began in December 2007 and ended in June 2009 (NBER, 2010). The survey was conducted by the Survey Research Center at the University of Georgia via telephone interviews with respondents who were selected by a Random Digit Dial (RDD) probability sample of Georgia residents 18 years old or older. The larger purpose of the Healthy Families, Healthy Finances study (Nielsen & Futris, 2007) was to assess attitudes and perceptions regarding finances and relationships of married individuals. Some of the indicators reflecting the increased strain after the recession for the United States and Georgia are presented in Table 1, including economic and housing indicators.

Table 1.
Selected economic indicators: 2007 to 2011

	Georgia 2007	United States 2007	Georgia 2011	United States 2011
Economic hardship				
Unemployment rate (%)	7.0	6.3	9.8	8.9
Poverty rate (%)	14.3	13.0	18.7	15.0
Housing stress				
Housing units receiving foreclosure notice (%)	1.6	1.0	2.7	1.5
Delinquency rate (%)	3.8	5.4	11.3	7.6
Mortgages with second mortgage or home equity loan (not both) (%)	24.6	25.6	18.8	19.6
Mortgages with second mortgage and home equity loan (both) (%)	1.0	1.1	0.7	0.8

Sources: U.S. Census Bureau American Fact Finder American Community Survey 2007 and 2011 and RealtyTrac.

Unemployment and poverty rates are commonly-used objective indicators of economic hardship. Unemployment includes those who do not have a job, have searched for work in the past 4 weeks, and are currently able to work (Bureau of Labor Statistics, 2008). Both Georgia and the U.S. saw increases in unemployment rates; Georgia increased from 7.0% to 9.8%, whereas the U.S. rate increased from 6.3% to 8.9%. The poverty rate also increased from 2007 to 2011, an increase of 4.4 percentage points for Georgia and 2.0 percentage points for the U.S.

The Great Recession was also characterized by housing hardships; the housing bubble burst during this time and many consumers found themselves unable to pay their mortgages, facing lower home equity values, and unable to refinance their loans to reach better terms. Between 2007 and 2011, housing units in Georgia receiving a foreclosure notice went from 1.6% to 2.7% and from 1.0% to 1.5% for the U.S. Mortgage delinquency rates also experienced an increase of 7.5 percentage points for Georgia and 2.2 percentage points for the U.S. Some consumers turned to second mortgages or home equity loans as a means of extending their credit and relieving some immediate financial stress. Borrowers with either a second mortgage or home equity loan (not both), saw decreases from 2007 to 2011 for both Georgia (5.7 percentage points) and the U.S. (6 percentage points). A smaller group of borrowers held both a second mortgage and a home equity loan in both 2007 and 2011, and this group also decreased during this time period, from 1.0% to 0.7% in Georgia and from 1.1% to 0.8% in the U.S.

Between 2007 and 2011 the U.S. saw unprecedented increases in the common indicators used to assess objective economic hardship, and with few exceptions the indicators were worse in Georgia. It is likely that the changes that these macro-level challenges caused many trickledown effects to the micro-level of individuals and families, warranting further

investigation of the specific effects on financial wellness, relationship functioning, and relationship satisfaction.

Organization of Remainder of Dissertation

The remainder of this dissertation is organized as follows: Chapter 2 presents a literature review, discussing both theoretical and empirical work in the area. Chapter 3 describes the research methods used to complete this study. The results of the statistical analyses are presented in Chapter 4 and Chapter 5 offers a discussion of the results, implications for research and practice, limitations of this study, and recommendations for future research.

CHAPTER 2

LITERATURE REVIEW

This research was undertaken to add to the body of literature on financial wellness of married individuals, the role financial wellness plays in the relationship satisfaction of individuals who are married, and the role communication plays in their relationship satisfaction. To provide a context for this work this chapter reviews existing empirical and theoretical work related to these constructs. First, an overview and background of the three key variables used in the current research; financial wellness, communication patterns, and relationship satisfaction, are presented. Second, a review of the role of finances in marriages is presented; paying particular attention to the empirical research that has investigated financial wellness, relationship satisfaction, and communication patterns. Finally, a discussion of the theoretical framework guiding the current research, along with the specific hypotheses that were investigated, completes the chapter.

Financial Wellness

A central focus of the present study is the concept of financial wellness. Research involving financial wellness has been increasing in the empirical literature, but it remains a challenging concept to define. Often, discussions of financial wellness include the concepts and definitions of well-being in general, economic or financial well-being, or financial health. While similar in scope, financial wellness is a comprehensive concept that incorporates a portion of well-being. Joo (1998) defined financial wellness as "a level of financial health [that] includes

satisfaction with material and non-material aspects of one's financial situation, perception (or subjective assessment) of financial stability including adequacy of financial resources, and the objective amount of material and non-material financial resources that each individual possesses" (p. 12). In later work, Joo (2008) defined financial wellness as "a comprehensive, multidimensional concept incorporating financial satisfaction, objective status of financial situation, financial attitudes, and behavior that cannot be assessed through one measure" (p. 21). Both of these definitions include the defining characteristics of financial wellness; it is a multidimensional concept that includes both objective and subjective components.

Financial wellness has been framed as a function of an individual's personal characteristics, objective attributes, perceived attributes, and attributes of their financial domain, as demonstrated by previous research to be discussed. As a multidimensional concept, there are multiple ways to operationalize financial wellness in both practice and research. Joo's (2008) financial wellness conceptual framework is presented in Figure 1. Under the umbrella of overall well-being, Joo conceptualized financial wellness as containing four sub-components: objective status of financial wellness, financial satisfaction, financial behavior, and subjective perception of financial wellness. The objective status incorporated aspects of an individual's economic situation and could be measured using income or financial ratios. Financial satisfaction was a significant component of financial wellness as it incorporated the entirety of one's financial situation. A single, global measure of overall financial satisfaction—or a set of items measuring satisfaction with various aspects of a financial situation (e.g. income, investments, savings, etc.)—could measure this. Financial behaviors were conceptualized to include components of personal finance, including financial management behaviors, planning, and consumption patterns. Each was conceptualized as affecting both current and future financial wellness. The

final component, subjective perception, incorporated an individual's attitudes about their financial situation and financial knowledge. Although Joo's complete conceptual framework has not been tested directly, it has influenced much of the recent research into financial wellness. Indeed, Joo's framework has been used to operationalize financial wellness, select variables to be used in multivariate models, and as a framework for reviewing literature (e.g. Falahati & Paim, 2011; Malone et al., 2010; Xiao, Tang, & Shim, 2009).

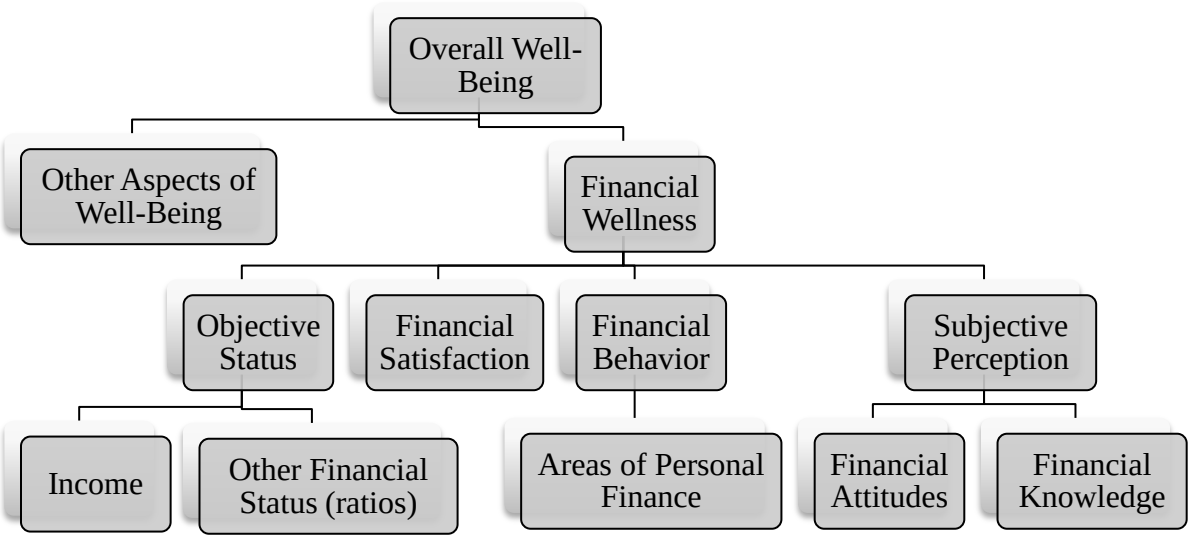

Figure 1. A conceptual framework of personal financial wellness (Joo, 2008)

Rutherford and Fox (2010) recently used Joo's framework to assess the financial wellness of young adults. Using indicators that aligned with each of the four subcomponents of financial wellness, they found that all four subcomponents were predictors of financial wellness for young adults. Their results showed that several indicators were predictors of financial wellness, including income, credit card debt, healthcare coverage, financial satisfaction, credit management, planning horizon, spending behavior, and attitude toward financial risk. These

indicators represented all four of the subcomponents (objective status, financial satisfaction, financial behaviors, and subjective perception) of Joo's framework.

Prior to Joo's framework researchers had used, or argued for the use of, specific subcomponents that eventually became part of Joo's framework, including financial behavior scales (e.g. Dickinson (1996); Garman & Forgue (2006); Mathus (1989)), perceptions of financial situation (e.g. Cutler (1995); Hayhoe & Wilhelm (1998); Headey (1993); Porter (1990)), overall satisfaction with financial situation (e.g. Hira & Mugenda (1999); Lown & Ju (1992); Porter & Garman (1993); Wilhelm, Varcoe, & Fridrich (1993)), and objective financial measures (e.g. Bailey (1987); DeVaney (1994); DeVaney & Lytton (1995); Greninger, Hampton, Kitt, & Achacoso (1996); Haveman & Wolfe (1990); Williams (1993)) to measure financial wellness. As fully described in Chapter 3, the present study used an overarching measure of financial wellness that accounted for the objective and subjective components of the multidimensional aspect of financial wellness as guided by the body of previous literature.

Many demographic and family status characteristics influence an individual's financial wellness. Demographic characteristics that have been found to influence an individual's level of financial wellness include age (Anthes & Most, 2000; Miles, 2004; Gordon & Whelan-Berry, 2004), gender (Malone, Stewart, Wilson, & Korsching, 2010), income (Joo, 1998; Foster, 1993; Porter & Garman, 1993), ethnicity (Livingstone & Lunt, 1992), and education (Joo & Grable, 2004; Pandey & Kim, 2008). Age, education, and income have all been confirmed to have a positive relationship with financial wellness (Joo, 1998; O'Neill, Porter & Garman, 1993).

Financial wellness has also been shown to be influenced by numerous family characteristics, including marital status (Porter & Garman, 1993), number of financial dependents (Ross & Huber, 1985; Porter & Garman, 1993), and the presence of young children

(Ross & Huber, 1985). Having more financial dependents and having young children present in the household both negatively affect financial wellness (Ross & Huber, 1985). Financial stressors (Joo, 1998), employment status (Porter & Garman, 1993), and housing tenure (Joo, 1998; Foster, 1993; Porter & Garman, 1993) have all been found to influence an individual's financial wellness. For homeowners, as household income increases, financial wellness tends to increase (Joo, 1998); individuals have lower financial wellness after experiencing stressful financial events (Joo, 1998); more financial knowledge leads to better financial decisions, which typically leads to increased financial wellness (Grable & Lytton, 2001); and practicing better financial behaviors has been found to have a direct, positive relationship with financial wellness (Dealfrooz & Paim, 2011).

Although the research community has not yet settled on a firm definition of financial wellness, nor a universally-accepted operationalization of the concept, the literature described above does shed light on its elements. In particular, the inclusion of a comprehensive measure of financial wellness that incorporates both objective and subjective aspects of financial wellness and, where possible, the addition of specific finance-related behaviors, is appropriate. As fully outlined in the measurement section of Chapter 3, the present study used the Personal Financial Wellness (PFW) Scale™, a financial wellness scale that identifies both objective and subjective dimensions of wellness (Prawitz et al., 2006a). Use of this scale is growing, in part, because it includes four items that measure the objective aspects of financial wellness (i.e. ability to pay bills and emergency savings funds) as well as four items that measure subjective aspects of financial wellness (i.e. worry and stress about financial situation). Examples of its use include Shatwell, Haynes, Hanson, and Hanson (2007), who used the PFW Scale™ when investigating the relationship between financial stress and health risks and the relationship between financial

stress and perceived health. The PFW Scale™ was also used while investigating financial topics that employees found most stressful, lifestyle risk factors, and their health status to determine whether these variables were related to financial distress (Prawitz, Shatwell, Haynes, Hanson, Hanson, O'Neill, & Garman, 2007). And, Gutter and Copur (2011) used the PFW Scale™ to explore the relationship between financial behaviors and financial well-being of college students when controlling for demographic and financial characteristics, financial education and financial dispositions. Further, the PFW scale includes an item that asks about satisfaction with current financial situation, which could be used as a global measure where needed. Most importantly, however, the eight items that comprise the PFW Scale™ fit within Joo's influential financial wellness conceptual framework.

Relationship Satisfaction

Relationship satisfaction refers to the perceptions one has regarding the quality of an intimate relationship (Hendrick, 1988). The dynamics of how individuals come to hold a particular perception of relationship satisfaction—and the stability of that perception in the face of change—have been investigated to better understand the concept (Bradbury, Fincham, & Beach, 2000). Relationship satisfaction is an encompassing term that includes elements of both stability of the relationship and general relationship satisfaction (Archuleta, Britt, Tonn, & Grable, 2011). For the current research, relationship satisfaction and marital satisfaction were considered the same when reviewing past literature. Relationship satisfaction is the broader term, as it is usually applied more broadly than to those currently married. Marital satisfaction is a specific case of relationship satisfaction (Snyder, 1979). Because the sample used for the current

research included only married individuals and the interviews addressed the marital relationship, this is appropriate.

As evidence of the operationalization challenges facing researchers who incorporate relationship satisfaction measures, Bradbury, Fincham, and Beach (2000) noted the difficulty in providing a comprehensive review of the marital satisfaction literature because of the large diversity in the methods of modeling the contributors to marital satisfaction. Still, the literature does suggest that relationship satisfaction may be operationalized as the presence of a non-distressed relationship (Bradbury et al., 2000; Busby et al., 1995; Kinnunen & Feldt, 2004; Spanier, 1976). However, just as the absence of disease doesn't mean the presence of health, a non-distressed relationship may not be the same as the presence of a satisfying relationship. "A satisfying marriage is not merely a relationship characterized by the absence of dissatisfaction, as is implied by the routine use of the term nondistressed to describe a couple who are martially satisfied" (Bradbury et al., 2000, p. 973). Relationship satisfaction may refer to an individual's global evaluation of the marital relationship (Hinde, 1997). Bradbury and colleagues (2000) argued that relationship satisfaction is also a function of the quality of marital interactions and the presence of individual well-being.

Relationship satisfaction is a component of a large body of research that remains of interest to researchers from a variety of aspects and viewpoints. While focusing on the relationship satisfaction on married individuals, the current research was motivated by the number of people in marriages. Almost 95% of Americans enter into a marriage at some point in their adult lives (U.S. Census Bureau, 2009, Table 56). Therefore, it is important to gain a better understanding of the factors that contribute to satisfaction in marriages, as it is central to individual and family well-being (Bradbury et al., 2000).

The continued interest in relationship satisfaction for researchers has also been due to the effect relationship satisfaction can have on different processes, like communication patterns, within a family and on the outside environment (Bradbury et al., 2000). By studying relationships, researchers are investigating the importance of relationship satisfaction to individual and family well-being as well as the benefits that amass and affect society over time (Bradbury et al., 2000). For example, the formation and maintenance of quality marriages has been shown to lead to discontinuance from crime (Laub, Nagin, & Sampson, 1998). Relationship research has also contributed to the development and strengthening of empirically-based interventions aimed at preventing or reducing marital distress and divorce (e.g. Baucom, Shoham, Mueser, Daiuto, & Stickle, 1998; Hahlweg, Markman, Thurmaier, Engl, & Eckert, 1998).

Numerous predictors of relationship satisfaction have been identified and tested. For example, research suggests that key sociodemographic characteristics affect an individual's outlook on both marital roles and outcomes, such as satisfaction (e.g. Amato, Johnson, Booth, & Rogers, 2003; Britt, Grable, Nelson Goff, & White, 2008; Zimmerman, Haddock, Current, & Ziemba, 2003). These key sociodemographic characteristics include age (Imhone, Aluede, & Ifunanyachukwu, 2008; Kamo, 1993), sex (Amato et al., 2003), education (Amato & Booth, 1997; Farley, 1996; Ross & Wu, 1995), employment status (Amato et al., 2003; Vinokur, Price & Caplan, 1996), housing status (Higginbotham & Felix, 2009), income (Amato et al., 2003), number of children (Cowan & Cowan, 1992; Glenn & McLanahan, 1982), and financial resources (Amato et al., 2003). Unfortunately, the findings about the nature of the associations (direction) among these factors and marital satisfaction have been inconsistent.

Teachman (2002) identified socio-demographic risk factors for marital stability and relationship satisfaction. Risk factors such as educational attainment level, births and conception before marriage, religion, parental divorce, age at marriage, and race all had a negative impact on marital stability and relationship satisfaction. Additionally, Amato and Rogers (1997) as well as Schramm, Marshall, Harris, and Lee (2005) found certain socio-demographic factors (such as: age at marriage, years married, income from wife, and remarriage versus first marriage) were predictive of marital satisfaction levels. Various household factors relating to the way that resources are allocated can create financial constraints within a marriage, impacting the satisfaction in the relationship. These factors include children present in the household, financial management strategies, and communication styles. Marital satisfaction has been shown to decrease when children are present in the household (Jose & Alfons, 2007), which may indicate that households are not as satisfied when they allocate their limited resources to more members. Notably, communication (effective as compared to dysfunctional communication) has been found to be a critical component of relationship satisfaction (Imhonde, Aluede, & Ifunanyachukwu, 2008).

A frequently-used method for assessing relationship satisfaction is the 14-item Revised Dyadic Adjustment Scale (RDAS) (Busby et al., 1995). A four-item subscale consisting of 1) considering divorce, 2) quarrel, 3) regret of marriage, and 4) getting on each other's nerves is often used to operationalize relationship satisfaction. For example, Kerkman and her colleagues (2000) used the RDAS satisfaction subscale with recently married university students while investigating financial management, financial problems, and martial satisfaction. And, Burleson & Denton (1997) used the RDAS as a measure of marital satisfaction while investigating possible moderating effects between communication skill and marital satisfaction. The RDAS

was also used to measure marital satisfaction while examining perceptions of attachment style and marital quality if midlife marriages (Hollist & Miller, 2005). As fully described in the measurement section of Chapter 3, the present research used this same operational definition to assess relationship satisfaction.

Communication Patterns

As discussed above, demographic and personal factors are regularly cited as influencing relationship satisfaction, but communication has also been shown to be central to influencing marriages. In very early research into the role communication plays in relationship satisfaction, communication problems were the most frequently cited as a relationship difficulty (Burleson & Denton, 1997) and couples who were entering therapy most frequently complained of communication problems (Geiss & O'Leary, 1981). Slightly more recent research also demonstrates that marital interaction patterns and communication greatly influence marital satisfaction (e.g. Gottman & Notarius, 2000; Litzinger & Gordon, 2005).

Communication is a multi-dimensional concept that incorporates a multitude of skill sets and patterns (Burleson & Denton, 1997). To better examine communication patterns in relationships, positive patterns, negative patterns, or both have been used to evaluate the different facets of communication. Positive and negative patterns are separate dimensions of communication rather than opposite ends of a spectrum (Burleson & Denton, 1997; Gottman, 1994). As a result, couples may exhibit varying levels of both types of communication. Negative communication includes patterns of demand/withdraw behaviors characterized by a partner demanding a discussion and often creating a conflict to which the other partner reacts by withdrawing from the discussion or by avoiding it completely (Futris, Campbell, Nielsen, &

Burwell, 2010). A second negative pattern has been conceptualized as criticize/demand pattern (Futris et al., 2010). This pattern is exhibited by defensive and denial actions occurring in response to criticism (Futris et al., 2010). Positive communication patterns, however, are characterized by engaged discussions where both partners contribute to problem solving (Futris et al., 2010). Building on Gottman's (1994) thesis that it is not what couples argue about that is important, but how couples argue, researchers have operationalized the constructs so that both positive and negative communication patterns may be identified.

For example, Stanley, Markman, and Whitton (2002) suggested that negative communication patterns are negatively associated with every measure of relationship quality and positively associated with contemplation and discussions of divorce. Behaviors that are more negative, such as defensiveness, withdrawal, criticism, and contempt have been linked to decreased levels of marital satisfaction (Gottman & Krokoff, 1989). A pattern of demand/withdrawal by couples is commonly noted as a negative pattern in marriages, which has been demonstrated to be harmful not just to more immediate relationship outcomes but also have cumulative negative impacts on the relationship (Christensen & Heavey, 1990; Gottman & Notarius, 2000). Based on the work of Gottman (1994), more defensive behaviors, like demand/withdrawal patterns, are associated with couples that are more distressed, whereas couples that exhibit less defensive behaviors like criticize/demand behaviors instead are likely to be less distressed (Futris et al., 2010; Gottman, 1994).

Much of the literature on communication and relationships has focused on the negative patterns or uses both negative and positive in analyses. Couples who engage in more positive communication patterns and less negative patterns while addressing conflict have been found to be more likely to experience greater levels of acceptance and satisfaction (Johnson, 1996).

Additionally, Gottman (1994) suggested that negative patterns of communication have greater effect on relational outcomes than their positive counterparts. Gottman (1994) also identified that a ratio of positive to negative interactions during conflict should be at 5:1 for couples maintaining satisfying relationships. Together, this literature suggests that researchers consider both positive and negative communication patterns when investigating communication patterns within relationships.

The most commonly used instrument for assessing communication patterns is the Communication Patterns Questionnaire, Short Form (CPQ-SF) (Christensen & Heavey, 1990), which measures perceptions (both the respondent's and the respondent's perceptions of the spouse's behaviors) of typical communication patterns when issues or problems arise during those discussions. For example, two of the CPQ-SF subscales were used while investigating gender role attitudes, communication, and relationship well-being in cohabiting couples (Walker-O'Neal & Futris, 2011). Holtzworth-Munroe and colleagues (1998) used CPQ-SF subscales to investigate demand withdraw communication in couples experiencing husband violence. Additionally, Caughlin (2002) used CPQ-SF subscales while investigating the connection between demand/withdraw communication patterns and marital satisfaction over time. As fully described in the measurement section of Chapter 3, the present research used this same operational definition to assess communication patterns.

Finances and Marriage

It is commonly recognized that marital problems often are rooted in financial issues (e.g. Kerkmann, Lee, Lown, & Allgood, 2000; Locke & Wallace, 1959; Spanier, 1976). The existing literature on finances and marriage suggests that there is a growing interest in improving our

understanding of financial distress (or financial wellness) and couples' stress (or satisfaction). As noted by Kerkman and her colleagues (2000), the interplay between these constructs has historically been overlooked. Much of the literature that has explored the impact of financial issues on marital satisfaction tends to be either in the area of financial hardships (financial strain and poverty) or the presence/absence of certain financial management behaviors. The current research brings together two aspects of these important components of the finances and marriage literature: 1) financial wellness and relationship satisfaction, and 2) finances and communication.

Financial wellness and relationship satisfaction.

The contemporary literature on the link between finances and relationship satisfaction indicates that being satisfied with one's finances, and the financial behaviors in which one engages, are linked to relationship satisfaction. For example, Grable, Britt, and Cantrell (2007) found that individuals with low levels of financial satisfaction were more likely to have considered getting a divorce. They noted that married people who were financially satisfied were significantly less likely to have thought about divorce over a three-year period (Grable et al., 2007). Earlier, family financial strain was identified as a reliable predictor of marital quality by Cutrona et al. (2003).

Research examining finances and relationship satisfaction has also revealed several important aspects about finances in marriage. First, finances are central to the lives of married couples and problems related to money affect marital happiness (Dew, 2009). While large financial problems like job loss substantially affect marital happiness, less severe financial problems, including regular, daily financial tasks, have also been shown to affect marital happiness (Olson, Olson-Sigg, & Larson, 2008). Still, there is little empirical research that

specifically investigates financial wellness as it affects relationship satisfaction. Instead, research has investigated individual elements of financial wellness, such as financial behaviors (e.g. Britt et al., 2008; Olson et al., 2008), financial stressors (e.g. Archuleta et al., 2011; Cutrona et al., 2003; Kinnunen & Feldt, 2004), or financial satisfaction (e.g. Archuleta et al., 2011; Grable et al., 2007), instead of using an overarching construct such as financial wellness.

Surprisingly the research that has investigated financial strain and hardship is somewhat limited. What does exist suggests that marital satisfaction decreases among spouses who experiencing financial strain (e.g. Conger, Rueter, & Elder, 1999; Cutrona et al., 2003). Moreover, financial strain has been found to be associated with higher levels of spousal hostility, marital strain, and withdrawal from partners (Freeman, Carlson, & Sperry, 1993). In turn, there is evidence that increases in spousal hostility and economic stress may result in decreased marital satisfaction (Ridley, Wilhelm, & Surra, 2001).

In her review of the financial stress and relationship satisfaction literature, James (2009) concluded that economic stress impacts all relationships. However, not all relationships are affected the same. Relationships already characterized by difficulties were found to be disproportionately affected by economic stress relative to those in more supportive relationships. In the presence of financial stress, supportive relationships benefit from a buffering effect that less supportive relationships don't. Notably, the absence of this buffer was found to contribute to the presence of negative couple interactions.

Research also suggests that a marital relationship is affected by an individual's perceptions of how well one's spouse handles finances (Britt et al., 2008; Finke & Pierce, 2006). Within a relationship, feelings of validation, power, freedom, respect, happiness, and security can all be affected by strain from finances (Washburn & Christensen, 2008). Shapiro (2007)

noted that discussions about money in a relationship often symbolizes not only power, but acknowledgement, caring, commitment, competence, control, and security.

Financial stress, a component of financial wellness, is also related to relationship satisfaction and instability. The seminal work by Conger and his colleagues through the 1990s investigated the mediating effects of economic pressure and strain on marital instability and quality (Conger, Elder, Lorenz, Conger, Simons, Whitbeck, Huck, & Melby, 1990, Conger et al., 1999). Conger et al. (1990) found an indirect relationship between financial stress and a couples' evaluation of the marriage relationship. The financial stress increased the likelihood of hostility in marital interactions and decreased warm and supportive interactions. Conger et al.'s work provided empirical evidence that financial hardship affects marital outcomes (e.g. marital quality).

In addition to financial stressors, Archuleta and her colleagues (2011) identified financial satisfaction as a predictor of marital satisfaction, while examining the relationship between financial satisfaction and financial stressors on marital satisfaction. Financial stressors were significant negative predictors of marital satisfaction directly and indirectly through financial satisfaction. The findings from Archuleta et al.'s work suggests that married persons who are financially satisfied tend to be more satisfied in their marriages and, therefore, more likely to have stable relationships. The current research extended upon findings of Archuleta and colleagues (2011). Specifically, financial satisfaction was included as a component of financial wellness (satisfaction with financial situation) in addition to the other subjective and objective items included in the measure of financial wellness.

Despite the literature described above, research that specifically investigates financial wellness as a multidimensional construct as a predictor of a multidimensional measure of

relationship satisfaction is somewhat limited. While there is a growing interest in the area, most of the existing work as reviewed focuses on specific subcomponents of financial wellness. The present study fills this gap in the literature.

Finances and communication.

Family studies research has established that how couples communicate in marriages may negatively impact a relationship (e.g. Gottman & Notarius, 2000; Stanley et al., 2002). Some research has suggested that some arguing may be beneficial to a relationship if it is viewed as a form of communication (Smith, Heaven, & Ciarrochi, 2008). Additionally, other studies have identified finances as one of the top reasons for conflict in a marriage (Britt et al., 2008; Conger et al., 1990).

Aniol and Snyder (1997) noted that among couples who were meeting with a financial counselor, one-third reported having an interpersonal relationship challenge. Similarly, one-third of couples meeting with a marriage counselor reported having financial issues. Indeed, couples frequently identify finances as a source of conflict (Stanley et al., 2002). Papp, Cummings and Goeke-Morey (2009) found that finances were the sixth most frequent topic of disagreement. However, their research also indicated that conflict over money tended to be more resentful, long-lasting, recurring, and unresolved longer than other sources of conflict. As a result, couples may discuss finances less often because of lingering anxiety or strain from earlier discussions about their finances. According to Papp et al. (2009) the negative effects that these finance-related disagreements have on marital satisfaction have been clearly established and cannot be overlooked by marital satisfaction researchers. Arguments related to finances have been linked to additional problems, as these arguments are associated with elevated levels of anger (Dew &

Dakin, 2009; Papp et al., 2009) and depression (Papp et al, 2009). These arguments are also less likely to be resolved when compared to nonfinancial arguments (Papp et al., 2009).

A couple's overall financial situation, debt brought into marriage, and financial decision-making are grouped together as financially problematic issues in marriages (Risch et al., 2003; Schramm et al., 2005). Finances have been linked with issues of power, control, and decision-making (Stanley et al., 2002), leaving finances with the potential to be overly pervasive and influential in relationships in general and also tied specifically to communication in relationships. Common themes throughout the literature are that conflict over money causes changes in communication patterns or that the conflict may not actually be about the money itself, but instead it may be the result of a lack of communication about finances. For example, Papp and colleagues (2009) found that conflicts related to money are more likely to be handled in negative ways when compared to other topics of conflict. Financial strain leads to increased hostility in the relationship and for men may lead to increased irritability and withdrawal, resulting in lower marital satisfaction for the couple as a whole (Freeman et al., 1993). Further, Ridley et al. (2001) found that couples who were more distant and lacked positive communication skills also had a tendency to report dissatisfaction with finances.

Finance-related disagreements have been associated with declines in individual well-being, which may act as a mediator for declines in overall relationship satisfaction (Dankin & Wampler, 2008; Gudmunson, Beutler, Israelsen, McCoy, & Hill, 2007). Disagreements about finances have also been linked with irritable and withdrawn moods for men (Dankin & Wampler, 2008). This type of behavior, labeled as stonewalling, is a toxic development for a marriage (Gottman & Levenson, 2002). Financial disagreements have also been linked to decreases in a woman's perceptions about their marriage (Dankin & Wampler, 2008).

In their investigation of the financial behaviors of married adults, Lawrence, Thomasson, Wozniak, and Prawitz (1993) found that positive financial management and savings were negatively associated with financial arguments. Their work also indicated that length of relationship and age were negatively related to couples' financial arguments, whereas income and education were not predictors of couples' financial arguments. Income was not significant, suggesting that couples with higher incomes were just as likely to argue over money as those with lower incomes. Notably, they found that financial arguments decreased with age, meaning that fewer financial arguments occur due to relationship survivorship. This possibility is also evidenced by Lawrence et al. (1993) who found that couples who argue more were more likely to end their relationships early.

Research by Bradbury et al. (2000) and Archuleta et al. (2011) suggests that it may not be the financial stressors that cause a decrease in marital satisfaction, but the coping strategies used to deal with the stressors. Couples were more likely to experience lower anxiety within the relationship and have a positive impact on their perception of financial satisfaction if they were willing to work together and continue to communicate about the financial stressor(s).

Discussing finances is challenging for many couples, so it may become a taboo topic that is rarely discussed (Klein, 1998; Olson, DeFrain, & Skogrand, 2007). The lack of communication about finances has been shown to be associated with unfamiliarity of finances and contradictory opinions or ideas of the truth about finances (Pahl, 1989). Zagorsky (2003) reported that relationships are healthier when spouses are discussing finances, as couples who reported smaller differences in perceptions of finances were less likely to divorce than couples who reported greater differences in perceptions of finances.

Couples who report spending less time together also report more relationship conflict. For example, Gudmunson and colleagues (2007) investigated a model of emotional distress, couple disagreements, couple fights, and quality time together as mediating financial strain and marital instability. The work by Gudmundson et al. (2007) found that it was both positive (spending quality time together) and negative (couple fights and disagreements) marital interactions that influenced marital instability.

As this review of the financial wellness, communication, and relationship satisfaction literature has demonstrated, financial stressors play an influential role in communication patterns, as well as financial and relationship satisfaction (Pittman & Lloyd, 1988; Conger et al., 1990; Johnson & Booth, 1990; Bradbury et al., 2000). To demonstrate, Conger et al. (1990) found that economic strain led to decreased abilities by husbands to engage in positive interactions with their wives. And, wives became indirectly affected by additional economic strain as a result of husbands' negative behaviors. Further, Bradbury et al. (2000) indicated that couples often exhibit resiliency when under stress. This resiliency is attributed to the stress being processed through communication and interactions such that individuals assess their marital satisfaction and relationship as a whole. This broad evidence from the various literatures suggests that improving communication regarding finances is critical to the success of marital relationships.

Theoretical Framework

Social exchange theory.

Social exchange theory (Thibault & Kelley, 1959) offers a theoretical foundation for investigating the relationship between financial topics, communication patterns, and relationship

quality. This theory has been used in the area of relationships and finances as demonstrated by Dew (2008), Britt et al. (2008), and Kerkman et al. (2000). The operating assumption of social exchange theory is that people obtain what they need and want by making exchanges with others while trying to minimize costs (Turner, 1991). Social exchange theory has four basic assumptions. The assumptions are: 1) individuals have a limited number of choices available to them; 2) individuals are motivated by their own self-interests and seek options beneficial to them; 3) individuals are rational and have the ability to calculate rewards and costs; and 4) relationships are characterized by interdependence (Sabatelli & Shehan, 1993; White & Klein, 2008).

Social exchange theory has four components: alternatives, costs, rewards, and outcomes (see Figure 2 for interaction among components). According to social exchange theory, alternatives are the catalog of choices that individuals have available to them. A cost is defined as anything that a person dislikes or as an opportunity cost. On the other hand, a reward is any physical, psychological, or social benefit. People consider the expected costs and rewards when making decisions, and they frame these costs and rewards in terms of outcomes; outcomes are the difference between rewards and costs.

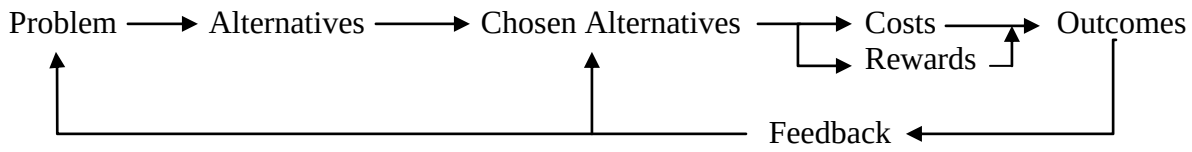

Figure 2. Social exchange theory process

When rewards exceed the costs in a transaction, a profit occurs. Conversely, a loss results when the costs are greater than rewards. An outcome is conceptualized as the difference between

the rewards obtained minus the costs incurred (Sabatelli & Shehan, 1993). This ratio of costs to rewards is calculated (either implicitly or explicitly) and assessed when determining which alternative to choose when making decisions within a relationship (White & Klein, 2008). Assessing rewards and costs related to relationship decisions is very common (Ingoldsby, Smith, & Miller, 2004). Spouses evaluate the costs and rewards of their marriage with the expectations they have for their relationship. If a spouse feels the marital outcomes outweigh the comparison level, the spouse is satisfied with the relationship. However, if the outcomes are lower than the comparison level, the spouse will be unsatisfied with the relationship.

Social exchange theory assumes that individuals choose to participate in a relationship because the relationship provides an adequate level of outcomes and that the outcomes are better than other alternatives available (Nye, 1979; Sabatelli, 1988; Thibaut & Kelley, 1959). From this theoretical foundation one expects that to the extent husbands and wives report positive communication patterns and positive personal financial wellness they will report higher levels of relationship satisfaction/well-being.

In an example of the use of social exchange theory, Britt and her colleagues (2008) investigated how relationship quality was influenced by perceived spending behaviors. They hypothesized that negative perceptions about a partner's spending behaviors were costs in a relationship. The tenets of social exchange theory were supported by their results; those who perceived their partner's spending behaviors negatively were more likely to report low relationship quality. Interestingly, participants' relationship quality was not influenced by the perceptions of their own spending or the couple's joint spending behaviors.

In another example of the application of social exchange theory, Dew (2008) studied debt and relationship quality for newlywed couples, focusing on expectations of relationships. He

contended that couples compare the costs and benefits of the relationship with the expectations they have of the relationship. If one's cost/benefit assessment is better than the expectation for the relationship, then higher relationship quality will be experienced. Conversely, if the assessment of cost/benefits is lower than the expectations, lower relationship quality exists. The assessment of cost/benefit and relationship expectations may change over time, which may lead to changes in relationship quality. Dew (2008) found that changes in consumer debt predicted changes in marital satisfaction. Specifically, decreases in relationship satisfaction were related negatively with changes in debt and couples spending time together, while there was positive association with arguments over money.

Kerkmann et al. (2000) also used social exchange theory as the basis for investigating the financial management, financial problems, and marital satisfaction of recently-married university students. Social exchange theory (with role theory and symbolic interaction theory) defined the concept of relationship satisfaction as "a subjective evaluation of the overall degree to which needs, expectations, and desires are met in [the relationship]" (p. 55). With a limited sample of married university students, their findings indicated that financial management and financial problems affected relationship satisfaction, as did perceptions about the couples' financial management and financial problems.

The current research.

Consistent with Dew (2008) and Kerkman et al. (2000), social exchange theory provided the theoretical foundation for the current research. As individuals enter into and stay in relationships, expectations about the experiences in the relationship are set. For instance, based on their comparison levels, individuals expect support systems from their relationship, including

social, emotional, and financial support systems. These support systems lead to married individuals tending to have higher financial wellness than non-married individuals.

For this study, marriages were conceptualized as exchange-based relationships in which changes to the financial wellness may disrupt the satisfaction of the relationship (negative changes may decrease the satisfaction, whereas positive changes may increase the satisfaction). A change in the comparison level influences the choices being made in a marriage, as well as the assessment of alternatives, rewards, costs, and outcomes. In this context, financial wellness, communication patterns, and relationship satisfaction can be identified and measured to be included in the model as reported by the married individual respondent.

With social exchange theory as the framework, financial wellness was expected to influence an individual's relationship satisfaction. Changes in the level of financial wellness impact the cost/benefit of the relationship when compared to the expectations and comparison levels of the relationship leading to changes in relationship satisfaction. In the next chapter a full conceptual model based on social exchange theory is presented for the investigation of Research Questions 4 and 5.

Hypotheses and Hypothesized Models Drawn from Theory and Literature

In response to the literature just described, and within the context of the expectations derived from social exchange theory, the current research investigated the predictors of financial wellness, the levels of financial wellness of married individuals, and the possibility that communication patterns mediate the relationship between financial wellness and relationship satisfaction. The specific research questions and hypotheses are stated below.

Research questions and hypotheses.

Research questions.

1. What was the level of financial wellness of married individuals in 2007 and 2011?
2. What were the demographic, family status, and financial behavior correlates of financial wellness for married individuals in 2007 and in 2011?
3. Were there differences in the demographic, family status, and financial behavior correlates of financial wellness for married individuals between 2007 and 2011?
4. Theory and literature suggest that communication about finances can affect relationship satisfaction. For these samples, did communication patterns mediate the relationship between financial wellness and relationship satisfaction?
5. Does unemployment affect the model of relationship satisfaction?

Hypothesis for Research Question 1.

Based on prior literature regarding financial wellness, economic stress, and financially stressful events (Joo, 1998; Freeman et al., 1993; Dakin & Wampler, 2008; James, 2009), it was expected that levels of financial wellness would be lower for the sample that experienced the Great Recession.

a) Hypothesis:
    i. Married individuals experienced lower financial wellness (were more distressed) in 2011 compared to 2007.

Hypotheses for Research Question 2.

As demonstrated by previous research that defined and investigated financial wellness (Joo, 1998; 2008), it was expected that financial wellness would be a function of an individual's personal characteristics, as well as objective and subjective attributes of their financial domain. In terms of demographic variables, age, education, and income have all been confirmed to have a positive relationship with financial wellness (Joo, 1998; O'Neill; Porter & Garman, 1993). Family characteristics have been shown to also influence financial wellness, including marital status (Porter & Garman, 1993), number of financial dependents (Ross & Huber, 1985; Porter & Garman, 1993), and the presence of young children (Ross & Huber, 1985). Having better financial behaviors has also been found to have a direct, positive relationship with financial wellness (Dealfrooz & Paim, 2011).

a) Demographic correlates hypotheses:
    i. In both 2007 and 2011, financial wellness was positively related to age, income, and education.
    ii. In both 2007 and 2011, males had higher financial wellness than females.
    iii. In both 2007 and 2011, African American and members of other races had lower financial wellness than whites.

b) Family status correlates hypotheses:
    i. In both 2007 and 2011, financial wellness was positively related to years married.
    ii. In both 2007 and 2011, those in marriages that were first marriage for both spouses had higher financial wellness than those in marriages where one or both of the spouses had previously been married.

iii. In both 2007 and 2011, financial wellness was lower for those where there was any child in the household, where there was a young child in the household, and for step and blended families (relative to nuclear families).

c) Financial behavior correlates hypotheses:

i. In both 2007 and 2011, financial wellness was higher for those who engaged in more financial management behaviors.

Hypothesis for Research Question 3.

Based on prior literature regarding financial wellness and experiencing negative economic events, such as a recession (Freeman et al., 1993; Dakin & Wampler, 2008; James, 2009), it was expected that the correlates of financial wellness were different for the two samples.

a) Hypothesis:

i. The predictors of financial wellness in 2007 were different from the predictors of financial wellness in 2011.

Hypotheses for Research Questions 4 and 5.

The base hypothesized models for Research Questions 4 and 5 were grounded within the theoretical framework of social exchange theory. Interpersonal exchanges as defined by social exchange theory are a process. The process starts with a problem, moves to assessing and choosing between the identified alternatives, followed by analyzing costs and rewards to derive the outcomes, and finally evaluation of the process informs future exchanges.

As individuals enter into and stay in relationships, expectations about the experiences in the relationship are set. For instance, individuals expect support systems from their relationship, including social, emotional, and financial support systems. These systems lead to married individuals tending to have higher financial wellness than non-married individuals.

Based on social exchange theory, I hypothesized that a decrease or increase in financial wellness would influence an individual's relationship satisfaction. This relationship was further hypothesized to be influenced by communication patterns present in the relationship. From this specific theoretical lens (see Figure 3 for social exchange theory process and Figure 4 for hypothesized application of theory among variables), the conceptualized problem would exist in an individual's financial wellness. The married individuals studied in this sample identify interaction styles for communicating with their spouse, these interaction and communication patterns in the relationship are identified as alternatives (specifically, communicating in positive versus negative manners) for dealing with the financial wellness level (the identification of alternatives is assumed, but are not measured directly in this data). These alternatives impact

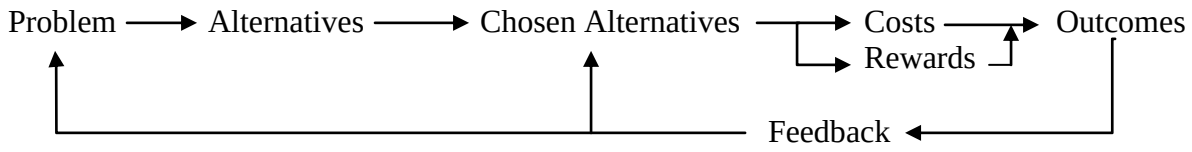

Figure 3. Social exchange theory process

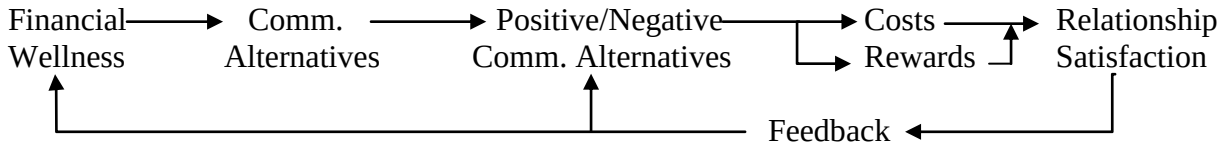

Figure 4. Social exchange theory process as applied to Research Questions 4 and 5

the rewards and costs of the relationship. While costs and rewards are not directly measured in this data; this is the case in relationships, as costs and rewards are not usually directly measured but actually assessed intrinsically. The outcome is derived from the difference between the rewards and costs; here relationship satisfaction is the outcome being examined.

Three latent constructs were used to assess Research Questions 4 and 5. Two independent latent constructs, financial wellness (the problem) and positive and negative communication patterns (the alternatives). As described in the literature review, financial wellness is often associated with the presence and/or absence of financial strain and/or financial problems. The far-reaching nature of finances and financial wellness within a marriage demands relationship-appropriate communication, influencing the type of behaviors exhibited in the relationship. The individual is expected to assess the costs and rewards of these interactions, which inform the assessment of satisfaction. In Research Question 5, unemployment status variables were included as the theorized problem as unemployment directly affects financial wellness in the model. Unemployment commonly leads to financial insecurity, through changes in or a complete loss of income (Sullivan, Warren, & Westbrook, 2000). For this model, the communication patterns latent constructs were conceptualized as the alternatives available within the relationship and allow for choices in the type of interaction. Rewards and costs were not directly measured, but the evaluation and difference between them are captured in the outcome of relationship satisfaction. Satisfaction is derived from the evaluation of the outcomes available in a relationship, based on the assessment of costs and rewards (Sabatelli & Shehan, 1993).

a) Research Question 4 overall hypothesis:
    i. In both 2007 and 2011, communication patterns mediated the relationship between financial wellness and relationship satisfaction.

b) Research Question 4 specific path hypotheses:

   i. In both 2007 and 2011, financial wellness was positively related to positive communication patterns.

   ii. In both 2007 and 2011, financial wellness was negatively related to negative communication patterns.

   iii. In both 2007 and 2011, positive communication patterns were positively related to relationship satisfaction.

   iv. In both 2007 and 2011, negative communication patterns were expected to be negatively related to relationship satisfaction.

   v. In both 2007 and 2011, the relationship between financial wellness and relationship satisfaction was mediated by communication patterns.

c) Research Question 5 hypothesis:

   i. In 2011, unemployment had a negative effect on financial wellness.

Model development for Research Questions 4 and 5.

The hypothesized full structural equation models are fully described and presented in Chapter 3. Briefly, three main latent constructs were used in each model (financial wellness, communication patterns (positive communication patterns in a model and negative communication patterns in another model), and relationship satisfaction). Both samples were used to examine Research Question 4, with a total of 4 models analyzed. In Research Question 5, only the 2011 sample was used while including couple employment status in a modified model from Research Question 4.

The communication patterns construct was broken into separate positive and negative behaviors and used in separate models, based on past literature and the theoretical framework. To better examine communication patterns in relationships, positive patterns, negative patterns, or both have been used to evaluate the different facets of communication. These two categories of patterns were considered separate dimensions as opposed to ends of a spectrum, as couples may exhibit varying levels of both types of communication (e.g. Burleson & Denton, 1997; Gottman, 1994), providing partial evidence to have the constructs separate.

The theoretical framework of social exchange theory provides further evidence for modeling separate constructs of positive and negative communication. From the lens of social exchange theory, the differences in positive and negative communication patterns served as the selected alternatives. The cost/rewards analysis accounted for differences in how positive and negative communication related to financial wellness and relationship satisfaction. The cost/rewards calculation and the outcome of relationship satisfaction were changed based on the different process that positive versus negative communication demonstrate in this type of model.

Finally, in reviewing the existing literature, separate dimensions of communication have been included in mediating models in two ways. First, when regression is used to determine whether there is a mediating effect of communication (generally as hierarchical regressions) both positive and negative components are included in the same model, as the effects of mediation can be identified separately (see Walker-O'Neal & Futris, 2011, for example). In studies using structural equation modeling (as done here), the positive and negative components were included in separate models (see Heene, Buysse, & VanOost, 2005, for example). In a structural equation model, for a mediation effect to be found, both positive and negative communication would have to produce a mediating effect. A mediating effect could be found with both constructs together,

but only if one of the constructs fully out powers the other to identify the mediating effect. If both were in a structural equation model at the same time then the model would test whether communication as a whole is mediating because it would be problematic to separate out the effects of positive and negative communication (unless one form of communication clearly dominated the other, which is in effect what is more easily determined with the more parsimonious separate models).

Summary

As conceptualized, the current research adds to the finances and marriages literature—in particular the literatures on financial wellness, relationship interactions of communication patterns, and relationship outcome of relationship satisfaction. In past research, financial wellness and communication patterns have not been investigated for their joint influence on relationship satisfaction for married individuals. Negative communication patterns and conflict are commonly investigated for their damaging effects within relationships (e.g. Lawrence et al., 1993; Miller, Yorgason, Sandberg, & White, 2003; Oggins, 2003; Stanley et al., 2002), but how negative communication relates to financial wellness and relationship satisfaction has not been specifically examined. Also, there is a gap in the work investigating positive communication patterns as it relates to finances and relationships, as little work has specifically investigated positive communication, especially as it relates to financial wellness. The current study addresses these gaps.

CHAPTER 3

METHODOLOGY

The goals of this research were to add to the current body of literature on financial wellness of married individuals, the role financial wellness plays in the relationship satisfaction of individuals who are married, and the role communication plays in the relationship satisfaction. Toward these goals, this chapter outlines the methods that were used in this research. The first section of this chapter describes the data used, the characteristics of the samples, and procedures that were implemented to account for any missing values. The second section outlines the process used to select the variables used in this study. Finally, the full complement of analyses used to investigate each research question is reviewed.

Data

Healthy Families, Healthy Finances (HFHF).

This research investigated the relationship between financial wellness and the interpersonal and economic well-being of married individuals in 2007 and 2011. This was done using data from the Healthy Families, Healthy Finances (HFHF) data (Nielsen & Futris, 2007) collected by the University of Georgia Survey Research Center in 2007 and 2011. The two samples were collected immediately prior to, and then two years after, the Great Recession, allowing for the investigation of financial wellness and relationship satisfaction in the pre- and post-time periods of the recession. Both samples are independent cross-sectional samples that

were identified using the same sampling technique and population. As a result, they may be utilized as a pooled cross-sectional sample where appropriate for the research question.

Data were collected using telephone interviews of adult residents in the State of Georgia. A Computer Assisted Telephone Interviewing (CATI) instrument was used to assess respondent's perceptions of several relationship and financial management behaviors and well-being scales. The samples were contacted via random-digit dial (RDD) sampling, aiming to contact the 500 telephone interviews for the design of the study in 2007 and 470 in the 2011 collection. Respondents were screened to assure that they were 18 years or older, currently married, and were sharing a residence with their spouse. Throughout this study the unit of analysis was at the individual level; questions contained in the CATI instrument solicited responses from respondents about their own characteristics, the characteristics of their spouse, and numerous dimensions that capture their shared experiences as a married couple.

A random selection procedure was used to determine whether the male or female spouse would participate in the survey in order to equalize the number of male and female respondents. Also, to increase geographic diversity, rural telephone exchanges were oversampled. Both samples were selected by the Survey Research Center to be approximately representative of the population of the State of Georgia.

The first data were collected between June 11th and August 10th, 2007. Of the eligible respondents who were contacted by telephone (N=5,675), 518 agreed to be interviewed and yielded complete interviews (response rate of 9%). The final 2007 sample was restricted to those who provided mostly complete information on the survey (N=515). The second sample was collected between July 26th and August 29th, 2011. The second data collection effort resulted in a response rate of 16.2%. Sixteen cases were dropped from the dataset due to missing responses on

nearly all variables, reducing the 2011 sample size from N=505 to N=489. The response rates for both samples are lower than preferred. These response rates were calculated using all calls conducted, but appear worse than what is commonly reported due to the response rate calculation method. These rates were calculated from those who agreed to participate divided by all call attempts made, whereas many other reports of response rates calculate response rates by using all calls answered. This, together with the RDD sample selection procedures, suggests that the data were appropriate for use in this research. Still, a comparison of the sample's characteristics and the Georgia population is presented later as a gauge of the suitability of these data.

Data preparation.

Prior to empirical analysis, the data were screened for missing values and outliers. Dealing with missing data properly is important in all research analyses, as missing data may distort the results and lead to improper inferences. The most imperative point concerning missing data is the extent to which the missing values influence research results (McKnight, McKnight, Sidani, & Figueredo, 2007), not that the sample size is reduced (Adcock, 2005). Missing data are particularly problematic when they are non-random. For example, when portions of the target population are systematically non-responsive they become underrepresented in a dataset and analyses may be biased (Adcock, 2005). To check for this possibility the missing values for each of the variables of interest were scrutinized to determine whether any patterns of missingness were present. No patterns were identified in either of the two samples of the HFHF.

To guard against the problems of reduced sample size, bias, and underrepresentation of parts of the population being studied, multiple imputation (MI) was implemented for missing data treatment for the univariate, bivariate, and multivariate analyses for Research Questions 1,

2, and 3. MI procedures allow for the pooling of the estimates across many implicates derived from the original data, making this method a preferred option over single value imputation (Adcock, 2005). The method is preferred, in part, because unlike single imputation the multiple-implicate approach results in unbiased standard errors. For this research, an ICE imputation procedure that yielded 9 implicates was produced in Stata® 11.2 and all univariate, bivariate, and multiple regression models reflect estimates derived from this multiple imputation procedure. For all analyses involving structural equation models, LISREL 8.80 was used to compute full information maximum likelihood (FIML) estimation of missing values. The FIML approach doesn't impute the missing values, but uses all of the available information to provide a parameter estimate (Wothke, 2000). This is the widely-recommended method for dealing with missing data in structural equation models as it maximizes the likelihood of the model (Wothke, 2000; Enders & Bandalos, 2001).

FIML estimation has been shown to produce estimates that are unbiased in large samples, have small standard errors, and produce normal distributions (McKnight, et al, 2007). Indeed, Enders and Bandalos (2001) provided a rigorous comparison of the performance of four missing data techniques (FIML, listwise deletion, pairwise deletion, and similar response pattern imputation) in structural equation models with simulated data. Using the outcome measures of convergence failures, parameter estimate bias, parameter estimate efficiency, and model goodness of fit, the authors concluded that FIML estimation was the superior method. The FIML estimates were unbiased and more efficient than the other methods across in simulations with MCAR and MAR missingness. Additionally, FIML estimation had the lowest rate of convergence failures and provided near-optimal Type I error rates across simulations.

The presence of outliers can also cause problems with the inferences made as a result of analyses using data with outliers. An outlier is defined as an observation with an exceptionally large or small value (Stock & Watson, 2003). There are two main schools of thought on outliers. One is that outliers can have an unequal influence on results and may come from data entry errors or untruthful respondents. The other is that outliers may reflect true variation in respondents and is therefore of interest to the researcher. Identification and analysis of outliers is important to understand the influence of the outliers to decide the appropriate procedure to

A statistical macro provided by DeCarlo (1997) was used to screen the HFHF data for outliers. The DeCarlo macro calculates the significance of multivariate outliers, Cook's distance and the Mahalanobis distance for each observation. Stock and Watson (2007) suggest correcting any data entry errors or, if error cannot be corrected, dropping the observation from the dataset. In the 2007 sample, 63 observations (12.3% of the total sample) met the criteria for multivariate outliers, using .05 level of significance critical values. Fifty-five observations (11.2% of the total sample) met the criteria for multivariate outliers, using .05 level of significance critical values in the 2011 sample. After close inspection of the potential outliers, the outliers were not removed from the dataset. Rather, the outliers appear to be reflecting true differences in responses, not errors in the dataset or untruthful responses. In these samples, outliers appear to be the result of consistently high positive responses on scale items (specifically relationship items), likely due to their characteristics (such as being married an average of 22.7 years in the 2007 sample and 23.4 years in the 2011 sample). Indeed, a close inspection of these respondents across all other items in the survey revealed that these individuals reported having very high relationship satisfaction and more positive communication patterns—a reflection of their many years as a couple.

Design validity.

Concerns with design validity, both internal and external validity, exist with all data from every research design. For research results to have high internal validity means that inferences from the sample are valid for the population of interest (Stock & Watson, 2007). External validity refers to one's ability to generalize results from the population and setting of the study to other populations and studies. In the current research, potential threats to internal validity were minimized through data collection and sampling strategies that included the use of random digit dial (RDD) sampling and computer assisted telephone instrument (CATI). Using RDD, CATI, and two separate cross-sectional samples reduced the threats to internal validity of selection bias, instrumentation, testing, mortality, and maturation as identified by Campbell and Stanley (1963). Additionally, HFHF data included a variety of individual variables used alone, or as part of scales that have been validated in numerous other studies, that theoretically belong in the models used to answer the research questions.

The data collection procedures were designed to produce samples that would be representative of the State of Georgia. To offer a point of comparison, demographic and economic characteristics that were available in the HFHF samples and Current Population Survey (CPS) estimates of the populations of Georgia and the U.S. are shown in Table 2. The HFHF data were selected for this research as they are timely and, as illustrated in the preceding literature review, included variables of interest as motivated by both theory and the empirical literature.

Table 2.
Select demographic characteristics: HFHF samples and CPS estimates

	2007	2007 CPS		2011	2011 CPS	
Variable	HFHF	Georgia	U.S.	HFHF	Georgia	U.S.
Mean age	50.5	47.1	48.8	51.6	47.9	50.0
Sex (%)						
Male	40.8	50.0	50.0	37.9	50.0	50.0
Female	59.2	50.0	50.0	62.1	50.0	50.0
Education (%)						
No high school diploma	6.0	12.0	12.2	4.9	8.4	10.4
High school or GED	28.3	30.8	30.6	16.4	28.2	29.6
Some college/tech school, less than 4 yr degree	24.2	23.9	25.4	28.7	27.3	26.0
Bachelor degree of higher	39.4	33.4	31.8	50.1	36.1	34.0
Family income[a] (%)						
$0-19,999	3.9	6.0	6.8	3.7	9.7	6.9
$20,000-29,999	6.3	7.8	7.8	4.9	7.8	7.8
$30,000-39,999	9.3	10.3	9.2	7.2	8.3	8.3
$40,000-49,999	10.4	8.2	9.4	5.0	9.1	8.4
$50,000-59,999	10.9	10.1	8.9	6.3	7.6	8.4
$60,000-69,999	8.5	8.3	8.1	10.3	5.8	7.8
$70,000-79,999	8.9	8.1	7.7	11.1	8.6	7.2
$80,000-89,999	11.9	7.0	6.5	8.7	7.1	6.9
$90,000-99,999	6.7	6.4	5.5	5.5	4.6	5.6
$100,000 or more	23.3	27.8	30.2	37.4	31.5	32.6
Related children under 18 (%)						
0	7.4	51.8	53.3	22.5	54.4	55.6
1	21.6	20.1	18.2	16.7	18.1	17.6
2	33.3	18.5	18.4	34.2	19.1	17.2
3	21.0	6.9	7.1	16.5	5.3	6.6
4	7.9	1.9	2.2	4.7	2.5	2.1
5	4.3	0.4	0.5	2.9	0.4	0.6
6 or more	4.5	0.4	0.3	2.5	0.2	0.3
Race (%)						
White	80.6	76.0	85.7	73.8	75.3	85.4
African American	16.7	20.3	7.4	22.5	19.1	7.2
Asian	1.0	3.1	5.1	1.3	4.4	5.5
Multi-racial	1.7	0.6	1.8	2.4	1.3	1.9

Notes. HFHF statistics are based on 9 implicates.
[a] No income inflation adjustment.

Description of Samples

During both the 2007 and 2011 data collection periods, respondents were asked to answer a series of questions that collected demographic information; this information is shown in Table 3. The following discusses the demographic information for each sample, followed by a discussion of the equivalency of the two samples.

2007 sample.

In the 2007 sample, over half of the respondents were female (59.2%). The mean age of the sample was 50.5 years old (range: 18-85 years). On average, the respondents had been married 22.7 years (range: 0-66 years) and had 2.4 children together (range: 0-12 children). The largest category of respondents' educational attainment was 28.3% having a high school or GED; 40.4% of respondents had a bachelor's degree, some graduate work, or an advanced degree. Household income had 31.2% of responses missing (this is consistent with the level of missing data with previous work collecting sensitive information such as income). Using the imputed data, 18.6% had income less than $39,999, 40.6% had incomes between $40,000 and $79,999, and 40.8% with incomes of more than $80,000. A majority of respondents were White (80.6%) and 16.7% were African American.

2011 sample.

In the 2011 sample, 62.1% of the respondents were female with a mean age of 51.6 years old (range: 21-86 years). The respondents had been married to their spouse on average 23.2 years (range: 0-73 years) with 1.9 children together (range: 0-8 children) on average. A majority of the respondents were White (73.8%) and 22.5% were African American. Looking at education,

Table 3.
Demographic characteristics of HFHF samples

	Pooled Sample (N=1004)	2007 Sample (N=515)	2011 Sample (N=489)
Variable	Mean (SE)	Mean (SE)	Mean (SE)
Age	51.0 (0.47)	50.5 (0.68)	51.6 (0.66)
Male (%)	39.4	40.8	37.9
Income (%)[a]			
$0-$39,999	17.7	18.6	16.8
$40K-$59,999	18.0	22.7	13.1
$60K-$79,999	18.5	17.9	19.2
$80K-$99,999	15.6	17.5	13.5
$100K or more	30.2	23.3	37.4
Education (%)[a]			
High school education or less	5.5	6.0	4.9
High school or GED	22.5	28.3	16.4
Some college /tech school (no degree)	16.2	16.5	16.0
2-year degree	10.7	8.7	12.7
Bachelor degree	24.1	20.6	27.8
Graduate work or advanced/professional degree	21.0	19.8	22.3
Race (%)			
Black/African American	19.5	16.7	22.5
White	77.3	80.6	73.8
Other	3.2	2.7	3.7
Years married	23.0 (0.51)	22.7 (0.72)	23.2 (0.74)
Marital status (%)			
First marriage for both	63.2	61.2	65.2
First marriage for one spouse/remarriage for one spouse	17.2	17.9	16.6
Remarriage for both	19.6	20.9	18.2
Total number of children	2.1 (0.05)	2.4 (0.07)	1.9 (0.07)
Family structure (%)[a]			
Married with no children	14.8	7.4	22.4
Nuclear families	62.8	63.6	62.0
Stepfamilies	10.4	11.5	9.3
Blended families	12.0	17.5	6.3

Notes. Based on 9 implicates.
[a] Variables that are not equivalent between the 2007 and 2011 samples.

16.4% of respondents had a high school degree or GED; 50.1% of respondents had a bachelor's degree, some graduate work, or an advanced degree. About one-third (36.6%) of respondents did not report household income (this is consistent with the level of missing data with previous work collecting sensitive information such as income). Based on the imputed data, 16.8% had income less than $39,999, 32.3% had incomes between $40,000 and $79,999, and 50.9% with incomes of more than $80,000.

Comparison of samples.

Because the data for this study are from two separate samples, several factors were compared to determine if the two samples were equivalent. If statistically equivalent the samples may be used as pooled-cross section data. As described above, the sampling method should lead to statistically equivalent samples because all potential respondents in the population of interest had similar probabilities for selection in both the 2007 and 2011 samples.

Nine demographic variables were compared and tested for similarities to further evaluate the equivalency of the samples. T-tests (if the variable was continuous) and chi-square tests (if the variable was categorical) were used to assess the equivalence of the 2007 and 2011 samples. Six of the nine variables did not have significant differences between the two samples: age ($t(972) = -.99$, $p = .32$), sex ($\chi^2(1, N=983) = 1.18$, $p = .28$), number of times married ($t(276) = .73$, $p = .57$), years married ($t(998) = -.56$, $p = .47$), marital status ($\chi^2(2, N=1002) = 1.75$, $p = .42$), and race ($\chi^2(3, N=968) = 4.86$, $p = .18$). Total number of children ($t(997) = 5.42$, $p < .0001$), education ($\chi^2(7, N=975) = 28.40$, $p = .0002$), and income ($\chi^2(10, N=674) = 36.58$, $p < .0001$) all had statistically significant differences between the two samples. Based on these results the

samples were considered equivalent, allowing for comparisons between the two samples and pooling of the two samples when appropriate.

Measurement

Instrumentation.

The HFHF dataset includes many scales related to finances and relationships. The current research utilized several of the scales that are related to financial wellness, relationship satisfaction, and communication patterns. These measures are discussed in further detail in the following section. The descriptions of the measures used in these analyses, including the mean, standard deviation, skewness and kurtosis for each measure are presented in Table 4.

Financial wellness.

The Personal Financial Wellness (PFW) Scale™, which identifies both objective and subjective dimensions of wellness, was used to measure financial wellness (Prawitz et al., 2006a). Formerly the InCharge Financial Distress/Financial Well-Being Scale™, the PFW Scale™ has 8-items and an overall mean score can range from 1 (lowest financial wellness) to 10 (highest financial wellness), with higher mean scores indicate greater financial wellness (2007 M=7.59; 2011 M=7.18). The means for the eight items ranged from 7.01 as the lowest to 8.30 as the highest in the 2007 sample and from 6.45 to 7.98 in the 2011 sample. The scale was conceptualized as a paper and pen instrument, but was adapted for use with the CATI instrument and has been deemed reliable and valid for this use (Nielsen, 2010).

All 8 items on the PFW Scale™ are measured with 10-point Likert style questions. Five different response scales were used among the eight items in assessing the various aspects of

financial wellness (1=overwhelming stress to 10=no stress at all; 1=dissatisfied to 10=satisfied; 1=fell overwhelmed to 10=feel comfortable; 1=all the time to 10=never; and 1=no confidence to 10=high confidence). The PFW Scale™ was selected as the measure for financial wellness because it is a comprehensive measure that measures both the objective and subjective aspects of financial wellness. The scale includes items that measure the objective aspects of financial wellness (i.e. ability to pay bills and emergency savings funds) as well as subjective aspects of financial wellness (i.e. worry and stress about financial situation). Additionally, the scale includes an item that asks about satisfaction with current financial situation, which could be used as a global measure where needed. The eight items that comprise the PFW Scale™ fit within the conceptual model of financial wellness (Joo, 2008) as discussed in Chapter 2.

Couple's communication patterns.

The Communication Patterns Questionnaire, Short Form (CPQ-SF) (Christensen & Heavey, 1990) was used to measure respondent's perceptions of their own and their spouse's typical communication patterns when issues or problems arise during those discussions. The complete scale has 11 items measured on a 9-point Likert scale (1 = very unlikely; 9 = very likely). The items from this scale were grouped to form several subscales, including demand-withdrawal communication patterns, positive interaction, and criticize/defend subscales (Futris et al., 2010).

The three subscales identified by Futris et al. (2010) were used to assess the communication and interaction patterns of the couple in the current research. The three subscales each used three of the items in creating the subscale and higher scores indicate that the

respondent perceived that the couple more frequently engages in these behaviors. Scores of the three items are averaged to calculate the subscale score.

This research used the demand-withdrawal subscale as identified by Futris et al. (2010), using the three items of mutual avoidance, respondent discusses/spouse avoids, and spouse discusses/respondent avoids (2007 M=2.95; 2011 M=3.23). Individual items had response means ranging from 2.57 (lowest) to 3.24 (highest) in the 2007 sample and from 3.12 to 3.34 in the 2011 sample. The positive interaction subscale included items of mutual discussion, mutual expression, and mutual negotiation (2007 M=7.71; 2011 M=7.42). The three items on the positive interaction subscale had response item means that ranged from 7.51 (lowest) to 7.83 (highest) in the 2007 sample and from 7.16 to 7.60 in the 2011 sample. The criticize/defend subscale used the items of mutual blame, respondent criticizes/spouse defends, and spouse criticizes/respondent defends (2007 M=2.88; 2011 M=2.92). Means of responses ranged from 2.81 to 2.90 for the 2007 sample and 2.83 to 3.12 for the 2011 sample. The CPQ-SF subscales were used to create the latent constructs of positive and negative communication patterns.

Relationship satisfaction.

The 14-item Revised Dyadic Adjustment Scale (RDAS) (Busby et al., 1995) was used to assess relationship adjustment along three dimensions: dyadic consensus, satisfaction, and dyadic cohesion. Each item was answered using a 6-point Likert scale (1=always disagree; 6=always agree; 1=never; 6=all the time; 1=never; 6=everyday; 1=never; 6=more often than once a day).

In this research, the RDAS subscale of relationship satisfaction was used as the dependent construct of relationship satisfaction. The RDAS instrument also included a subscale of dyadic consensus and a subscale of dyadic cohesion. These two dimensions included items

that relate to the interaction and exchange patterns in the relationship to construct the measure of adjustment. Relationship adjustment, which looks specifically at the outcome of relationship satisfaction, is beyond the focus of the current research. The RDAS relationship satisfaction subscale was calculated as the sum score of four RDAS items: 1) considering divorce, 2) quarrel, 3) regret of marriage, and 4) getting on each other's nerves. The questions used were: "How often do you discuss or have you considered divorce, separation, or terminating your relationship?" (reldas10), "How often do you and your spouse quarrel?" (reldas11), "Do you ever regret that you married?" (reldas12), and "How often do you and your spouse "get on each other's nerves"?" (reldas13). These four items were answered using a 6-point Likert scale ranging from 1=never to 6=all of the time, but were reverse coded for analyses so that 0=all the time and 5=never. A sum score of these items was computed for each respondent; higher scores reflected greater relationship satisfaction (2007 M=15.81; 2011 M=15.90) and item means ranged from the lowest of 3.10 to the highest of 4.66 in 2007 and 3.06 to 4.68 in 2011.

Univariate and multivariate normality of instruments.

Many multivariate estimation methods, including some of those used in this research, assume that the data have a multivariate normal distribution. It is important to investigate this assumption, as non-normality in measurement data can lead to improper inferences. Non-normality can be the result of outliers, so the data were screened for outliers before screening for normality. A necessary condition for multivariate normality is that each of the variables has a univariate normal distribution, but normality of the individual variables does not guarantee multivariate normality (Kline, 2005; DeCarlo, 1997). The distribution of each variable of both

samples was examined for univariate normality and then the joint distributions of the variables were examined for multivariate normality.

This process began with an examination of descriptive statistics (skewness, kurtosis) that revealed violations of normality in a number of the variables used. The univariate and multivariate normality statistics for the measures and their items are presented in Table 4. Because the samples include married individuals that, on average, had been married 22.7 and 23.3 years, one may expect that some responses to be skewed toward the more positive ends of the items on the RDAS subscale and the CPQ-SF subscales. Kline (2005) suggests that within the context of structural equation modeling, skewness and kurtosis values outside of the acceptable range of |3| for skewness and |8| for kurtosis are problematic for normality. One item on the relationship satisfaction subscale, described as regret marriage, was outside of both of those guidelines with skewness values of -3.19 in 2007 and -3.31 in 2011 and kurtosis values of 11.20 in 2007 and 11.60 in 2011. Again, this is likely an artifact of the samples used here. The relative multivariate kurtosis (MVK) coefficient was used to measure multivariate normality. It was obtained using multivariate normality analysis in PRELIS 2.8. This coefficient is a Mardia-based kappa that is rescaled to have a mean of 1. When data have a multivariate normal distribution, the coefficient approaches a value of 1. Overall these data have MVK values that are greater than one. Individually the scales have values ranging from 1.07-1.98. All items analyzed together have MVK values of 1.53 for the 2007 sample and 1.37 for the 2011 sample. These values are higher than desired, most likely due to the non-normality of the individual variables. Again this is almost certainly an artifact of the long-term relationships that the individuals in these samples report. One should expect that individuals who have remained

Table 4. *Description of measures*

	2007 Sample						2011 Sample					
Variable	Mean	SD	Skew-ness	Kurt-osis	Relative MVK	N	Mean	SD	Skew-ness	Kurt-osis	Relative MVK	N
Financial wellness					1.56						1.47	
Level of financial stress	7.18	2.56	-0.74	-0.31		509	6.74	2.68	-0.57	-0.66		486
Satisfaction with financial situation[a]	7.01	2.63	-0.63	-0.48		510	6.45	2.80	-0.48	-0.76		488
Feelings about current financial condition[a]	7.42	2.50	-0.82	-0.09		510	6.77	2.80	-0.59	-0.70		486
Can't afford to go out	8.06	2.66	-1.26	0.43		502	7.66	2.81	-1.00	-0.14		477
Living paycheck to paycheck	7.15	3.36	-0.80	-0.90		509	6.84	3.41	-0.62	-1.16		483
Worry about living expenses	7.93	2.90	-1.30	0.42		512	7.46	3.11	-0.93	-0.52		486
Confidence regarding financial emergency[a]	8.30	2.84	-1.59	1.15		509	8.00	2.94	-1.28	0.30		486
Stress about finances in general	7.61	2.62	-0.98	-0.03		508	7.10	2.80	-0.80	-0.41		484
Demand-withdraw					1.26						1.07	
Mutual avoidance	6.87	2.95	-1.03	-0.55		506	6.72	2.98	-0.95	-0.70		478
Respondent discusses/spouse avoids	7.43	2.46	-1.48	0.95		505	6.88	2.83	-0.98	-0.53		473
Spouse discusses/respondent avoids	6.76	2.88	-0.96	-0.60		499	6.66	2.88	-0.90	-0.67		473
Positive interaction					1.98						1.64	
Mutual discussion	7.75	2.21	-1.88	2.53		506	7.53	2.42	-1.64	1.52		479
Mutual expression	7.83	2.13	-2.02	3.15		507	7.60	2.34	-1.68	1.72		477
Mutual negotiation	7.51	2.31	-1.65	1.66		502	7.16	2.52	-1.28	0.53		473
Criticize-defend					1.79						1.84	
Mutual blame	7.10	2.60	-1.21	0.15		507	6.88	2.69	-1.05	-0.22		473
Respondent criticize/spouse defends	7.11	2.68	-1.19	-0.01		501	7.16	2.57	-1.22	0.20		468
Spouse criticizes/respondent defends	7.19	2.54	-1.23	0.21		503	7.17	2.50	-1.24	0.34		470
Relationship satisfaction					1.93						1.89	
Discuss divorce	4.45	1.04	-2.46	6.39		510	4.56	0.98	-2.93	9.13		472
Quarrel	3.60	1.08	-1.03	1.33		508	3.58	1.08	-1.25	2.02		466
Regret marriage	4.66	0.87	-3.19	11.2		510	4.68	0.86	-3.31	11.60		469
Get on each other's nerves	3.10	1.28	-0.82	0.40		501	3.06	1.36	-0.83	0.20		472

Note. See Appendix A for the items of the scales and the response Likert scales.

[a] The direction of the responses on this item was reversed for this survey to reduce respondent confusion that occurs from response direction shifts. Responses were recoded to reflect the original scoring of the PFW Scale™.

married for many years will report relatively high levels of most of the positive characteristics that are included in this research.

Reliability and validity of measures.

The scales used in the current research measure unobservable characteristics, which makes measurement difficult because one cannot directly observe what one wants to measure (Crocker & Algina, 2006). Reliability of a measure relates to the consistency of the instrument, whereas validity relates to the fit of what the instrument is actually measuring (Crocker & Algina, 2006).

The most important reliability evidence for the instruments used in this research is internal consistency. Internal consistency is important for the measures used in this study because the individual items used to identify a construct must be homogenous (Crocker & Algina, 2006). In this study, this was assessed with Cronbach's alpha.

The original PFW Scale™ that was assessed via a national sample produced a Cronbach's alpha of 0.956, indicating extremely high internal consistency (Prawitz et al., 2006b). For this study, the PFW had a Cronbach's alpha of 0.89 (2007) and 0.91 (2011). These alphas indicate that the eight items used to construct the PFW Scale™, when used together, contribute to a highly consistent measure of financial wellness. The reliability coefficients for this instrument are well above .80, a threshold that indicates a high level of internal consistency (Crocker & Algina, 2006).

The RDAS relationship satisfaction subscale resulted in a Cronbach's alpha of 0.69 (2007) and 0.67 (2011). While relatively low, this still indicates an acceptably consistent measure of the relationship satisfaction. Testing reported a Cronbach's alpha coefficient for the

relationship satisfaction subscale was 0.85, suggesting high internal consistency (Busby et al., 1995). The subscale of positive interactions of the CPQ-SF resulted in a Cronbach's alpha of 0.62 (2007) and 0.64 (2011). In the development and testing of the CPQ-SF, the positive interaction subscale reported a Cronbach's alpha of 0.73 (Christensen & Heavey, 1990). Again, while these coefficients are lower than desired, Cronbach's alpha has been shown to be acceptable as low as 0.60 (Crocker & Algina, 2006). The demand-withdraw subscale resulted in a Cronbach's alpha of 0.59 (2007) and 0.53 (2011) and the criticize-defend subscale 0.82 (2007) and 0.78 (2011), while the positive interaction, demand-withdraw, and the relationship satisfaction subscales demonstrated weaker coefficients. The lower number of items included in the construction of the subscales may be responsible for the lower alpha coefficients, as more items result in higher coefficients.

It is challenging to find published evidence on the validity of many of the scales. Many times internal consistency measures are used as a proxy for measuring validity. While this offers support for validity, it is not a sufficient condition. Fortunately, the developers of the PFW Scale™ have attempted to establish and provide evidence of validity since its inception. They have examined validity in terms of face validity, content validity, predictive criterion validity, concurrent criterion validity, convergent construct validity, and discriminant construct validity (Prawitz, et al, 2006b). Of these categories the most relevant for this research is the construct validity (both convergent and discriminant) of the instrument. Construct validity refers to the degree to which an instrument can be considered to be an appropriate operational definition of the construct it is measuring. This is important for the PFW Scale™ as the score from the instrument is interpreted as a level of financial wellness.

The PFW Scale™ was developed as a paper and pencil instrument, but was used in the current research as part of a telephone interview. Nielsen (2010) tested the convergent validity of the PFW Scale™ with the 2007 HFHF data. Using the RDAS scale as a reference measure, the PFW Scale™ appropriately identified groups with high and low levels of marital adjustment as it related to financial wellness.

There is also evidence regarding the validity of the CPQ-SF subscales. In general, the CPQ-SF demonstrates acceptable validity (Christensen, Eldridge, Catta-Preta, Lim, & Santagata, 2006; Roberts, 2000). Futris and colleagues (2010) used the 2007 HFHF data to investigate the convergent and discriminate validity of the CPQ-SF and found that the subscales appropriately distinguished between groups with high marital adjustment and low marital adjustment.

The RDAS scale has demonstrated validity in several studies, most of which assess construct validity (Mitchell, Newell, & Schumm, 1983; Spanier, 1976, 1985). The RDAS is an updated version of Spanier's (1976) original Dyadic Adjustment Scale (DAS), the RDAS has improved validity compared to the DAS (Busby et al., 1995). A correlation coefficient of $r = .68$ offers evidence for construct and concurrent validity of the RDAS with the Locke-Wallace Marital Adjustment Scale (Busby et al., 1995; Locke & Wallace, 1959). Criterion validity was established by evidence that non-distressed couples were distinguishable from distressed couples according to their RDAS scores (Busby et al., 1995).

Analysis Plan

This research investigated the financial wellness of married individuals in 2007 and 2011, the role financial wellness plays in the relationship satisfaction of individuals who are married,

and the role communication plays in the relationship satisfaction. The specific research questions and hypotheses were presented in Chapter 2.

Variable selection.

The HFHF data include many variables that allow for the investigation of the relationship between financial wellness and the interpersonal and economic well-being of married individuals. The variables for the first three research questions were selected using previous research as a guide, framing financial wellness as a function of an individual's personal characteristics, objective attributes, perceived attributes, and attributes of their financial domain. Variable selection for the final two research question was guided by social exchange theory. All of the variables in the data were collected at the individual level, which is the unit of analysis for this study. The following describes the question or definition of each of the variables being used here, sorted by dependent and independent variables.

Dependent variables.

In this study two different variables were utilized as dependent variables: financial wellness as indicated by the Personal Financial Wellness Scale™ and relationship satisfaction as indicated by the Revised Dyadic Adjustment Scale. Both are described in the measurement section earlier in this chapter. For Research Questions 1, 2, and 3, financial wellness is the dependent variable. Financial wellness was indicated by the average score of the responses on the eight items from the PFW Scale™, which can range from 1 to 10. A score of one indicated overwhelming financial distress/lowest financial wellness whereas a score of ten indicated no financial distress/highest financial wellness. This measure of financial wellness included

objective and subjective indicators of financial wellness including a measure of financial satisfaction, consistent with the framework developed by Joo (2008).

Relationship satisfaction, a four-item subscale of the RDAS scale, served as the dependent variable in Research Questions 4 and 5. Using social exchange theory as a foundation, relationship satisfaction was derived as the outcome from the difference between rewards and costs and the individual's assessment of the difference (Sabatelli & Shehan, 1993). In the models estimated for this study, the relationship satisfaction subscale was estimated as a latent construct using the four individual items that make up the subscale (items 10-13). Refer to Table 5 for brief descriptions and coding of the dependent variables.

Independent and control variables.

The key independent variables being included in the analyses for the final two research questions were financial wellness, the communication patterns subscale of CPQ, and couple employment status (2011-only variable). For the research questions specifically examining the correlates of financial wellness, three subgroups of variables were included. The literature presented in Chapter 2 outlines the need to include demographic correlates when examining financial wellness due to the effect that individual characteristics have on financial wellness. The demographic correlates used to further investigate financial wellness included: age, sex, income, education, and race. As described in Chapter 2, the literature also demonstrates that the structure of a family or family status, specifically marital status and characteristics of children have been shown to effect financial wellness. The current research included a second subgroup of family status variables to examine the correlates of financial wellness that were related to family structure, including number of years married, marital status, number of children, young children

present, and family status. The final group of variables focused on financial behaviors derived from an index that indicated whether the respondent engaged in certain financial management behaviors: budgeting, planning expenses, evaluating spending, and writing down expenses. Inclusion of the financial behaviors index controlled for the possibility that these financial management behaviors affect financial wellness. Table 5 includes brief descriptions and coding of the independent variables used for the current research.

Statistical analyses.

This research used univariate, bivariate, and multivariate analyses to investigate the research questions. Descriptive statistics were used to create a demographic profile of each of the

Table 5.
Dependent and independent variables used in multivariate analysis

Variable	Description
Dependent Variables	
Personal Financial Wellness Score	A continuous variable of the composite PFW score, ranging from 1-10
Relationship Satisfaction (RDAS Subscale)	A continuous variable of the average of the four items for the RDAS subscale, ranging from 1-6 (modeled as a latent construct).
Key Independent Variables	
Personal Financial Wellness Score	A continuous variable of the composite PFW score, ranging from 1-10 (modeled as a latent construct).
Communication Patterns (CPQ Subscales)	A continuous variable of the average of items for the CPQ subscale, ranging from 1-9 (modeled as a latent construct).
Couple Employment Status[a]	Both employed (neither unemployed) in last four years; one spouse unemployed in last four years, both spouses unemployed in last four years; each coded as a dummy variable.
Demographic Correlates	
Age	A continuous variable of age in years, ranges from 18-86.
Sex	Coded as 0 if female. Coded as 1 if male

Income	$0-$19,999, $20K-$29,999, $30K-$39,999, $40K-$49,999, $50K-$59,999, $60K-$69,999, $70K-$79,999, $80K-$89,999, $90K-$99,999, $100K or more; each coded as a dummy variable.
Education	0-8 years of education, 9-11 years of education, high school or GED, some college /tech school (no degree), 2-year degree, bachelor degree, some graduate work (no degree), and advanced degree /professional degree; each coded as a dummy variable.
Race	White, Black/African American, and other each coded as a dummy variable.
Family Status Correlates	
Marital Status	First marriage for both, first marriage for one spouse/remarriage for one spouse, and remarriage for both; each coded as a dummy variable.
Years Married	A continuous variable of number of years married, ranging from 0-73.
Total Children	A continuous variable of number of children, ranging from 0-12.
Young Child	A dummy variable. Coded as 1 if a child(ren) under 5 years is present. Coded as 0 if no child(ren) under 5 years.
Familial Status	Nuclear families (with and without children) and step and blended families, or blended families; coded as a dummy variable.
Financial Behaviors Correlates	
Financial Behaviors	Index variable ranging from 0-4 indicating if respondent partakes in a combination of four financial behaviors (budget, plan expenses, evaluate spending, and write down expenses).

[a] Only available in the 2011 sample.

samples. Specifically, family structure and sociodemographic variables were analyzed. Family structure included items measuring marital status (first marriage or remarriage) and parental status (number of children, and biological or stepchildren). Variables for age, sex, education, and income were also included. Bivariate analyses were used to assess whether there were relationships between the independent and dependent variables for this study. Correlation

coefficients (Spearman and Pearson, as appropriate) were calculated to examine whether a relationship existed and, if so, the direction of that relationship (positive or negative). Identification of relationships at this bivariate level provides justification for further examination using multivariate methods. Multivariate analyses were used in this study to investigate the more complex relationships specified in the research questions. Specifically, ordinary least squares (OLS) regression analysis was used to investigate the correlates of personal financial wellness (Research Questions 2 and 3). Because the variables of interest also included latent constructs, structural equation models were used to investigate Research Questions 4 and 5. A description of the methods used to investigate each research question follows.

Research Question 1 (What was the level of financial wellness of married individuals in 2007 and 2011?) was investigated using t-tests. This allowed for the comparison of the level of personal financial wellness (composite score and individual scale items) of married individuals in 2007 and 2011. It was expected that there would be a decrease in the composite score of financial wellness as well as the individual scale items due to the Great Recession and continued unemployment that had affected the macro economy and the financial stress of many U.S. households.

Research Question 2 (What were the demographic, family status, and financial behavior correlates of financial wellness for married individuals in 2007 and in 2011?) examined the correlates of personal financial wellness, with the regression models being specified based on the previous empirical work discussed the literature review in Chapter 2. The model for Research Question 2 is presented as Equation 1.

$$PFW = B_0 + B_1Age + B_2Sex + B_3Income + B_4Education + B_5Race + B_6YearsMarried + B_7MaritalStatus + B_8Kidstotal + B_9YoungChild + B_{10} FamilyStatus + B_{11} FinancialBehaviorsIndex + e$$

Equation 1. OLS regression model for Research Question 2.

The model included demographic variables (age, sex, income, race, and education) that, as presented in Chapter 2, have previously been found to predict financial wellness. Income, race, and education are all categorical variables that were transformed to binary variables with all but one reference category included in the model. For income the reference category was earning more than $100,000. The reference category for the education variables was having a bachelor degree. The race variables had the reference category of White.

This research hypothesized that family status characteristics of the marital relationship may impact financial wellness, including number of years married and marital status investigating the difference between first marriages and higher order marriages, first marriage for both, first marriage for one spouse and remarriage for one spouse, or remarriage for both (coded as three dummy variables with first marriage for both as reference category). Children may impact personal financial wellness in several ways; this model included the number of children present, if child(ren) under 5 years were present, and family structure. Having a child under 5 in the family was included as a dummy variable, coded as a child under 5 years being present as 1 and no child under 5 years as 0. The structure of a family was investigated in terms of children, with nuclear families (with and without children) and step/blended families. These categories were also coded as binary dummy variables.

Finally, financial behaviors were included based on Joo's conceptual model of financial wellness (2008). The dependent variable used in these analyses accounts for three of the four subcategories of financial wellness (objective status, financial satisfaction, and subjective perception). The fourth subcategory, financial behavior, was not measured as a part of the financial wellness dependent variable, so it was included as an independent variable based on

Joo's conceptual model (2008). Specifically, financial behaviors were captured in an index variable looking at the financial behaviors of the respondent. The financial behaviors in the index included whether they (1) make plans on how to use money, (2) write down (on paper or computer) where money is spent, (3) evaluate spending, and (4) use a written budget. The index ranges from 0 to 4, 0 for none of the behaviors present to 4 for all four behaviors present.

Research Question 3 (Were there differences in the demographic, family status, and financial behavior correlates of financial wellness for married individuals between 2007 and 2011?) further examined the potential differences for financial wellness between the time periods of 2007 and 2011. The OLS regression model previously used to estimate personal financial wellness (Research Question 2) was used for Research Question 3; the model is presented as Equation 2.

$$PFW = B_0 + B_1Age + B_2Sex + B_3Income + B_4Education + B_5Race + B_6YearsMarried + B_7MaritalStatus + B_8Kidstotal + B_9YoungChild + B_{10}\,FamilyStatus + B_{11}\,FinancialBehaviorsIndex + B_{12}Time + B_{13}\text{-}\,B_{24}\,InteractionVariables + e$$

Equation 2. OLS regression model for Research Question 3.

To estimate Equation 2 the data were pooled for a joint analysis of both 2007 and 2011. However, two model specification issues needed to first be reviewed before this analysis. First, the means of the independent variables needed to be reviewed. If the mean changed in each year, then a year dummy variable had to be included in the analysis to account for year effects. This was the case for the HFHF data, so a year dummy variable was included in the pooled regression analysis. Second, the relationship between the dependent and independent variables was reviewed. If the relationship was different between the years, then an interaction between the independent and time dummy variables needed to be included in the pooled regression analysis.

A Chow test was used to determine whether the regression model differed between the time periods. For these pooled model estimates the Chow test was significant (F=1.74, p=0.087), indicating that interaction variables must be included in the pooled regression analysis. That final model is presented as Equation 2, and it includes a variable for time (year) and interaction variables between the time variable and the independent variables.

Research Question 4 (For these samples, did communication patterns mediate the relationship between financial wellness and relationship satisfaction?) further investigated the role of communication as a possible mediator between financial wellness and relationship satisfaction. Several model specifications were examined and could be determined appropriate for this analysis under varying expectations about which variation of the constructs is most appropriate (see Appendix B for alternative model specifications and selection criteria used). Because of the large literature that indicated that positive and negative communication patterns are different dimensions they were included as separate communication constructs. With this expectation that positive and negative communication patterns exhibit different processes that may differently mediate financial wellness and relationship satisfaction, separate models for each pattern were estimated. The hypothesized full structural equation models (SEM) are presented in Figures 5 and 6. The three main latent constructs include financial wellness, communication patterns (one model with positive communication patterns and the other with the two negative patterns creating two latent constructs for each subscale informing the main construct of negative communication patterns), and relationship satisfaction.

Both samples were used separately to examine this research question (Research Question 4). The estimates from both of the models were compared and examined for differences in the predictors between the two samples and whether the model fits well for both samples. Each

model was estimated using full information maximum likelihood (FIML). PRELIS version 2.8 was used to format the data for use. Using SIMPLIS, the raw data from PRELIS is used with the FIML estimation. Using the FIML estimation, all of the observed data are used to estimate the model (Wothke, 2000). This is the recommended method for analyzing data with missing values as it maximizes the likelihood of the model (Wothke, 2000; Enders & Bandalos, 2001). For these models, only 1.67% of values for all variables in the dataset were missing values in the 2007 sample and 2.44% for the 2011 sample.

Research Question 5 (Does unemployment affect the model of relationship satisfaction?) exploited a difference in the two samples to estimate an alternate version of the model that included labor force attachment. Instead of using financial wellness as the latent construct (independent variable) on the far left side of the model, a manifest variable was used as a solely exogenous variable. This model assessed the effects of labor force attachment (specifically, unemployment in the preceding four years) on the relationship satisfaction model used for Research Question 4. This information was available only in the 2011 sample, so only the 2011 data was used for examining this question. Under the assumption that intra-household resource sharing occurs, a couple-level indicator of unemployment was created. The three categories (neither spouse unemployed over last four years, one spouse unemployed at some point over last four years, and both spouses unemployed at some point over the last four years) were transformed into three binary variables. The reference category in the analysis was both spouses employed in the last four years (no spell of unemployment for either spouse). The models for this research question are presented in Figure 7 and Figure 8. Due to sample size restrictions encountered when specifying a model with this many paths, one modification was necessary when estimating the model with negative communication patterns. Instead of having two

separate latent constructs for each of the CPQ negative subscales to create an overarching latent construct of negative communication patterns, all manifest communication items were used to create a single latent communication construct. With that one exception and, of course, the inclusion of unemployment status, the models were the same as those estimated for Research Question 4. For these models that included unemployment, only 2.32% of values were missing.

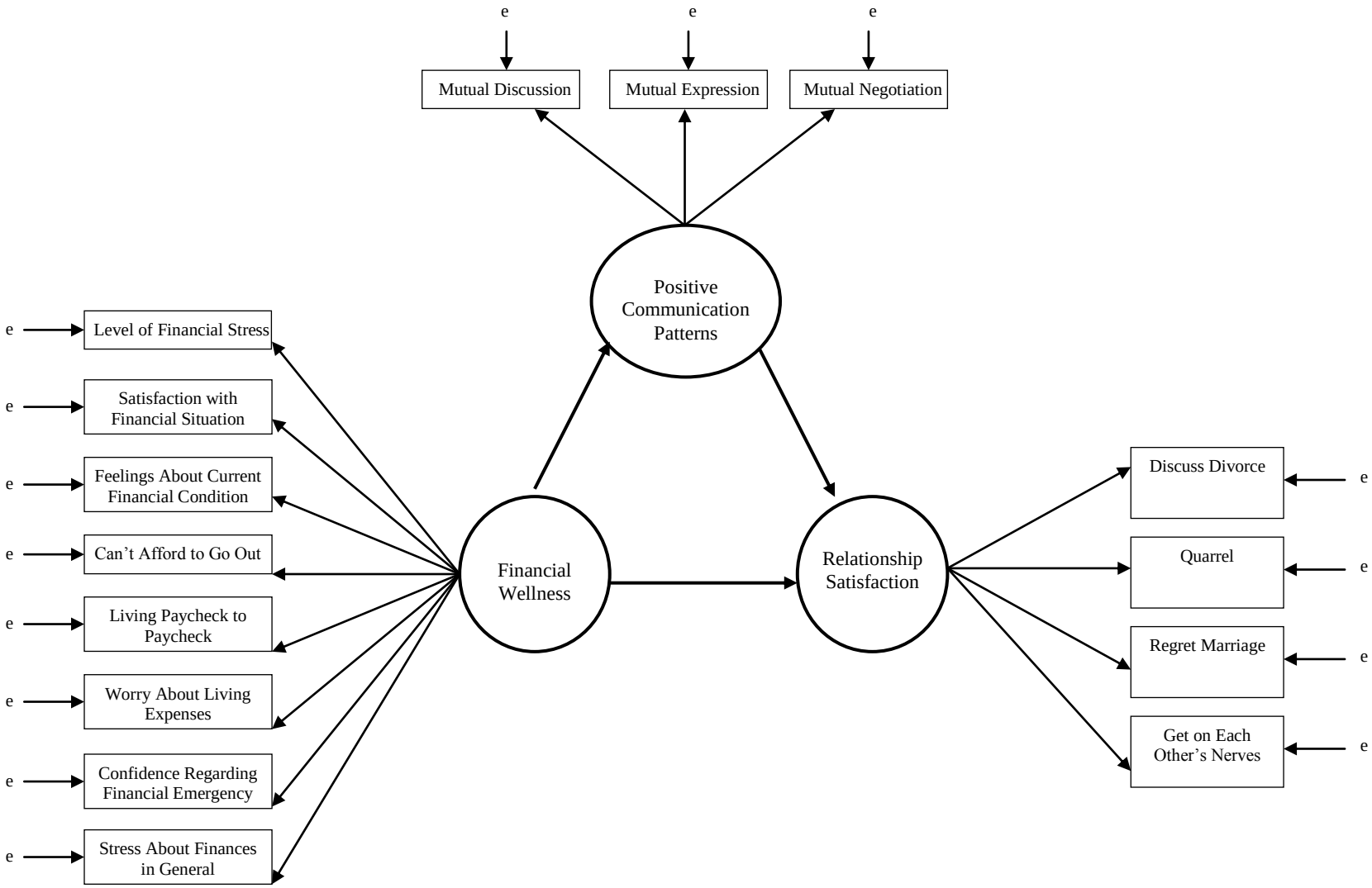

Figure 5. Hypothesized model, positive communication patterns for Research Question 4.

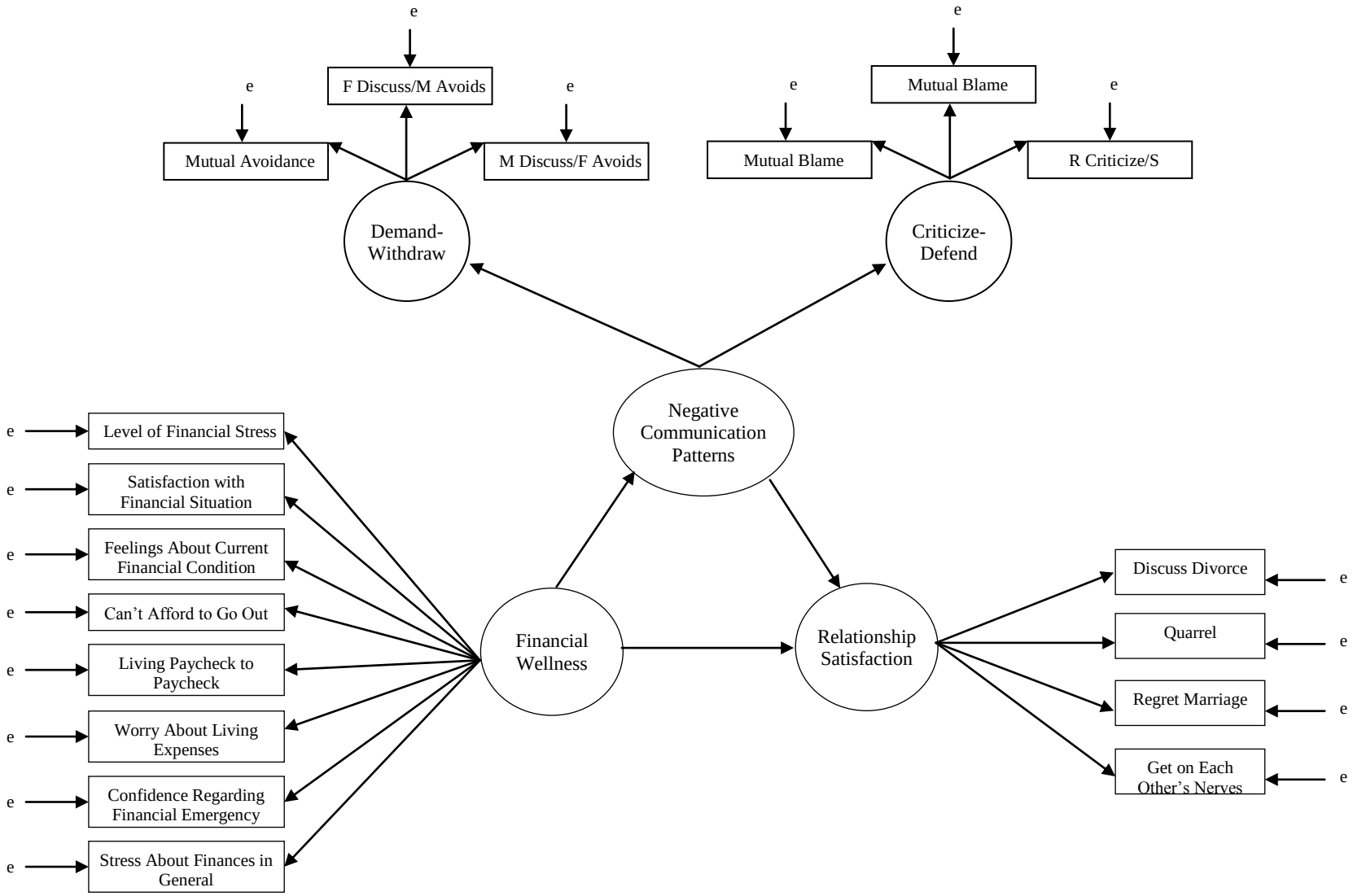

Figure 6. Hypothesized model, negative communication patterns for Research Question 4.

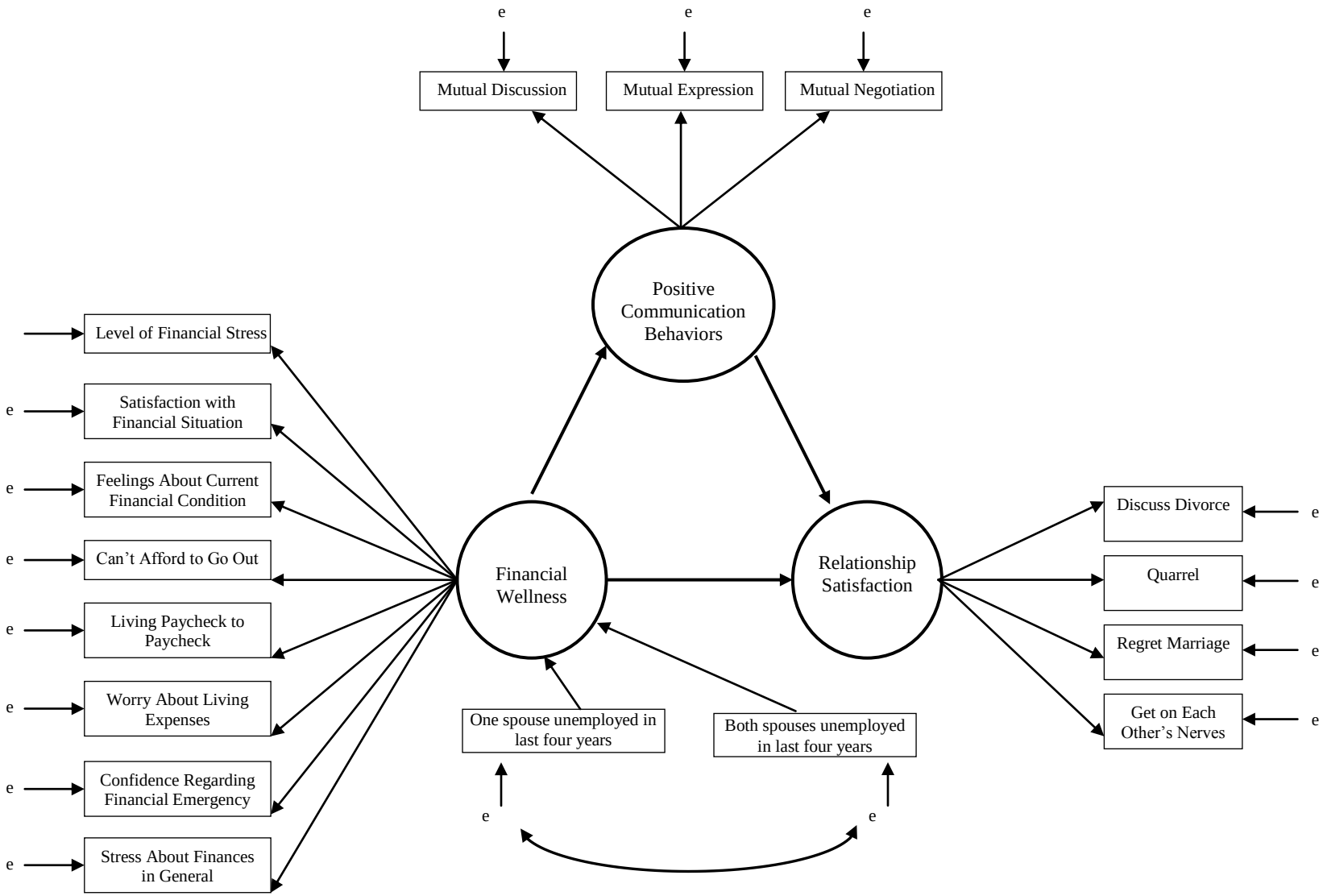

Figure 7. Hypothesized model, positive communication patterns for Research Question 5.

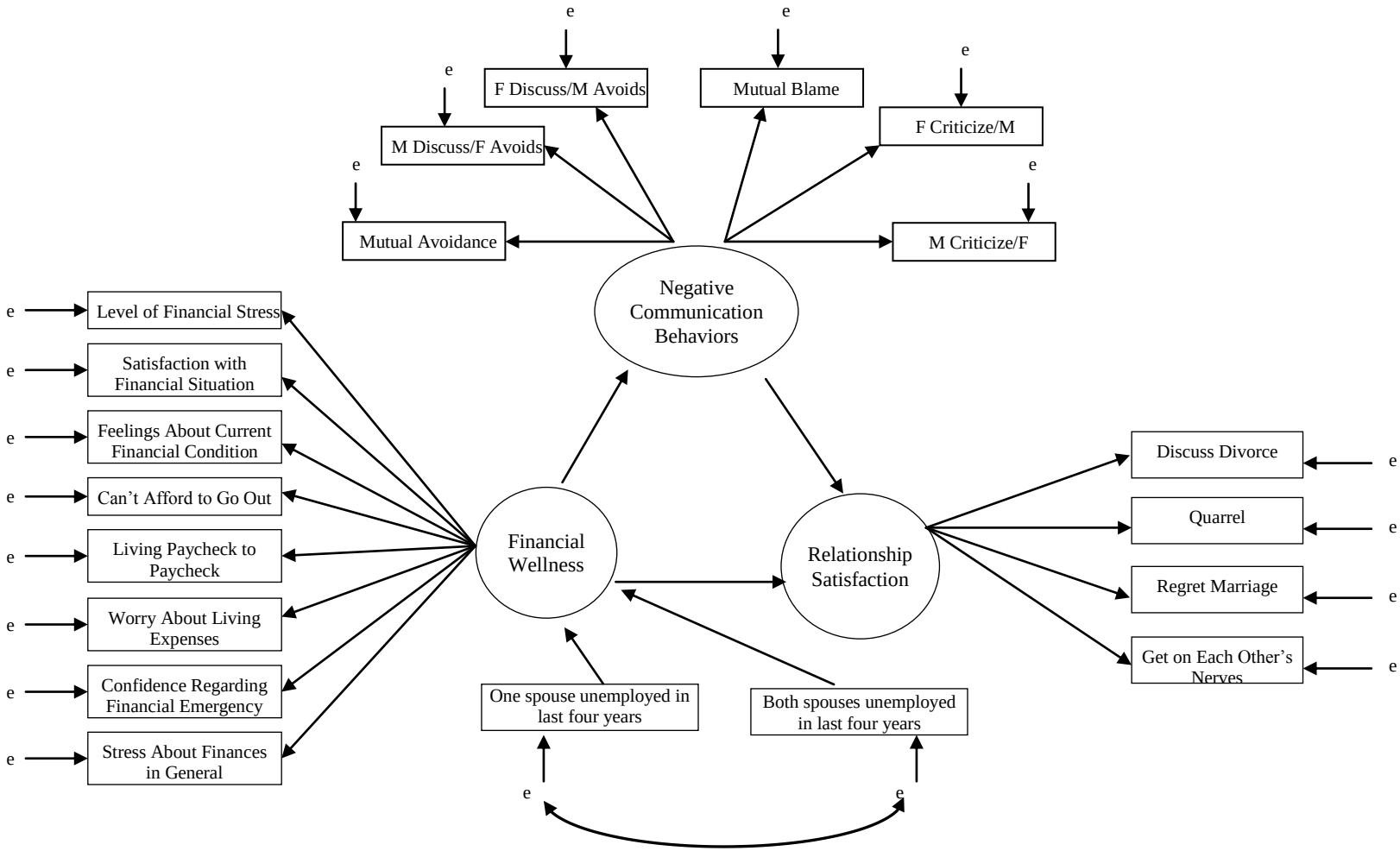

Figure 8. Hypothesized model, negative communication patterns for Research Question 5.

CHAPTER 4

RESULTS

Using the Healthy Families, Healthy Finances (HFHF) data, empirically-appropriate analyses were undertaken to answer each of the research questions. This chapter includes a descriptive analysis for the analyses used to investigate each research question. Using nine implicates to better account for the relatively low levels of missing data present in the HFHF data, bivariate analyses were used to answer Research Question 1; ordinary least squares multiple regression models were estimated for each of the two HFHF samples to answer Research Question 2 (for single-year samples) and Research Question 3 (for the pooled sample); and full structural equations models were estimated, with a full information maximum likelihood (FIML) method, to answer Research Questions 4 and 5.

Analysis of Variables of Interest

Prior to running the bivariate and multivariate analyses to answer each research question, descriptive statistics were examined. This was done to have a better understanding of the unique characteristics of the samples with respect to the variables being used to answer the research questions. First, univariate statistics of the analytic variables of interest are presented in Table 6 for the pooled sample (N=1,004) as well as separately for the 2007 sample (N=515) and the 2011 sample (N=489). Again, all univariate and bivariate values reflect the use of analyses from nine multiply-imputed implicates. Correlation coefficients among each of the variables used in the multivariate analyses can be found in Appendix C.

Table 6.
Analytic variables of interest

	Pooled Sample (N=1004)	2007 Sample (N=515)	2011 Sample (N=489)
Variable	Mean (SE)	Mean (SE)	Mean (SE)
Age	51.0 (0.47)	50.5 (0.68)	51.6 (0.66)
Male (%)	39.4	40.8	37.9
Income (%)			
$0-$39,999	17.7	18.6	16.8
$40K-$59,999	18.0	22.7	13.1
$60K-$79,999	18.5	17.9	19.2
$80K-$99,999	15.6	17.5	13.5
$100K or more	30.2	23.3	37.4
Years married	23.0 (0.51)	22.7 (0.72)	23.2 (0.74)
Marital status (%)			
First marriage for both	63.2	61.2	65.2
First marriage for one spouse/remarriage for one spouse	17.2	17.9	16.6
Remarriage for both	19.6	20.9	18.2
Education (%)			
High school education or less	5.5	6.0	4.9
High school or GED	22.5	28.3	16.4
Some college /tech school (no degree)	16.2	16.5	16.0
2-year degree	10.7	8.7	12.7
Bachelor degree	24.1	20.6	27.8
Graduate work or advanced/professional degree	21.0	19.8	22.3
Race (%)			
Black/African American	19.5	16.7	22.5
White	77.3	80.6	73.8
Other	3.2	2.7	3.7
Total number of children	2.1 (0.05)	2.4 (0.07)	1.9 (0.07)
Child (ren) 5 years or younger (%)	25.1	23.5	26.8
Family structure status (%)			
Married with no children	14.8	7.4	22.4
Nuclear families	62.8	63.6	62.0
Stepfamilies	10.4	11.5	9.3
Blended families	12.0	17.5	6.3
Financial behaviors index	2.9 (0.04)	2.7 (0.05)	3.0 (0.05)

Note. Based on 9 implicates

Research Question 1

To investigate Research Question 1 (What was the level of financial wellness of married individuals in 2007 and 2011?), the first set of analyses determined the levels of financial wellness of married individuals in both years. Specifically, the overall level of financial wellness (the composite score) as well as the individual items that make up the financial wellness scale

Table 7.
Personal Financial Wellness™ score and items

	Pooled Sample (N=1004)	2007 Sample (N=515)	2011 Sample (N=489)	T-value
Variable	**Mean (SE)**	**Mean (SE)**	**Mean (SE)**	
Overall Personal Financial Wellness™ score 1=lowest financial wellness; 10=highest financial wellness	7.37 (0.07)	7.60 (0.09)	7.13 (0.10)	3.25***
Level of financial stress [a] 1=overwhelming stress; 10=no stress at all	6.96 (0.08)	7.18 (0.11)	6.74 (0.12)	2.63***
Satisfaction with financial situation 1=dissatisfied; 10=satisfied	6.74 (0.09)	7.01 (0.12)	6.45 (0.13)	3.22***
Feelings about current financial condition 1=feel overwhelmed; 10=feel comfortable	7.09 (0.09)	7.41 (0.11)	6.76 (0.13)	3.86***
Can't afford to go out 1=all the time; 10=never	7.85 (0.09)	8.05 (0.12)	7.64 (0.14)	2.34***
Living paycheck to paycheck 1= all the time; 10=never	7.00 (0.11)	7.17 (0.15)	6.82 (0.16)	2.33***
Worry about living expenses [a] 1=worry all the time; 10=never worry	7.70 (0.10)	7.93 (0.13)	7.46 (0.14)	2.45***
Confidence regarding financial emergency 1=no confidence; 10=high confidence	8.15 (0.09)	8.29 (0.13)	7.99 (0.13)	2.36***
Stress about finances in general [a] 1=overwhelming stress; 10=no stress at all	7.35 (0.09)	7.60 (0.12)	7.09 (0.13)	2.94***

Note. A t-test was used to test for differences between the two samples; multiple imputation treatment with 9 implicates.

[a] The direction of the responses on this item was reversed for this survey to reduce respondent confusion that occurs from response direction shifts. Responses were recoded to reflect the original scoring of the PFW Scale™.
*p ≤ .10. **p ≤ .05. ***p ≤ .01

were investigated using t-tests. The results of the t-tests, including tests for differences between the mean value for the pooled sample as well as the two samples separately, are shown in Table 7. Statistically significant differences ($p \leq .01$) between 2007 and 2011 financial wellness scores were found for both the overall score and the eight individual scale items. The bivariate t-tests consistently (all scale items and the overall scale score) indicated that the 2011 sample had lower financial wellness than the 2007 sample.

Research Question 2

The second research question asked "What were the demographic, family status, and financial behavior correlates of financial wellness for married individuals in 2007 and in 2011?" As shown in Table 8, this question was investigated with an ordinary least squares regression that identified the correlates of financial wellness separately for 2007 and 2011.

The results of these regression models serve two purposes. First, they illustrate the relationship between the demographic characteristics, family status, and financial behaviors and financial wellness. Second, by estimating the correlates of financial wellness using the samples separately, the results can be compared to determine whether the correlates are the same for the two time periods. Because the models examined variables specifically related to the categories of demographic characteristics, family status, and financial behaviors, the regression results are discussed within these groups, for each of the two samples.

For the 2007 sample, none of the variables for family status or financial behaviors were statistically significant; only demographic variables were found to be significant predictors of financial wellness after controlling for all other variables in the model. The variables age and male were both significant for 2007. Age was significant at the .01 level whereas male was only

Table 8.
Regression model for correlates of financial wellness

Variable	2007 Sample		2011 Sample	
	B	**SE B**	**B**	**SE B**
Constant	7.073***	0.61	7.442***	0.67
Demographic variables				
Age	0.036***	0.01	0.015	0.01
Male	0.299*	0.17	-0.023	0.20
Income				
$0-$39,999	-1.791***	0.29	-2.758***	0.31
$40K-$59,999	-1.325***	0.27	-1.708***	0.31
$60K-$79,999	-1.015***	0.27	-1.014***	0.26
$80K-$99,999	-0.545**	0.27	-0.719**	0.29
$100K or more (reference)	-	-	-	-
Education				
High school education or less	-0.986**	0.40	0.238	0.48
High school or GED	-0.577**	0.26	-0.132	0.31
Some college /tech school (no degree)	-0.082	0.28	-0.651**	0.29
2-year degree	-0.536	0.34	0.352	0.31
Bachelor degree (reference)	-	-	-	-
Graduate work or advanced/professional degree	-0.057	0.26	-0.052	0.26
Race				
White (reference)	-	-	-	-
Black/African American	-0.378	0.24	-0.227	0.24
Other	-0.395	0.52	0.634	0.50
Family status variables				
Years married	0.005	0.01	0.008	0.01
Marital status				
First marriage for both (reference)	-	-	-	-
First marriage for one spouse/remarriage for one spouse	-0.269	0.27	-0.269	0.29
Remarriage for both	-0.383	0.34	-0.114	0.32
Total number of children	-0.045	0.06	-0.035	0.07
Child (ren) 5 years or younger	0.414	0.26	0.222	0.24
Family structure status				
Nuclear families	0.008	0.28	0.105	0.29
Step/blended families (reference)	-	-	-	-
Financial behaviors variables				
Financial behaviors index	-0.040	0.07	-0.068	0.08
R^2/Adjusted R^2	0.249/0.219		0.254/0.223	
Model *F*	8.18***		7.92***	

Note. Multiple imputation treatment with 9 implicates.
N=515 for 2007 sample; N=489 for 2011 sample.
*p ≤ .10. **p ≤ .05. ***p ≤ .01

marginally significant at the .10 level. The four categories of income, relative to the reference category of $100K or more, were statistically significant. The two lowest categories of education, high school education or less and high school education or GED, were statistically significant when compared to the reference category of bachelor degree.

Looking at the regression results for the 2011 sample, several similarities to the 2007 sample are apparent. Again, none of the family status or financial behavior variables were statistically significant. The demographic variables that were statistically significant were all in the income categories and one education category. All of the income categories (reference category of $100K or more income) were significant at the .01 level, with the exception of the category of $80K-$99,999 which was significant at the .05 significance level. The education category of some college/tech school, no degree (reference category of bachelor degree) was significant at the .05 level of significance. Together, the results of these two regression models suggest that demographic characteristics, specifically the objective financial measure of income, was the consistent correlate for financial wellness in both time periods.

Research Question 3

Research Question 3 asked whether there were differences in the demographic, family status, and financial behavior correlates of financial wellness for married individuals in 2007 and 2011. This question builds on what was learned from Research Question 2 by pooling the two samples and specifying a model that allows one to identify any significant differences in the coefficients in 2007 versus 2011. As discussed in Chapter 3, a time dummy variable and interaction terms (created for each variable by interacting the time dummy variable with each

variable) were included in the model to account for the two samples being pooled. Results for the pooled sample are presented in Table 9.

Table 9.
Regression model for correlates of financial wellness, pooled sample

Variable	B	SE B
Constant	7.189***	0.59
Demographic variables		
Age	0.034***	0.01
Male	0.299*	0.17
Income		
$0-$39,999	-1.791***	0.30
$40K-$59,999	-1.323***	0.28
$60K-$79,999	-1.016***	0.28
$80K-$99,999	-0.544**	0.28
$100K or more (reference)	-	-
Education		
High school education or less	-0.979**	0.42
High school or GED	-0.578**	0.27
Some college /tech school (no degree)	-0.079	0.29
2-year degree	-0.543	0.35
Bachelor degree (reference)	-	-
Graduate work or advanced/professional degree	-0.055	0.27
Race		
White (reference)	-	-
Black/African American	-0.391	0.24
Other	-0.409	0.54
Family status variables		
Years married	0.004	0.01
Marital status		
First marriage for both (reference)	-	-
First marriage for one spouse/remarriage for one spouse	-0.272	0.27
Remarriage for both	-0.387	0.34
Total number of children	-0.042	0.06
Child (ren) 5 years or younger	0.366	0.27
Family structure status		
Nuclear families	0.010	0.23
Other types (step, blended, no children) (reference)	-	-
Financial behaviors variables		
Financial behaviors index	-0.041	0.07
Time dummy (0=2007; 1=2011)	0.204	0.81

Interaction Variables (interaction with time dummy variable)		
Demographic variable interactions		
Age	-0.018	0.02
Male	-0.335	0.25
Income		
$0-$39,999	-0.964**	0.43
$40K-$59,999	-0.398	0.41
$60K-$79,999	0.003	0.38
$80K-$99,999	-0.170	0.40
$100K or more (reference)	-	-
Education		
High school education or less	1.202*	0.63
High school or GED	0.437	0.40
Some college /tech school (no degree)	-0.586	0.41
2-year degree	0. 882*	0. 46
Bachelor degree (reference)	-	-
Graduate work or advanced/professional degree	-0.011	0.37
Race		
White (reference)	-	-
Black/African American	0.182	0.33
Other	1.073	0.72
Family status variable interactions		
Years married	0.005	0.02
Marital status		
First marriage for both (reference)	-	-
First marriage for one spouse/remarriage for one spouse	0.033	0.38
Remarriage for both	0.313	0.46
Total number of children	-0.019	0.09
Child (ren) 5 years or younger	-0.123	0.35
Family structure status		
Nuclear families	0.143	0.28
Other types (step, blended, no children) (reference)	-	-
Financial behaviors variable interactions		
Financial behaviors index	-0.025	0.106
$R^{2/}$ Adjusted R^2	0.260 / 0.228	
Model F	8.21***	

Note. Multiple imputation treatment with 9 implicates.
N=1,004
*p ≤ .10. **p ≤ .05. ***p ≤ .01

The first coefficients in Table 9 are the coefficients for the 2007 time period. To get the 2011 values, the 2007 coefficient must be added to the same variable's interaction coefficient. Most pertinent for this research question is the significance for the interaction terms. In this specification, a significant interaction term coefficient indicates the presence of a statistically significant difference between the 2007 and 2011 samples on that particular variable, controlling for all else included in the model.

Three variables were found to have statistically significant differences between the two samples; one income category and two education categories. The income category for $0-$39,999 (reference category of $100K or more) had a coefficient of -1.787 for the 2007 sample and -2.755 for the 2011 sample (-1.787 + -0.964 = -2.755). This variable was significantly different in the two samples at the .05 level of significance. The two education variable categories that were different between the two samples were marginally significantly (.10 level of significance). The two categories different between the two samples were high school education or less and having a two-year degree (relative to having a bachelor degree). Having a high school education or less had a coefficient of -0.977 for the 2007 sample and 0.223 for the 2011 sample (-0.977 + 1.202 = 0.223). While having a two-year degree had a coefficient of -0.543 for the 2007 sample and 0.339 for the 2011 sample (-0.543 + 0.882 = 0.339).

The results of this two-period, pooled regression model with time interactions suggests there were not many differences in the correlates of financial wellness in 2007 versus 2011. The three variables demonstrating differences were within categories of larger concepts (education and income) and the two education categories were only marginally significant, further suggesting that there are minimal differences between 2007 and 2011 on these specific variables.

Research Question 4

As described in Chapter 2, both empirical literature and existing theory offer some evidence that the ways couples communicate can affect their satisfaction with the marital relationship. Thus, Research Question 4 investigates whether, for these samples, did communication patterns mediate the relationship between financial wellness and relationship satisfaction?

To investigate this question two structural equation models were specified for each sample. As fully described in Chapters 2 and 3 and illustrated in Figure 5, the first model for each sample examined the possible mediating role of positive communication patterns in the relationship of financial wellness and relationship satisfaction. As fully described in Chapters 2 and 3 and illustrated in Figure 6, the second model for each sample examined the possible mediating role of negative communication patterns for financial wellness and relationship satisfaction. Separate models for positive and negative communication patterns provide more insight into the examination of this question. Because the focus of the research question is on the mediating effect of communication, the separate models allow for the examination of mediation positive and negative communication separately which aligns better with the literature (e.g. Burleson & Denton, 1997; Heene, Buysse, &VanOost, 2005) that suggests that positive and negative communications are two separate dimensions.

The results from these separate models are presented as follows: first, the 2007 sample models positive communication patterns model then the negative communication patterns model. The results of the 2007 sample models are then followed by the results for the 2011 sample models, first the positive communication patterns model then the negative communication

patterns model. For each of the four models a table and description of the model fit indices precede a table and description of specific model path coefficients.

Each model's fit was assessed before examining parameter estimates, as a good fitting model is required for interpreting the parameters in the model. Model fit is the ability of the estimated model to reproduce the original data and a good fitting model is considered to be reasonably consistent with the data, but not necessarily perfect reproductions (Kenny, 2011). Because there is no one single structural equation model fit criterion that is accepted by the research community, it is customary to assess numerous model fit criteria. Hu & Bentler (1998; 1995), Kline (2005), and MacCallum, Browne, & Sugawara (1996) have all developed guidelines for the use of, and interpretation of, model fit indices.

For the current research, model fit was evaluated using the FIML chi-square (χ^2), the root mean square error of approximation (RMSEA), 90% confidence interval for RMSEA, the p-value for test of close fit, and analysis of standardized residuals. Including the chi-square value as a measure of fit, is not necessarily beneficial to the current research due to the limitations of the test at this sample size (Kenny, 2011), but it is reported as it is a standard and consistent index to report for structural equation models. RMSEA is reported because it is sensitive to model misspecification, but not sensitive to distribution of the data and sample sizes (Kenny & McCoach, 2003). The 90% confidence intervals and p-value test for close fit are used because they help to better understand the influence of sampling error that may be present in the RMSEA (Kenny, Kaniskan, & McCoach, 2011). To look at the overall model fit, standardized residuals were examined for indications of non-negligible model misfit. Ultimately, these indices were examined because of their availability for the FIML estimation method as well as their complimentary analysis of model fit.

Following model fit, parameter values of each model are discussed first for the measurement components (the loadings of individual items onto the latent constructs) and then the structural component (the links between the latent constructs in the model) of the model. For ease of reading, the coefficients are presented in table form in line with the discussion of each model and the figures with values are included at the end of this chapter to allow for easier visual comparison of the models.

Positive communication patterns in 2007 sample.

Model fit.

The model fit indices for the 2007 sample positive communication patterns model are presented in Table 10. The chi-square value assesses the magnitude of the difference between the original and the reproduced covariance matrices. It assesses the level of discrepancy between the original and the model-implied covariance matrices, and therefore directly tests how well a model fits the observed data. The chi-square statistic comes with some limitations, including the possibility of rejecting the model even when it reproduces the original data well (Hu & Bentler, 1995; Weston & Gore, 2006). The chi-square value for the current model indicates a poor fit (χ^2 =247.06 (df 87, p=0.0)). This was the only fit index that showed a poor fit, but the model chi-square is almost universally considered unreliable because in structural equation models using data with more cases (400 +) the chi-square is almost always statistically significant (Kenny, 2012). Chi-square as a model fit index is very sensitive to sample size—the sample N is the denominator— and the degree of multivariate normality of the data (Jöreskog & Sörbom, 2007).

Due to the limitations associated with using chi-square as a measure of model fit, additional fit indices were used. RMSEA is a stand-alone fit index, a category in which indices

Table 10.
Fit indices for Research Question 4 analysis for positive communication patterns model with 2007 sample

Index	Value	Indication of Fit	Suggested Cut-Off Values
χ^2	247.06 (df 87, p=0.0)	Poor fit.	Nonsignificant. (Models with more cases (400 +), the chi square is almost always statistically significant.)
RMSEA	0.060	Good/Mediocre fit.	0.06 or less (Hu & Bentler, 1998) 0.01 or less (excellent fit), 0.05 or less (good fit), and 0.08 (mediocre fit) (MacCallum, Browne, & Sugawara, 1996)
90% Confidence Interval for RMSEA	(0.051, 0.069)	Mediocre fit.	Lower level is very near zero (no worse than 0.05) and upper value less than .08 (Kenny, Kaniskan, & McCoach, 2011)
P-Value for Test of Close Fit	0.033	Poor fit.	p > 0.05: the fit of the model is close (good fit). p < 0.05: model's fit is worse than close fitting (poor fit) (Kenny, 2011).

assess how well the tested model reproduces the original data, without consulting a reference model (Hu & Bentler, 1999). For this model, the RMSEA = 0.06, indicating a good model fit (Hu & Bentler, 1995) or a mediocre fit (MacCallum et al., 1996).

For this model, the 90% confidence interval for RMSEA (0.051, 0.069) indicated mediocre fit. Using the criteria of the lower level is very near zero (no worse than 0.05) and upper value less than .08 (Kenny et al., 2011). The p-value for test of close fit resulted in a p-value of 0.033 for this model. A p-value greater than 0.05 indicates the fit of the model is close

(good fit), whereas a p-value less than 0.05 indicates that the model's fit is worse than close fitting (poor fit) (Kenny, 2011).

To assess the overall model fit, standardized residuals were also examined. Standardized residuals are the differences between S and Σ expressed as z-scores. Values greater than the absolute value of 2.0 standard deviations are usually considered to be problem values, indicating some level of model misfit. Because no model presents a perfect fit, it is accepted practice to tolerate 10% of the standardized residuals to exceed this |2.0| threshold (Gerbing & Anderson, 1993). Among the standardized residuals in the model, 6 out of 120 standardized residuals (5.00%) exceeded the |2.0| cut-off, providing further evidence that the model fit the data well.

Parameter values.

The standardized parameter estimates of both the measurement and structural components of the hypothesized model for relationship satisfaction including positive communication patterns are presented in Tables 11 and 12. Figure 9 (at the end of this chapter) contains a diagram of the full model including the standardized parameter estimates.

The measurement model of a structural equation model allows one to evaluate how well the observed variables combine to create the latent constructs. As seen in Table 11, all of the factor loadings of the measurement part of this model were statistically significant. All eight financial wellness items had significant loadings (standardized factor loadings ranged from 0.58 to 0.82). The R^2 for each of the eight items was moderate to high ranging from 0.34 to 0.67, indicating that they measure the same latent factor. The three items measuring positive communication patterns had significant loadings on the construct (standardized factor loadings were: 0.54, 0.59, and 0.66). The R^2 for each of the three items were also moderate, ranging from

0.29 to 0.44. Finally, the four items loading on to relationship satisfaction were also all statistically significant. The standardized factor loadings ranged from 0.51 to 0.68. The R^2 for each of the items were low to moderate, ranging from 0.30 to 0.46.

Table 11.
FIML parameter estimates for factor loadings in the SEM model for Research Question 4 analysis, positive communication patterns

Parameter	Standardized	SE	R^2	T-value
	2007 Model Factor Loadings			
Financial wellness → Level of financial stress	0.75***	0.10	0.56	19.04
Financial wellness → Financial situation	0.66***	0.11	0.44	16.28
Financial wellness → Financial condition	0.73***	0.10	0.54	18.54
Financial wellness → Can't afford to go out	0.62***	0.11	0.39	14.85
Financial wellness → Paycheck to paycheck	0.75***	0.13	0.56	19.03
Financial wellness → Living expenses	0.79***	0.11	0.63	20.81
Financial wellness → Financial emergency	0.58***	0.12	0.34	13.81
Financial wellness → Finances in general	0.82***	0.10	0.67	21.74
Communication patterns → Mutual discussion	0.54	--	0.29	--
Communication patterns → Mutual expression	0.59***	0.16	0.35	7.81
Communication patterns → Mutual negotiation	0.66***	0.19	0.44	7.90
Relationship satisfaction → Discuss divorce	0.68	--	0.46	--
Relationship satisfaction → Quarrel	0.55***	0.06	0.30	9.36
Relationship satisfaction → Regret marriage	0.64***	0.05	0.41	10.25
Relationship satisfaction → Get on each other's nerves	0.51***	0.07	0.26	8.85

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

In the structural part of the model, the three hypothesized direct effects were all statistically significant at the 99% confidence level. The standardized direct effect of financial wellness on positive communication patterns was 0.32, meaning that a one standard deviation increase in financial wellness predicts a 0.32 standard deviation increase in positive relationship behaviors, when controlling for relationship satisfaction. Secondly, the standardized direct effect of financial wellness on relationship satisfaction was 0.44, indicating that a standard deviation increase in financial wellness predicts a 0.44 standard deviation increase in relationship satisfaction, when controlling for positive communication patterns. Finally, the standardized direct effect of positive communication patterns on relationship satisfaction was 0.30, meaning that a one standard deviation in positive communication patterns predicts a 0.30 standard deviation increase in relationship satisfaction.

Table 12.
FIML parameter estimates for direct effects for Research Question 4 analysis for the 2007 Model with positive communication patterns

	Direct Effects		
Parameter	Standardized	SE	T-value
Financial wellness → Positive communication patterns	0.32***	0.06	4.99
Financial wellness → Relationship satisfaction	0.44***	0.06	5.11
Communication patterns→ Relationship satisfaction	0.30***	0.08	5.48

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

In addition to the direct effects, there was an indirect effect of financial wellness on relationship satisfaction through positive communication patterns (meaning: financial wellness → positive communication patterns → relationship satisfaction). The standardized estimate of this indirect effect of financial wellness on relationship satisfaction is (0.32)*(0.30) = 0.096. Meaning, the score in relationship satisfaction is expected to increase by 0.096 standard

deviations for every standard deviation increase on the financial wellness through its prior effect on positive communication patterns. Using both the direct and indirect effects, the standardized total effect of financial wellness on relationship satisfaction was the sum of its direct effect, 0.32, and indirect effect through positive communication patterns, 0.096, for a total effect of 0.416. That is, for every standard deviation increase in financial wellness a 0.416 standard deviation increase is expected in relationship satisfaction via all presumed causal pathways between these latent variables.

Negative communication patterns in 2007 sample.

Model fit.

The fit indices for the negative communication patterns model in the 2007 sample can be found in Table 13. The chi-square value, to assess how well the model fits the observed data, for the 2007 model including negative communication patterns was also significant, indicating poor fit (χ^2 =345.81 (df 130, p=0.0)). The three other fit indices all indicate good model fit when the model is estimated with negative communication patterns. The stand-alone fit index RMSEA (0.057) and the 90% confidence interval for RMSEA (0.050, 0.064) indicated a good fitting model (MacCallum et al., 1996; Kenny et al., 2011). The p-value for test of closeness of fit cleared the 0.05 cut-off with a value of 0.061 to indicate good fit (Kenny, 2011). In reviewing the standardized residuals, to assess overall model fit, 15 out of the 171 (8.77%) residuals were greater than the threshold of |2.0|, indicating a good fitting model according to Gerbing & Anderson (1993).

Table 13.
Fit indices for Research Question 4 analysis for negative communication patterns model with 2007 sample

Index	Value	Indication of Fit	Suggested Cut-Off Values
χ^2	345.81 (df 130, p=0.0)	Poor fit.	Nonsignificant. (Models with more cases (400 +), the chi square is almost always statistically significant.)
RMSEA	0.057	Good fit.	0.06 or less (Hu & Bentler, 1998) 0.01 or less (excellent fit), 0.05 or less (good fit), and 0.08 (mediocre fit) (MacCallum, Browne, & Sugawara, 1996)
90% Confidence Interval for RMSEA	(0.050, 0.064)	Good fit.	Lower level is very near zero (no worse than 0.05) and upper value less than .08 (Kenny, Kaniskan, & McCoach, 2011)
P-Value for Test of Close Fit	0.061	Good fit.	p > 0.05: the fit of the model is close (good fit). p < 0.05: model's fit is worse than close fitting (poor fit) (Kenny, 2011).

Parameter values.

The factor loadings of the measurement component of the 2007 model that included negative communication patterns are presented in Table 14 and the structural components in Table 15. A diagram containing the full model including standardized parameter estimates can be found in Figure 10 at the end of the chapter.

All of the factor loadings were statistically significant. The eight financial wellness items had standardized factor loadings ranging from 0.58 to 0.82 and R^2 values ranging from 0.34 to 0.67. The items loading onto the first negative communication patterns construct of demand-

Table 14.
FIML parameter estimates for factor loadings in the SEM model for Research Question 4 analysis, negative communication patterns

Parameter	Standardized	SE	R^2	T-value
	2007 Model Factor Loadings			
Financial wellness → Level of financial stress	0.74***	0.10	0.55	19.01
Financial wellness → Financial situation	0.66***	0.11	0.44	16.26
Financial wellness → Financial condition	0.73***	0.10	0.54	18.57
Financial wellness → Can't afford to go out	0.62***	0.11	0.39	14.86
Financial wellness → Paycheck to paycheck	0.74***	0.13	0.55	18.95
Financial wellness → Living expenses	0.79***	0.11	0.63	20.82
Financial wellness → Financial emergency	0.58***	0.12	0.34	13.82
Financial wellness → Finances in general	0.82***	0.10	0.67	21.82
Demand-withdraw → Mutual avoidance	0.36	--	0.13	--
Demand-withdraw → R discusses/S avoids	0.64***	0.24	0.41	6.59
Demand-withdraw → S discusses/R avoids	0.76***	0.34	0.58	6.70
Criticize-defend → Mutual blame	0.63	--	0.40	--
Criticize-defend → R criticizes/S defends	0.92***	0.17	0.84	14.47
Criticize-defend → S criticizes/R defends	0.77***	0.14	0.60	14.05
Relationship satisfaction → Discuss divorce	0.64	--	0.41	--
Relationship satisfaction → Quarrel	0.58***	0.06	0.33	9.72
Relationship satisfaction → Regret marriage	0.62***	0.05	0.39	10.23
Relationship satisfaction → Get on each other's nerves	0.55***	0.08	0.30	9.34

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

withdraw had standardized factor loadings of 0.36, 0.64, and 0.76 and R^2 values of 0.13, 0.41, and 0.58. The second negative behaviors construct of criticize-defend had standardized factor loadings of 0.63, 0.92, and 0.77. The R^2 for each of the three items of relationship satisfaction had standardized factor loadings ranged from 0.55 to 0.64. The R^2 for each of the items were low to moderate, ranging from 0.30 to 0.41.

Upon examining the hypothesized direct effects in the structural component of the model, two of the hypothesized direct effects from financial wellness to negative communication patterns and negative communication patterns to relationship satisfaction were both statistically significant at the 99% confidence level. First, the standardized direct effect of financial wellness to negative communication patterns was -0.45, meaning an increase by one standard deviation in financial wellness predicts a 0.45 standard deviation decrease in negative communication patterns, when controlling for relationship satisfaction. Second, the standardized direct effect of negative communication patterns on relationship satisfaction was -0.72; meaning that a one standard deviation increase in negative communication patterns

Table 15.
FIML parameter estimates for direct effects for Research Question 4 analysis for the 2007 Model with negative communication patterns

	Direct Effects		
Parameter	Standardized	SE	T-value
Communication patterns→ Demand-withdraw	0.81***	0.12	-6.43
Communication patterns→ Criticize-defend	0.70***	0.07	-9.90
Financial wellness → Communication patterns	-0.45***	0.06	-6.91
Financial wellness → Relationship satisfaction	0.11	0.07	1.74
Communication patterns→ Relationship satisfaction	-0.72***	0.08	-8.87

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

predicts a 0.72 standard deviation decrease in relationship satisfaction. The direct effect of financial wellness on relationship satisfaction had a parameter of 0.11, but was not statistically significant in this model.

This model estimates an indirect effect of financial wellness on relationship satisfaction through negative communication patterns (meaning: financial wellness → negative communication patterns → relationship satisfaction). The standardized estimate of this indirect effect of financial wellness on relationship satisfaction is (-0.45)*(-0.72) = 0.324. Meaning, the score in relationship satisfaction is expected to increase by 0.324 standard deviations for every one standard deviation increase in financial wellness through negative communication patterns. Because the direct effect between financial wellness and relationship satisfaction was not statistically significant, the total effect between these two variables is only the indirect effect of 0.324.

Positive communication patterns in 2011 sample.

Model fit.

The model fit indices for the 2011 sample positive communication patterns model are presented in Table 16. The chi-square value for this model indicated a poor fit (χ^2 =270.76 (df 87, p=0.0)). Again, this was the only index demonstrating a poor fit, but is considered unreliable as chi-square values are almost always statistically significant in structural equation models estimated with sample sizes over 400 (Kenny, 2011) and depending on the degree of multivariate normality of the data (Jöreskog & Sörbom, 2007).

For this model, the RMSEA = 0.066, indicating a mediocre model fit (Hu & Bentler, 1995; MacCallum et al., 1996). The 90% confidence interval for RMSEA (0.057, 0.075) also

indicated mediocre fit (Kenny et al., 2011). The p-value for test of close fit resulted in a p-value of 0.002 for this model. A p-value less than 0.05 indicates a poor model fit (Kenny, 2011). Standardized residuals were also examined. Standardized residuals were reviewed as a measure of overall model fit. For this model, 6 out of 120 standardized residuals (5.00%) were greater than the suggested cut-off of |2.0|. The standardized residuals indicate a good fit of the model (Gerbing & Anderson, 1993).

Table 16.
Fit indices for Research Question 4 analysis for positive communication patterns model with 2011 sample

Index	Value	Indication of Fit	Suggested Cut-Off Values
χ^2	270.76 (df 87, p=0.0)	Poor fit.	Nonsignificant. (Models with more cases (400 +), the chi square is almost always statistically significant.)
RMSEA	0.066	Mediocre fit.	0.06 or less (Hu & Bentler, 1998) 0.01 or less (excellent fit), 0.05 or less (good fit), and 0.08 (mediocre fit) (MacCallum, Browne, & Sugawara, 1996)
90% Confidence Interval for RMSEA	(0.057, 0.075)	Mediocre fit.	Lower level is very near zero (no worse than 0.05) and upper value less than .08 (Kenny, Kaniskan, & McCoach, 2011)
P-Value for Test of Close Fit	0.002	Poor fit.	p > 0.05: the fit of the model is close (good fit). p < 0.05: model's fit is worse than close fitting (poor fit) (Kenny, 2011).

Parameter values.

The standardized parameter estimates of both the measurement and structural components of the hypothesized model for relationship satisfaction including positive communication patterns for the 2011 sample are presented in Tables 17 and 18. Figure 11, at the end of this chapter, contains a diagram of the full model including the standardized parameter estimates.

All of the factor loadings of the measurement component (allows for an evaluation of how well the observed variables create the latent constructs) of the model were statistically significant, as seen in Table 17. For the financial wellness construct, all eight items had significant loadings (standardized factor loadings ranged from 0.65 to 0.84). The R^2 for the eight items were all moderate to high ranging from 0.42 to 0.70, indicating that they are measuring the same latent factor. The three items making up the positive communication patterns subscale had significant loadings on the construct (standardized factor loadings were: 0.60, 0.61, and 0.63). The R^2 for each of the three items were also moderate, ranging from 0.36 to 0.40. The third construct, relationship satisfaction, had four items with statistically significant loadings (standardized factor loadings ranged from 0.54 to 0.62). The R^2 for each of the items were low to moderate, ranging from 0.29 to 0.38.

For the structural component of the model (the links between the latent constructs in the model), the three hypothesized direct effects that make up the structural model were all statistically significant at the 99% confidence level. The standardized direct effect of financial wellness on positive communication patterns was 0.23, meaning an increase by one standard deviation in financial wellness predicts a 0.23 standard deviation increase in positive communication patterns, when controlling for relationship satisfaction. Secondly, the

Table 17.
FIML parameter estimates for factor loadings in the SEM model for Research Question 4 analysis, positive communication patterns

Parameter	Standardized	SE	R^2	T-value
	2011 Model Factor Loadings			
Financial wellness → Level of financial stress	0.72***	0.11	0.52	17.84
Financial wellness → Financial situation	0.65***	0.12	0.42	15.62
Financial wellness → Financial condition	0.72***	0.11	0.52	17.97
Financial wellness → Can't afford to go out	0.67***	0.12	0.46	16.21
Financial wellness → Paycheck to paycheck	0.80***	0.13	0.63	20.55
Financial wellness → Living expenses	0.83***	0.12	0.70	22.08
Financial wellness → Financial emergency	0.69***	0.12	0.48	16.85
Financial wellness → Finances in general	0.84***	0.11	0.70	22.19
Communication patterns → Mutual discussion	0.60	--	0.36	--
Communication patterns → Mutual expression	0.63***	0.19	0.40	7.77
Communication patterns → Mutual negotiation	0.61***	0.20	0.38	7.77
Relationship satisfaction → Discuss divorce	0.60	--	0.36	--
Relationship satisfaction → Quarrel	0.54***	0.07	0.29	7.94
Relationship satisfaction → Regret marriage	0.59***	0.06	0.35	8.32
Relationship satisfaction → Get on each other's nerves	0.62***	0.10	0.38	8.50

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

standardized direct effect of financial wellness on relationship satisfaction was 0.23, indicating that a standard deviation increase in financial wellness predicts a 0.23 standard deviation increase in relationship satisfaction, when controlling for positive communication patterns. Finally, the standardized direct effect of positive communication patterns on relationship

satisfaction was 0.28; meaning that a standard deviation increase in positive communication patterns predicts a 0.28 standard deviation increase in relationship satisfaction.

Table 18.
FIML parameter estimates for direct effects for Research Question 4 analysis for the 2011 Model with positive communication patterns

	Direct Effects		
Parameter	Standardized	SE	T-value
Financial wellness → Positive communication patterns	0.23***	0.06	3.74
Financial wellness → Relationship satisfaction	0.23***	0.06	3.74
Communication patterns→ Relationship satisfaction	0.28***	0.08	3.73

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

This model also estimates an indirect effect of financial wellness on relationship satisfaction through positive communication patterns (meaning: financial wellness → positive communication patterns → relationship satisfaction). The standardized estimate of this indirect effect of financial wellness on relationship satisfaction was (0.23)*(0.28) = 0.064. Meaning, the score in relationship satisfaction is expected to increase by 0.064 standard deviations for every one standard deviation increase on the financial wellness through its prior effect on positive communication patterns. Using both the direct and indirect effects, the standardized total effect of financial wellness on relationship satisfaction was the sum of its direct effect, 0.23, and indirect effect through positive communication patterns, 0.064, for a total effect of 0.294. That is, for every standard deviation increase in financial wellness a 0.294 standard deviation increase is expected in relationship satisfaction via all presumed causal pathways between the latent constructs.

Negative communication patterns in 2011 sample.

Model fit.

The model fit indices for the 2011 model with negative communication patterns are included in Table 19. The chi-square value (to test how well the model fits the observed data) for the 2011 model including negative communication patterns was also significant, indicating poor fit (χ^2 =320.09 (df 130, p=0.0)). The three other fit indices all indicated mediocre or good model fit when the model was estimated with negative communication patterns. RMSEA (0.055) indicated mediocre fit and the 90% confidence interval for RMSEA (0.047, 0.062)

Table 19.
Fit indices for Research Question 4 analysis for negative communication patterns model with 2011 sample

Index	Value	Indication of Fit	Suggested Cut-Off Values
χ^2	320.09 (df 130, p=0.0)	Poor fit.	Nonsignificant. (Models with more cases (400 +), the chi square is almost always statistically significant.)
RMSEA	0.055	Mediocre fit.	0.06 or less (Hu & Bentler, 1998) 0.01 or less (excellent fit), 0.05 or less (good fit), and 0.08 (mediocre fit) (MacCallum, Browne, & Sugawara, 1996)
90% Confidence Interval for RMSEA	(0.047, 0.062)	Good fit.	Lower level is very near zero (no worse than 0.05) and upper value less than .08 (Kenny, Kaniskan, & McCoach, 2011)
P-Value for Test of Close Fit	0.15	Good fit.	p > 0.05: the fit of the model is close (good fit). p < 0.05: model's fit is worse than close fitting (poor fit) (Kenny, 2011).

indicated a good fitting model (MacCallum et al., 1996; Kenny et al., 2011). The p-value for test of closeness of fit cleared the 0.05 cut-off with a value of 0.15 to indicating very good fit (Kenny, 2011). Standardized Residuals 11 out of the 171 (6.43%) residuals were greater than the absolute value of 2, indicating a good fitting model (Gerbing & Anderson, 1993).

Parameter values.

The factor loadings of the measurement component of the 2011 model including negative communication patterns are presented in Table 20 and structural parameters are presented in Table 21. Figure 12, at the end of this chapter, contains a diagram of the full model including both the measurement and structural components of the model with standardized parameter estimates. Looking at the measurement component, all of the factor loadings were statistically significant at the 99% confidence level. The eight financial wellness items had standardized factor loadings ranging from 0.65 to 0.84 and R^2 values ranging from 0.42 to 0.70. The items loading onto the first negative communication patterns construct of demand-withdraw had standardized factor loadings of 0.47, 0.54, and 0.56 and R^2 values of 0.22, 0.29, and 0.32. The second construct for negative behaviors constructed of criticize-defend had standardized factor loadings of 0.58, 0.87, and 0.81). The R^2 for each of the three items were 0.35, 0.75, and 0.65. Finally, the four items that load on to relationship satisfaction had standardized factor loadings ranged from 0.56 to 0.63. The R^2 for each of the items were low to moderate, ranging from 0.31 to 0.40.

Turning to the structural component of the model, the three hypothesized direct effects in the model of financial wellness and relationship satisfaction that included negative communication patterns were all statistically significant; two at the 99% confidence level and

Table 20.
FIML parameter estimates for factor loadings in the SEM model for Research Question 4 analysis, negative communication patterns

Parameter	Standardized	SE	R^2	T-value
	2011 Model Factor Loadings			
Financial wellness → Level of financial stress	0.72***	0.11	0.52	17.79
Financial wellness → Financial situation	0.65***	0.12	0.42	15.60
Financial wellness → Financial condition	0.72***	0.11	0.62	17.91
Financial wellness → Can't afford to go out	0.68***	0.12	0.46	16.26
Financial wellness → Paycheck to paycheck	0.80***	0.13	0.64	20.62
Financial wellness → Living expenses	0.84***	0.12	0.70	22.15
Financial wellness → Financial emergency	0.69***	0.12	0.48	16.82
Financial wellness → Finances in general	0.84***	0.11	0.70	22.15
Demand-withdraw → Mutual avoidance	0.47	--	0.22	--
Demand-withdraw → R discusses/S avoids	0.54***	0.25	0.29	6.11
Demand-withdraw → S discusses/R avoids	0.56***	0.26	0.32	6.16
Criticize-defend → Mutual blame	0.58	--	0.34	--
Criticize-defend → R criticizes/S defends	0.87***	0.18	0.75	12.03
Criticize-defend → S criticizes/R defends	0.81***	0.17	0.65	12.03
Relationship satisfaction → Discuss divorce	0.59	--	0.34	--
Relationship satisfaction → Quarrel	0.56***	0.07	0.31	8.21
Relationship satisfaction → Regret marriage	0.57***	0.06	0.33	8.34
Relationship satisfaction → Get on each other's nerves	0.63***	0.10	0.40	8.76

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

one at the 95% confidence level. The standardized direct effect of financial wellness to negative communication patterns was -0.30, meaning an increase by one standard deviation in financial wellness predicts a 0.30 standard deviation decrease in negative communication patterns, controlling for relationship satisfaction. Second, the standardized direct effect of negative communication patterns on relationship satisfaction was -0.55, meaning that a one standard deviation increase in negative communication patterns predicts a 0.55 standard deviation decrease in relationship satisfaction. The direct effect of financial wellness on relationship satisfaction had a parameter of 0.13 and was statistically significant in this model at the 95% confidence level. This indicates that a one standard deviation increase in financial wellness predicts a 0.13 standard deviation increase in relationship satisfaction.

Table 21.
FIML parameter estimates for direct effects for Research Question 4 analysis for the 2011 Model with negative communication patterns

	Direct Effects		
Parameter	Standardized	SE	T-value
Communication patterns→ Demand-withdraw	0.72***	0.12	-6.29
Communication patterns→ Criticize-defend	0.75***	0.10	-7.90
Financial wellness → Communication patterns	-0.30***	0.07	-4.48
Financial wellness → Relationship satisfaction	0.13**	0.06	2.07
Communication patterns→ Relationship satisfaction	-0.55***	0.09	-6.30

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.
** Statistically significant at confidence level of 95%; critical t-value of 1.96 used.

This model estimated an indirect effect of financial wellness on relationship satisfaction through negative communication patterns (meaning: financial wellness → negative relationship behaviors → relationship satisfaction). The standardized estimate of this indirect effect of

financial wellness on relationship satisfaction was (-0.30)*(-0.55) = 0.165. Therefore, relationship satisfaction is expected to increase by 0.165 standard deviations for every one standard deviation increase on the financial wellness through negative communication patterns. The total effect of financial wellness on relationship satisfaction was calculated using both the direct and indirect effects. It was the sum of its direct effect, 0.13, and indirect effect through negative communication patterns, 0.165, for a total effect of 0.295. That is, for every standard deviation increase financial wellness a 0.295 standard deviation increase is expected in relationship satisfaction via all presumed causal pathways between these variables.

Although a full discussion of the implications of the results of these four models follows in Chapter 5, it is worth noting here that together these models both provide evidence of positive and negative communication patterns acting different within marital relationships, specifically in the model of the relationship between financial wellness and relationship satisfaction for married individuals. Utilizing an approach with separate models for positive and negative communication patterns did provide more insight into this question. The models containing positive communication patterns did not indicate a mediating relationship, whereas the models containing negative communication patterns did indicate mediation (full mediation for the 2007 sample and partial mediation for the 2011 sample). These results support the literature that suggests that positive and negative communications should be treated as two separate dimensions, not as one (e.g. Burleson & Denton, 1997; Heene et al., 2005).

Research Question 5

Although the 2007 data do not include labor force participation variables, the 2011 data were collected to allow for the possibility that unemployment might influence financial wellness

and, as a result, the full model of relationship satisfaction. To investigate this possibility two models were specified using the 2011 sample; one structural equation model with positive communication patterns and one structural equation model with negative communication patterns. In both models separate manifest variables indicated whether one or both of the partners had experienced unemployment in the last four years. The results of these two models are presented separately for positive communication patterns and negative communication patterns. Consistent with the description of the results from Research Question 4, results for model fit are presented first, followed by the parameter values.

Positive communication patterns.

Model fit.

The model fit indices for the positive communication patterns model are presented in Table 22. As expected, the chi-square value for the current model indicates a poor fit (χ^2 =298.36 (df 115, p=0.0)). This was the only index demonstrating a poor fit, but the measure itself may be considered unreliable as chi-square values are almost always statistically significant in structural equation models estimated from samples over 400 (Kenny, 2011) and depending on the degree of multivariate normality of the data (Jöreskog & Sörbom, 2007).

For this model, the RMSEA = 0.057, indicated a good fit (Hu & Bentler, 1995) and a mediocre model fit (MacCallum et al., 1996). The 90% confidence interval for RMSEA (0.049, 0.065) also indicated mediocre fit (Kenny et al., 2011). The p-value for test of close fit resulted in a p-value of 0.069 for this model. A p-value of 0.05 or greater indicates that the model's fit is close fitting (Kenny, 2011). Standardized residuals were also examined as an indicator of model fit. For this model, 10 out of 153 standardized residuals (6.54%) were greater than the suggested

cut-off of |2.0|. The standardized residuals indicate the model having good fit (Gerbing & Anderson, 1993).

Table 22.
Fit indices for Research Question 5 analysis for positive communication patterns model

Index	Value	Indication of Fit	Suggested Cut-Off Values
χ^2	298.36 (df 115, p=0.0)	Poor fit.	Nonsignificant. (Models with more cases (400 +), the chi square is almost always statistically significant.)
RMSEA	0.057	Good/Mediocre fit.	0.06 or less (Hu & Bentler, 1998) 0.01 or less (excellent fit), 0.05 or less (good fit), and 0.08 (mediocre fit) (MacCallum, Browne, & Sugawara, 1996)
90% Confidence Interval for RMSEA	(0.049, 0.065)	Mediocre fit.	Lower level is very near zero (no worse than 0.05) and upper value less than .08 (Kenny, Kaniskan, & McCoach, 2011)
P-Value for Test of Close Fit	0.069	Good fit.	p > 0.05: the fit of the model is close (good fit). p < 0.05: model's fit is worse than close fitting (poor fit) (Kenny, 2011).

Parameter values.

The standardized parameter estimates of both measurement and structural components of the hypothesized model including positive communication patterns are presented in Tables 23 and 24. Figure 13, at the end of this chapter, contains a diagram of the full model including the standardized parameter estimates.

Table 23.
FIML parameter estimates for factor loadings in the SEM model for Research Question 5 analysis, positive communication patterns

Parameter	Standardized	SE	R^2	T-value
Financial wellness → Level of financial stress	0.72***	--	0.52	--
Financial wellness → Financial situation	0.65***	0.13	0.42	13.81
Financial wellness → Financial condition	0.72***	0.13	0.52	15.34
Financial wellness → Can't afford to go out	0.67***	0.13	0.46	14.24
Financial wellness → Paycheck to paycheck	0.80***	0.16	0.64	16.90
Financial wellness → Living expenses	0.83***	0.15	0.70	17.72
Financial wellness → Financial emergency	0.69***	0.14	0.48	14.69
Financial wellness → Finances in general	0.84***	0.13	0.70	17.73
Communication patterns → Mutual discussion	0.60	--	0.36	--
Communication patterns → Mutual expression	0.63***	0.19	0.40	7.77
Communication patterns → Mutual negotiation	0.61***	0.20	0.38	7.77
Relationship satisfaction → Discuss divorce	0.60	--	0.36	--
Relationship satisfaction → Quarrel	0.54***	0.07	0.29	7.93
Relationship satisfaction → Regret marriage	0.59***	0.06	0.35	8.31
Relationship satisfaction → Get on each other's nerves	0.62***	0.10	0.38	8.49

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

All of the factor loadings of the measurement model were statistically significant, as seen in Table 23. The eight items making up the financial wellness construct all had significant loadings (standardized factor loadings ranged from 0.65 to 0.84). The R^2 for the eight items were all moderate to high ranging from 0.42 to 0.70, indicating that they measured the same latent factor. The three items of the positive communication patterns subscale had significant loadings

on the construct (standardized factor loadings were: 0.60, 0.61, and 0.63). The R^2 for each of the three items were also moderate, ranging from 0.36 to 0.40. The third construct, relationship satisfaction, had four items with statistically significant loadings (standardized factor loadings ranged from 0.54 to 0.62). The R^2 for each of the items was low to moderate, ranging from 0.29 to 0.38.

All of the hypothesized direct effects making up the structural component of the model were statistically significant at the 99% confidence level. The standardized direct effect of financial wellness on positive communication patterns was 0.23. Secondly, the standardized direct effect of financial wellness on relationship satisfaction was also 0.23. Finally, the standardized direct effect of positive communication patterns on relationship satisfaction was 0.28. The manifest variables added to the model to capture any experiences of unemployment were also included in the model as structural components to the model. One spouse experiencing unemployment in the last four years (compared to not experiencing unemployment within the

Table 24.
FIML parameter estimates for direct effects for Research Question 5 analysis for the model with positive communication patterns

	Direct Effects		
Parameter	Standardized	SE	T-value
Couple employment status (one spouse)→ Financial wellness	-0.19***	0.11	-3.61
Couple employment status (both spouses) → Financial wellness	-0.16***	0.12	-3.08
Financial wellness → Communication patterns	0.23***	0.06	3.72
Financial wellness → Relationship satisfaction	0.23***	0.06	3.71
Communication patterns→ Relationship satisfaction	0.28***	0.08	3.72

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

relationship) predicts a 0.19 standard deviation decrease in financial wellness. Both spouses experiencing unemployment in the last four years (compared to not experiencing unemployment within the relationship) predicts a 0.16 standard deviation decrease in financial wellness.

Negative communication patterns.

Model fit.

The model fit indices for the negative communication patterns model are presented in Table 25. The chi-square value for the current model indicated a poor fit (χ^2 =414.71 (df 166, p=0.0)). This was the only index demonstrating a poor fit, most likely due to the unreliability of the measure with samples sizes over 400 (Kenny, 2011) and depending on the degree of multivariate normality of the data (Jöreskog & Sörbom, 2007). For this model, the RMSEA of 0.055, indicated a good fit (Hu & Bentler, 1995) and a mediocre model fit (MacCallum et al.,

Table 25.
Fit indices for Research Question 5 analysis for negative communication patterns model

Index	Value	Indication of Fit	Suggested Cut-Off Values
χ^2	414.71 (df 166, p=0.0)	Poor fit.	Nonsignificant. (Models with more cases (400 +), the chi square is almost always statistically significant.)
RMSEA	0.055	Good fit/ Mediocre fit.	0.06 or less (Hu & Bentler, 1998) 0.01 or less (excellent fit), 0.05 or less (good fit), and 0.08 (mediocre fit) (MacCallum, Browne, & Sugawara, 1996)
90% Confidence Interval for RMSEA	(0.049, 0.062)	Mediocre fit.	Lower level is very near zero (no worse than 0.05) and upper value less than .08 (Kenny, Kaniskan, & McCoach, 2011)
P-Value for Test of Close Fit	0.091	Good fit.	p > 0.05: the fit of the model is close (good fit). p < 0.05: model's fit is worse than close fitting (poor fit) (Kenny, 2011).

1996). The 90% confidence interval for RMSEA (0.049, 0.062) also indicated mediocre fit (Kenny et al., 2011). The p-value for test of close fit resulted in a p-value of 0.091 for this model. A p-value of 0.05 or greater indicates that the model's fit is close fitting (Kenny, 2011). Standardized residuals were also examined as an indicator of model fit. For this model, 37 out of 210 standardized residuals (17.62%) were greater than the suggested cut-off of |2.0|. The standardized residuals indicate a poor fit of the model; more than 10% of the standardized residuals exceeded the suggested threshold of |2.0| (Gerbing & Anderson, 1993).

Parameter values.

The standardized parameter estimates of both measurement and structural components of the hypothesized model that incorporated negative communication patterns are presented in Tables 26 and 27. Figure 14, at the end of this chapter, contains a diagram of the full model including the standardized parameter estimates.

All of the factor loadings of the measurement component of the model were statistically significant, as seen in Table 26. The financial wellness construct had statistically significant loadings for all eight items (standardized factor loadings ranged from 0.65 to 0.84). The R^2 values for the eight items were all moderate to high (ranging from 0.42 to 0.70), indicating that they measured the same latent factor. The six items of the negative communication patterns construct had significant loadings on the construct (standardized factor loadings ranging from 0.27 to 0.86). The R^2 for each of the three items ranged from 0.07 to 0.74. The third construct, relationship satisfaction, had four items with statistically significant loadings (standardized factor loadings ranged from 0.56 to 0.64). The R^2 values for each of the items were low to moderate, ranging from 0.31 to 0.40.

Table 26.
FIML parameter estimates for factor loadings in the SEM model for Research Question 5 analysis, negative communication patterns

Parameter	Standardized	SE	R^2	T-value
Financial wellness → Level of financial stress	0.72***	--	0.51	--
Financial wellness → Financial situation	0.65***	0.13	0.42	13.78
Financial wellness → Financial condition	0.72***	0.13	0.52	15.27
Financial wellness → Can't afford to go out	0.68***	0.13	0.46	14.24
Financial wellness → Paycheck to paycheck	0.80***	0.16	0.64	16.89
Financial wellness → Living expenses	0.84***	0.15	0.70	17.71
Financial wellness → Financial emergency	0.69***	0.14	0.48	14.65
Financial wellness → Finances in general	0.84***	0.13	0.70	17.67
Demand-withdraw → Mutual avoidance	0.27	--	0.07	--
Demand-withdraw → R discusses/S avoids	0.33***	0.30	0.11	4.35
Demand-withdraw → S discusses/R avoids	0.35***	0.32	0.12	4.44
Criticize-defend → Mutual blame	0.59***	0.42	0.34	5.15
Criticize-defend → R criticizes/S defends	0.86***	0.57	0.74	5.40
Criticize-defend → S criticizes/R defends	0.79***	0.51	0.63	5.38
Relationship satisfaction → Discuss divorce	0.58	--	0.34	--
Relationship satisfaction → Quarrel	0.56***	0.07	0.31	8.18
Relationship satisfaction → Regret marriage	0.57***	0.06	0.33	8.29
Relationship satisfaction → Get on each other's nerves	0.64***	0.10	0.40	8.72

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

All of the hypothesized direct effects in the structural model were statistically significant at the 99% confidence level. The standardized direct effect of financial wellness on negative communication patterns was 0.22. The standardized direct effect of financial wellness on relationship satisfaction was 0.20. Finally, the standardized direct effect of negative communication patterns on relationship satisfaction was 0.43.

Table 27.
FIML parameter estimates for direct effects for Research Question 5 analysis for the model with negative communication patterns

	Direct Effects		
Parameter	Standardized	SE	T-value
Couple employment status (one spouse)→ Financial wellness	-0.19***	0.11	-3.61
Couple employment status (both spouses) → Financial wellness	-0.16***	0.12	-3.08
Financial wellness → Communication patterns	0.22***	0.05	3.34
Financial wellness → Relationship satisfaction	0.20***	0.06	3.52
Communication patterns→ Relationship satisfaction	0.43***	0.14	4.24

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

The core of this model estimated an indirect effect of financial wellness on relationship satisfaction through negative communication patterns (meaning: financial wellness → negative communication patterns → relationship satisfaction). The standardized estimate of this indirect effect of financial wellness on relationship satisfaction is (0.22)*(0.43) = 0.095. The total effect of financial wellness on relationship satisfaction was calculated using both the direct and indirect effects. It was the sum of its direct effect, 0.20, and indirect effect through negative communication patterns, 0.095, for a total effect of 0.295. That is, for every standard deviation increase financial wellness a 0.295 standard deviation increase is expected in relationship satisfaction via all presumed causal pathways between these latent constructs.

The employment variables that were added to capture the labor force attachment of the married individual and his/her spouse were included in the model as structural components to the model. This inclusion indicates that when one spouse experienced unemployment in the preceding four years there was a 0.19 standard deviation decrease in financial wellness relative to those who did not experiencing unemployment. When both spouses experienced unemployment in the preceding four years there was a 0.16 standard deviation decrease in financial wellness relative to those in marriages where there was no unemployment. Two main differences between the models that did include labor force attachment and those that did not include labor force attachment are noteworthy. First, the overall model fit suffers with the inclusion of the labor force variables, especially when assessing standardized residuals. Second, the mediating effect from negative communication patterns disappears. A full discussion of the implications of the results of all the research questions and results from the models are presented in Chapter 5.

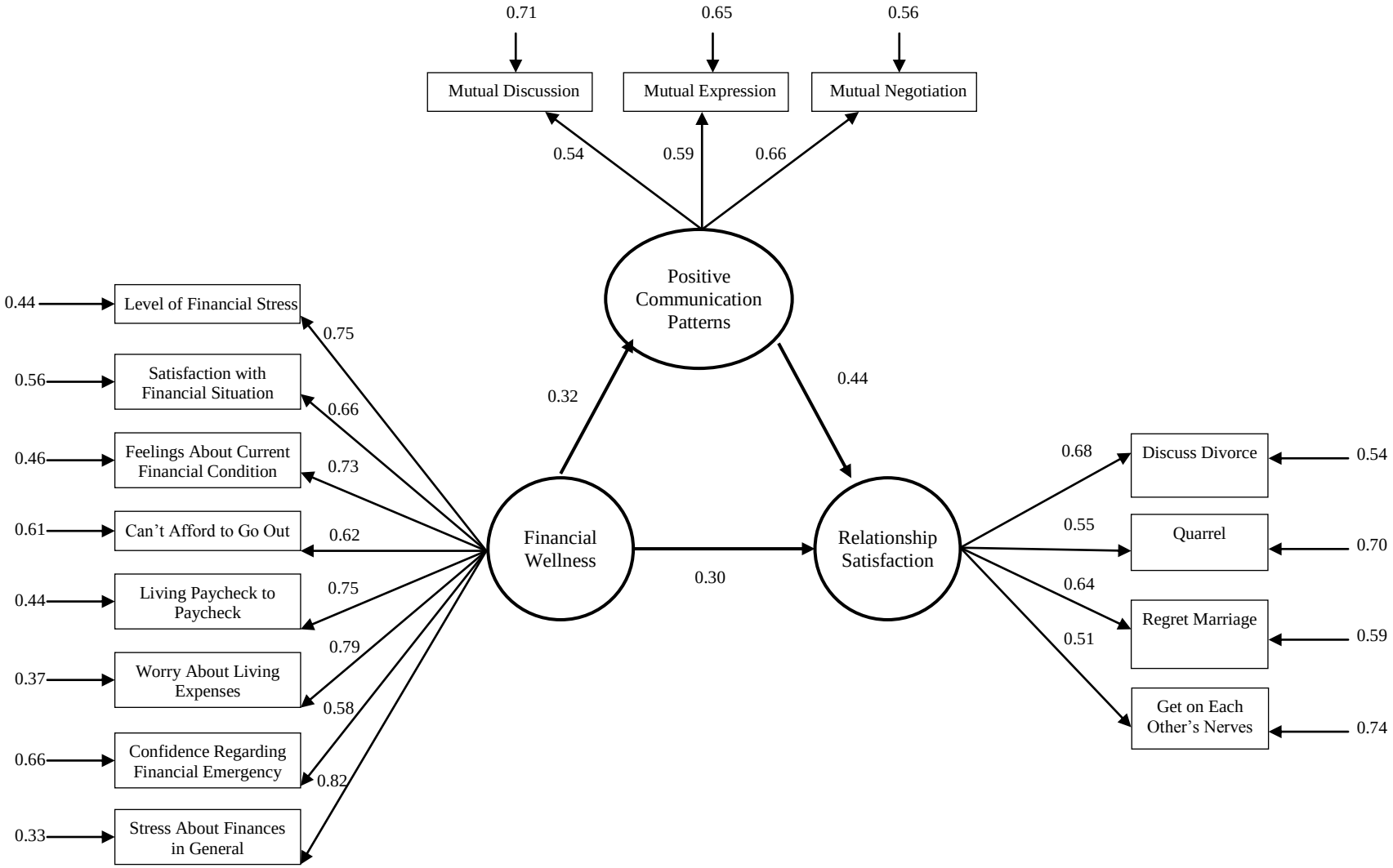

Figure 9. Estimates (standardized) for 2007 model for Research Question 4, positive communication patterns (N=515).
*** All paths are statistically significant at confidence level of 99%; critical t-value of 2.58 used.

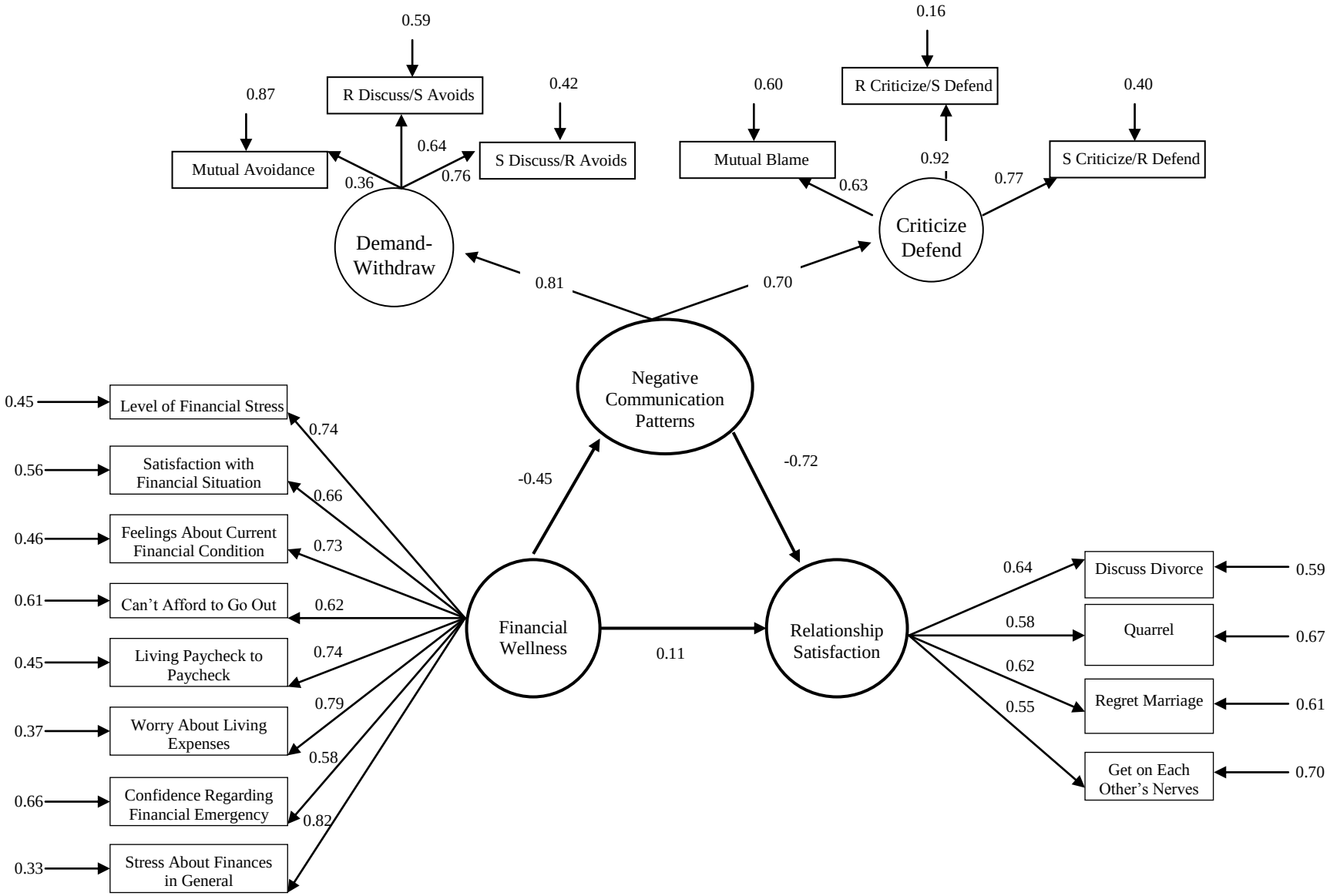

Figure 10. Estimates (Standardized) for 2007 model for Research Question 4, negative communication patterns (N=515).
*** All paths but one are statistically significant at confidence level of 99%; critical t-value of 2.58 used. The path between financial wellness and relationship satisfaction (0.11) is not statistically significant.

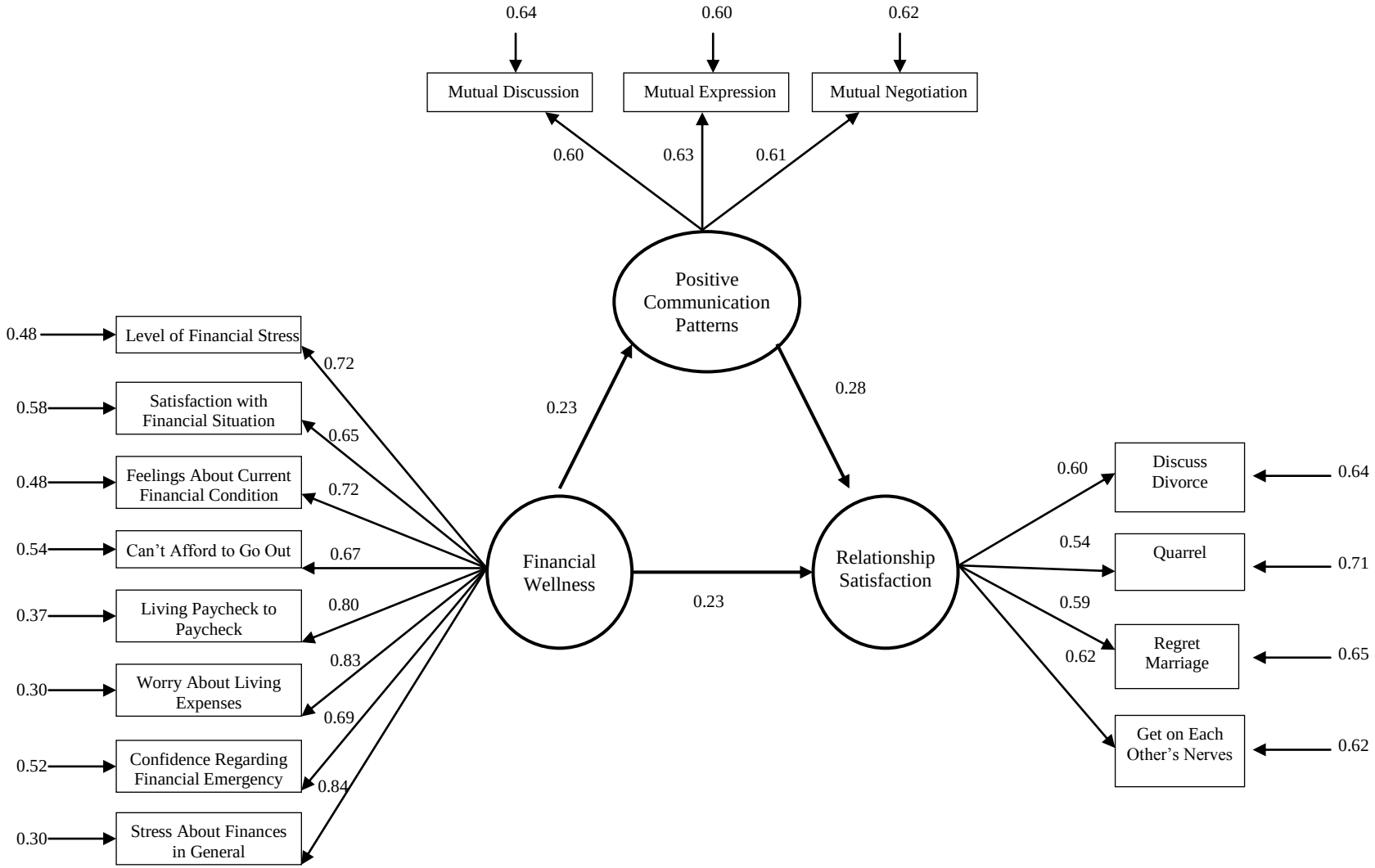

Figure 11. Estimates (Standardized) for 2011 model for Research Question 4, positive communication patterns (N=489).
*** All paths are statistically significant at confidence level of 99%; critical t-value of 2.58 used.

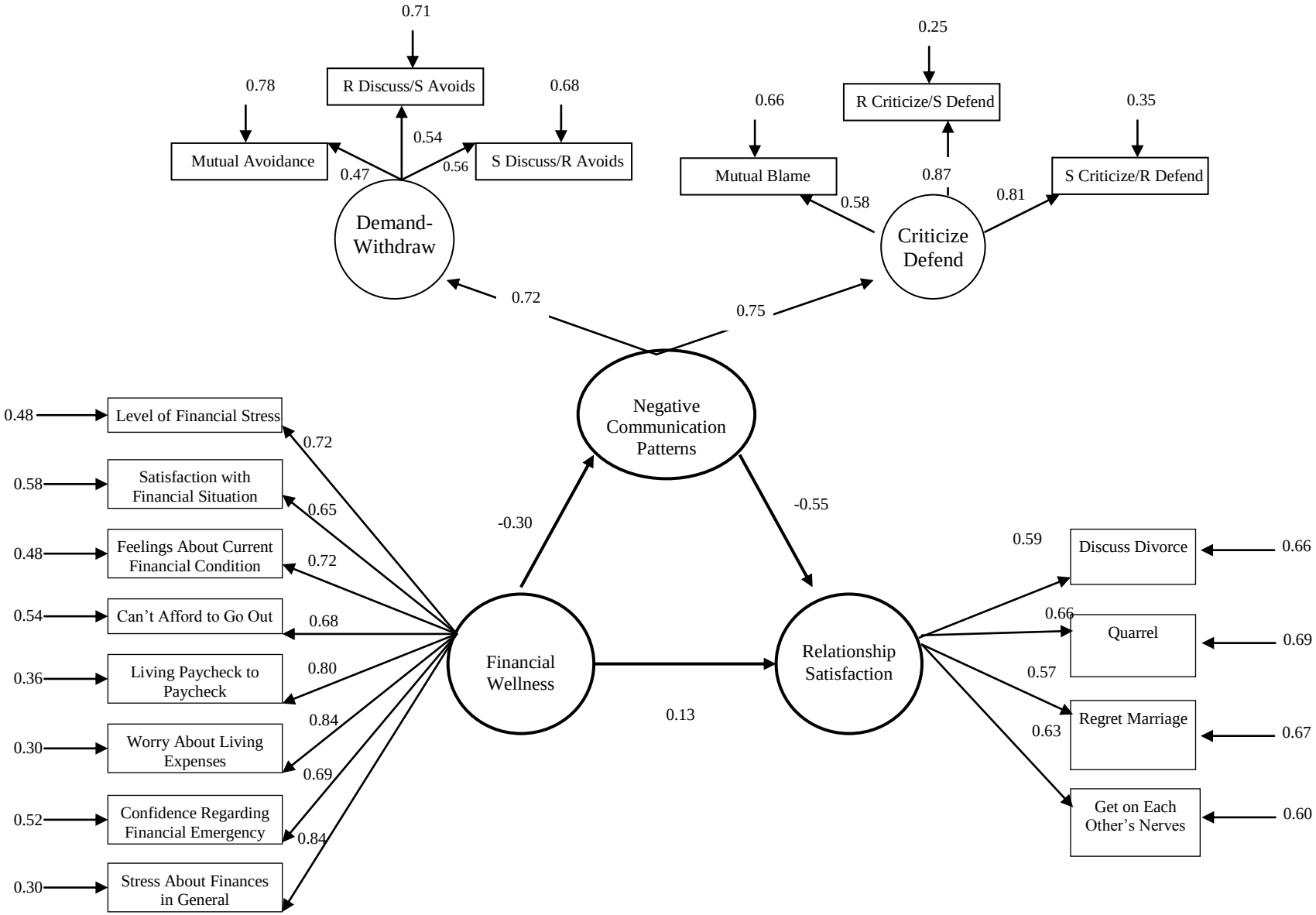

Figure 12. Estimates (Standardized) for 2011 model for Research Question 4, negative communication patterns (N=489).
*** All paths but one are statistically significant at confidence level of 99%; critical t-value of 2.58 used. The path between financial wellness and relationship satisfaction (0.13) was statistically significant at confident level of 95%; critical t-value of 1.96 used.

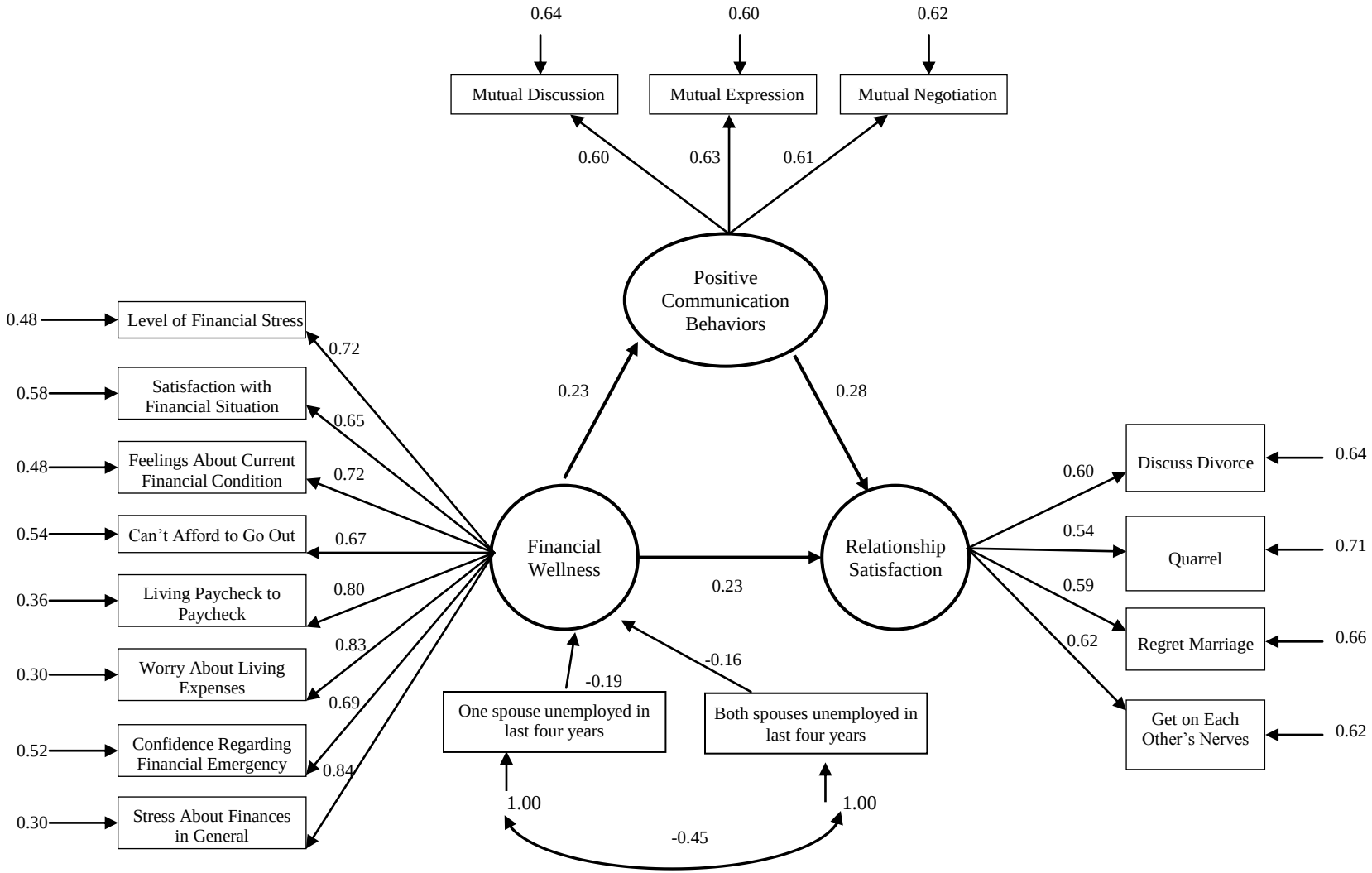

Figure 13. Estimates (Standardized) for 2011 model for Research Question 5, positive communication patterns (N=489).
*** All paths are statistically significant at confidence level of 99%; critical t-value of 2.58 used.

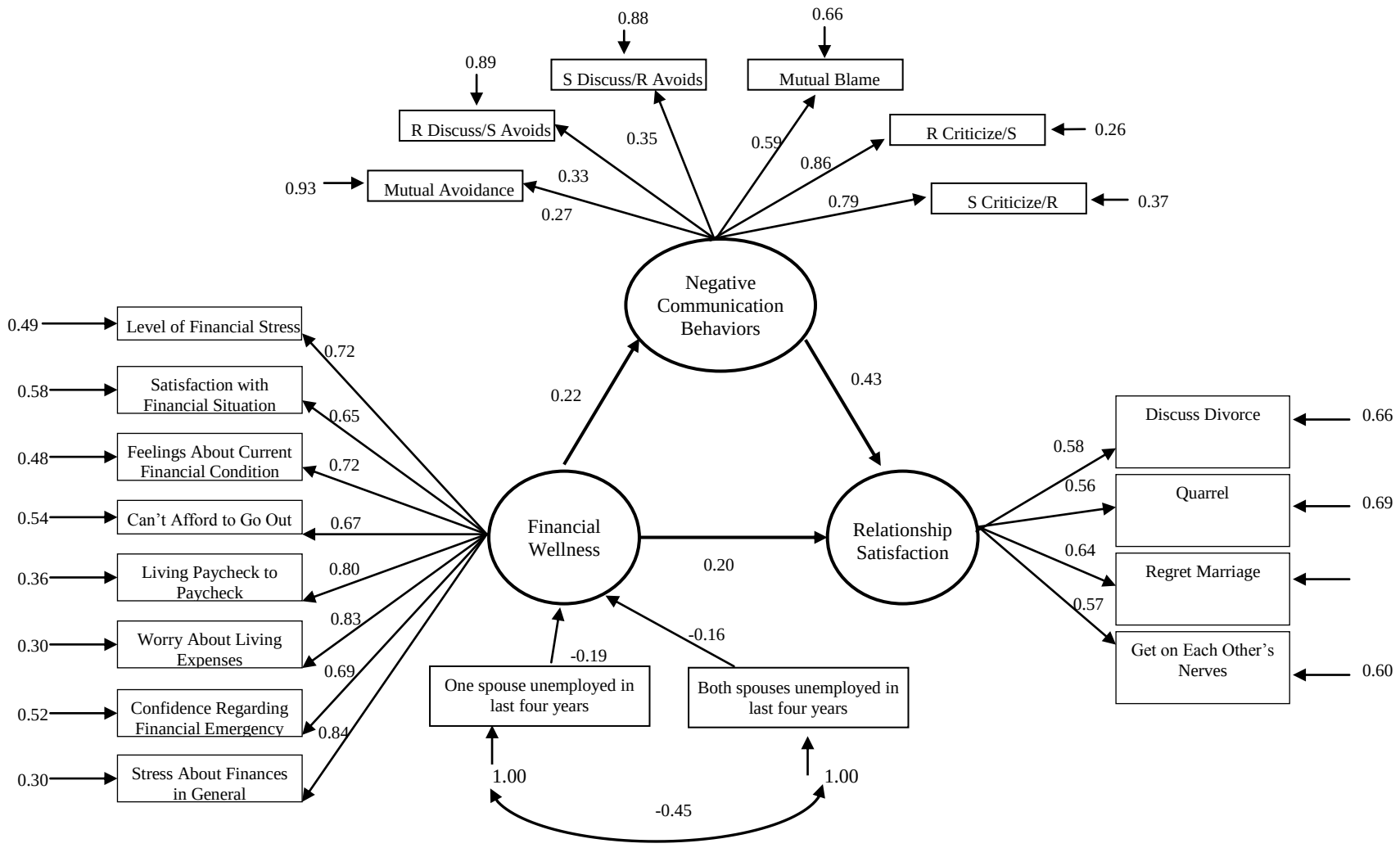

Figure 14. Estimates (standardized) for 2011 model for Research Question 5, negative communication patterns (N=489).
*** All paths are statistically significant at confidence level of 99%; critical t-value of 2.58 used.

CHAPTER 5

DISCUSSION

The purpose of this research was to contribute to the research community's understanding of the relationship between financial wellness and relationship satisfaction, and to identify areas for possible improvements for practitioners who counsel or interact with married couples. Further, this research sought to shed light on the role married couples' communication patterns play in that relationship between financial wellness and married person's satisfaction with their relationship. To accomplish this, data from the Healthy Families, Healthy Finances study (Nielsen & Futris, 2007) were used to investigate the following research questions:

1. What was the level of financial wellness of married individuals in 2007 and 2011?
2. What were the demographic, family status, and financial behavior correlates of financial wellness for married individuals in 2007 and in 2011?
3. Were there differences in the demographic, family status, and financial behavior correlates of financial wellness for married individuals between 2007 and 2011?
4. Theory and literature suggest that communication about finances can affect relationship satisfaction. For these samples, did communication patterns mediate the relationship between financial wellness and relationship satisfaction?
5. Does unemployment affect the model of relationship satisfaction?

The remainder of this chapter provides a discussion of the results of this research, highlighting how these results inform each of the specific research questions. This is followed by

a discussion of the strengths and limitations of this study. Finally, suggestions for practice and future research are provided.

Financial Wellness Before and After the Great Recession

The first part of this research focused on the concept of financial wellness. Defined as "a comprehensive, multidimensional concept incorporating financial satisfaction, objective status of financial situation, financial attitudes, and behavior" (Joo, 2008, p. 21), financial wellness is a part of almost every aspect of the daily lives of individuals and couples. Joo's framework, which places financial wellness under an umbrella of overall well-being (see Figure 1), contains four sub-components: objective status of financial wellness, financial satisfaction, financial behavior, and subjective perception. This framework informed the identification and operationalization of financial wellness as a concept for this research. Research Questions 1-3 examined this concept, specifically focusing on married individuals' overall levels of financial wellness in 2007 and 2011, the particular correlates of financial wellness in 2007 and in 2011, and whether there were differences in financial wellness (overall and among the specific correlates) in 2007 versus 2011.

For the first research question, the levels of financial wellness as well as the eight Personal Financial Wellness Scale™ items were compared between 2007 and 2011 to see if there were significant differences between the two samples time periods. It was expected that there would be a decrease in the composite score of Personal Financial Wellness™ as well as the individual scale items because the sample from 2011 had experienced the Great Recession and its concomitant high unemployment rates. The results of the bivariate tests support the hypothesis that married individuals experienced lower financial wellness (were more distressed) in 2011 compared to 2007, as the composite Personal Financial Wellness™ score and all of the

scale items were lower and the differences between the 2011 and 2007 samples were statistically significant, indicating that the 2011 sample was more distressed than the 2007 sample.

The decrease in financial wellness between 2007 and 2011 supports Joo's (1998) findings that recent stressful financial events experienced by an individual also reduce financial wellness, as the 2011 sample had just experienced the Great Recession and was still experiencing the lasting effects of the recession. As a point of comparison, individuals in the 2007 sample had not experienced a comparable recession. Although the specific circumstances of the recession are not identified in these models, the results do suggest that the overall economic circumstance may have contributed to lower overall financial wellness. Unfortunately, the HFHF data do not include variables that allow for a full investigation of the particular effects of the recession. Still, the results are suggestive in that personal financial wellness scores were demonstrably lower in 2011. It is likely that not all of the respondents experienced large negative financial events in their personal situation (for example job loss), but given the scale of the recession it is likely that most members of the sample had experienced smaller events that together can, as demonstrated by other researchers, lead to more overarching negative and cumulative effects (Dakin & Wampler, 2008; James, 2009).

The second research question investigated the individual correlates associated with financial wellness. To again indirectly assess the scope of the recession, the correlates for the two samples (2007 and 2011) were compared across three categories of variables: demographic variables, family status variables, and a financial behaviors variable. Unfortunately, very little insight about the correlates of financial wellness was gained from these models due to the overwhelming effect of income in the models. Both samples exhibited consistently significant correlates for one demographic characteristic (all of the categories of the income variable) and

consistently insignificant predictors for family status and financial behavior variables. In other words, when predicting financial wellness in the two time periods the one common significant predictor is income; all other variables in the models varied in their predictive power or were not predictive between the two periods. Given these models and sample, income is the strongest and most consistent correlate of financial wellness. This is not surprising given it is the only objective component of financial wellness included in the models. These results reinforce the idea that the Great Recession did not discriminate; almost everyone was affected either directly or indirectly by the economic crisis.

The individual results from the 2007 sample do, however, support previous research (Joo, 1998; O'Neill et al., 1993) in regards to age, education, and income. For example, the 2007 sample provides evidence fully supporting one hypothesis; that financial wellness will be positively related with age. This is consistent with previous work that investigated financial wellness (e.g. Anthes & Most, 2000; Gordon & Whelan-Berry, 2004; Miles, 2004). Based on past work, the association between age and financial wellness could be due to increases in financial knowledge, which tends to increase with age, and greater financial independence, which also tends to increase with age. The results from the 2007 sample also support the hypothesis that being male is associated with higher financial wellness. This is consistent with past research on gender and financial wellness (Malone et al., 2010). As Anthes & Most (2000) have found, this difference in financial wellness may stem from the difference in financial wellness from gender can be partially be attributed to differences in risk tolerance, with women being more risk averse than men on a wide range of economic decisions impacting both the subjective and objective components of financial wellness (Anthes & Most, 2000).

The hypothesis for income, financial wellness was positively related to income, is also fully supported with the 2007 sample. As expected, higher income is associated with increases in financial wellness, which supports the previous literature on financial wellness (e.g. Foster, 1993; Joo, 1998; Porter & Garman, 1993). The measure of income supports the objective measure of financial wellness, one of the four components identified by Joo (2008).

The education hypothesis, expecting education to be positively related to financial wellness, is partially supported by the results from the 2007 sample. Only two categories of the education variable (categories of: high school education or less and high school degree or GED with bachelor degree as the reference category for comparison) support the education hypothesis that was expected based on past literature (Joo & Grable, 2004; Pandey & Kim, 2008). Education is positively related with a variety of financial behaviors, risk tolerance, and financial satisfaction, which all contribute to financial wellness (Joo & Grable, 2004). The support of this hypothesis indicates increases in education are associated with increases in financial wellness.

In comparison to the 2007 sample, the results of the 2011 sample regression models highlight only the role that income plays in predicting financial wellness. That income is a key component of financial wellness is, of course, consistent with existing research. What is puzzling, however, are the differences between the two samples on the role of education; just one category of education (some college /tech school (no degree) relative to having a bachelor's degree) was identified as a correlate of financial wellness 2011. That higher levels of education are related to increases in financial wellness is, of course, supported in the literature (e.g. Joo & Grable, 2004; Pandey & Kim, 2008) and partially supports the hypothesis that education is positively related to financial wellness. Yet full support of the education hypothesis is not possible because of the lack of any effect from other education categories.

Research Question 2 examined the correlates of financial wellness within each sample individually. Research Question 3 more carefully examined and tested for differences in the demographic, family status, and financial behavior correlates of financial wellness for married individuals between the 2007 and 2011 samples. To fully examine Research Question 3, a two-period, pooled regression model with time interactions was estimated. The results of this model statistically confirm what the visual inspection of the separate models clearly suggested: there are few differences in the correlates of financial wellness in 2007 versus 2011. Only three variables indicated differences in the correlates of financial wellness, and all three variables were subcategories of larger concepts (education and income). Two of the three variables were education categories and were only marginally significant, suggesting that there are minimal differences between 2007 and 2011. Further, these results suggest that the measure of financial wellness, Personal Financial Wellness™, consistently measured financial wellness in two time periods that were separated by the economic crisis of the Great Recession.

Financial Wellness and Relationship Satisfaction

Both theory and literature indicate that communication plays a central role in relationship satisfaction. The focus of the research questions examining the relationship of financial wellness and relationship satisfaction are centered around communication patterns within a relationship ("Do communication patterns mediate financial wellness and relationship satisfaction?" and "How does unemployment affect the model of relationship satisfaction?"). This approach was undertaken because problems with communication are frequently cited as causing relationship difficulty (Burleson & Denton, 1997), and it has been demonstrated that communication greatly influences marital satisfaction (e.g. Gottman & Notarius, 2000; Litzinger & Gordon, 2005).

Social exchange theory's operating assumption is that people obtain what they need and want by participating in exchanges with others in a way that maximizes potential benefits while attempting to minimize costs from the exchange (Turner, 1991). As problems arise, people identify the choices they have to act and respond, identify alternatives for actions, then choose an alternative as their response to the problem. From the lens of social exchange theory, the different behavioral alternatives represented by positive and negative communication are applied as the selected alternatives. Moving towards an outcome measure, in this case relationship satisfaction, people assess (extrinsically and/or intrinsically) the costs and rewards of the exchange. As applied in this study, the cost/rewards analysis accounts for differences in how positive and negative communication relate to financial wellness and relationship satisfaction. The cost/rewards calculation and the outcome of relationship satisfaction change based on the different processes that positive versus negative communication demonstrate in the model.

The hypotheses tested examined how the concepts of financial wellness, relationship satisfaction, and communication are all related. Overall, the results from the numerous structural equation models provide support for the hypothesis that financial wellness is positively related to positive communication and negatively related to negative communication. Therefore, increases in financial wellness are associated with increases in positive communication and decreases in negative communication. The same is true for the hypotheses regarding positive and negative communication patterns to relationship satisfaction; positive communication is linked to increases in relationship satisfaction while negative communication is linked to decreases in relationship satisfaction. These results for relationship satisfaction and both negative and positive communication patterns are consistent with the existing literature earlier reviewed, demonstrating that relationship satisfaction is effected differently by negative and positive

communication (e.g. Gottman, 1994; Gottman & Krokoff, 1989; Johnson, 1996; Stanley et al., 2002).

As the earlier review of literature demonstrated, past research suggests that financial stressors and communication patterns play important roles in financial and relationship satisfaction (e.g. Pittman & Lloyd, 1988; Conger et al., 1990; Johnson & Booth, 1990; Bradbury et al., 2000). Gudmundson et al. (2007) suggested that it was both positive and negative marital interactions that influenced marital instability. Family studies research has established that how couples communicate in marriages may negatively impact a relationship (e.g. Gottman & Notarius, 2000; Stanley et al., 2002). The results of the models in this research provide additional support for the link between financial wellness, communication patterns, and relationship satisfaction.

Notably, the results from the structural equation models provide a strong base of support for the hypothesis that the direct path between financial wellness and relationship satisfaction will indicate a positive relationship, and that this relationship is mediated by communication patterns. Across numerous specifications and alternative iterations of the models, the results are robust and consistent in supporting that the direct path between financial wellness and relationship satisfaction is positive. Further, the results from the constructs of financial wellness and relationship satisfaction support the base of literature that exists. For example, Cutrona and colleagues (2003) found that financial strain is a consistent predictor of reports of marital quality. Using a family stress model, they identified that family financial strain affects marital quality in two ways, directly and indirectly through marital interaction. Using social exchange theory, the results of the present research indicate that financial wellness is positively related to relationship satisfaction. Additionally, Archuleta and colleagues (2011) investigated the relationship between

financial satisfaction and financial stressors on marital satisfaction and identified financial satisfaction as a predictor of marital satisfaction. Their results suggest that financially satisfied married persons are more satisfied in their marriages and, therefore, more likely to have stable relationships (Archuleta et al., 2011).

Further, the current research provides supporting evidence to the finances and relationship literature by identifying two important aspects about finances in marriage. First, the results from these models support Dew's (2009) findings that finances play a central role in the lives of married couples and problems related to money affect marital happiness (Dew, 2009). Second, in addition to large financial problems, less severe financial problems also affect marital happiness (Olson et al., 2008).

Together, the results of the structural equation models also shed light on the potential mediating effects of both positive and negative communication patterns. That is, does the way couples communicate change alter the demonstrated relationship between financial wellness and relationship satisfaction? Notably, a mediating role of communication is supported when examining the model with negative communication patterns, but mediation is not supported with positive communication patterns. That is, negative communication patterns affect the association between financial wellness and relationship satisfaction in a manner that is different from positive communication patterns. In other words, how couples communicate matters. This finding is the result of estimating separate models for positive and negative communication patterns, which was critical for providing more insight into the question investigating if communication patterns mediate the relationship of financial wellness and relationship satisfaction. Literature suggests that positive and negative communications should be treated as two separate dimensions, not as one (e.g. Burleson & Denton, 1997; Heene, et al., 2005). Indeed,

the results of the current research support the practice of separating positive and negative communication patterns when estimating the role of communication.

The results of the current research indicate that, for married individuals, decreased financial wellness is associated with decreases in relationship satisfaction. For those interested in how couples are managing their finances and their marriages, this suggests that communication can mediate the relationship between financial wellness and relationship satisfaction, providing evidence that efforts to improve the communication skills of those who are financially distressed can improve their relationship satisfaction, even if a particular type of behavior is modified. Specifically, the results of the models containing positive communication patterns did not indicate a mediating relationship whereas the models containing negative communication patterns did indicate mediation (full mediation for the 2007 sample and partial mediation for the 2011 sample). This difference in communication patterns would have been overlooked if the constructs had not been analyzed separately.

The different effects of communication patterns (positive not mediating, negative mediating) provide additional support to literature describing that positive and negative communication patterns need to be considered separate dimensions, as opposed to ends of a spectrum. The two dimensions allow for research to further explicate the effects of positive and negative communication, as couples may have different levels of both types of communication (e.g. Burleson & Denton, 1997; Gottman, 1994). The differing effects of mediation of positive and negative communication in this model also provide support for Gottman's (1994) thesis that research and practice need to address that it may not be *what* couples fight about that is important, but *how* couples argue that is important within a relationship. This differentiation is specifically important for relationship outcomes (such as relationship satisfaction).

Importantly, the differing effects of positive and negative communication patterns (not mediating versus mediating) support the framework of social exchange theory. The differences in positive and negative communication are being accounted for through the intrinsic cost/rewards analysis of social exchange theory, which leads to the outcome of relationship satisfaction. Subsequent research should consider the utility of the social exchange framework when investigating relationship outcomes.

The final research question (Research Question 5) attempted to extend the work from Research Question 4 by including couple employment status over the last four years into the model of financial wellness and relationship satisfaction. Unemployment commonly leads to financial insecurity through a change in, and loss of, income (Sullivan et al., 2000), often leading to changes in marital and family functioning. The measure of employment status was included with a direct line to financial wellness only, based on past literature and supported with the correlation analysis of the variables included in the analysis.

The measure of couple employment status did not change the positive communication model, but it did remove the partial mediating effect that negative communication patterns were exhibiting in the model that did not include employment status. These results could be the true results for the model, but it is likely that this result is an artifact the small number of sample members who were impacted by changes in employment status. Also, the unemployment indicator was a rather crude three-part indicator of the couple's labor force attachment experiences over the preceding four years. As a result, the effect of unemployment in the model remains unclear without further analysis estimating a different model, employing model modifications, using different data to examine this research question, or a better measure of employment status changes.

Limitations and Strengths of the Research

The current research contains several limitations that should be kept in mind while making conclusions about the utility of this study. Many of the limitations are present because of the samples used in the current research. While the samples attempted to be representative of the State of Georgia, participants were still relatively homogenous. For the pooled sample, the majority of the respondents were white (77.3%), female (60.6%), had annual incomes over $80,000 (45.8%), were well-educated with bachelor degrees or higher education (45.1%), and were in a marriage that was the first marriage for both spouses (63.2%). The low response rates for each of the samples (9% in 2007 and 16.2% in 2011) call into question the representativeness of the samples and the potential for an unmeasured bias present among those who chose to participate. These limitations need to be kept in mind when interpreting the results, as they suggest that the results of this study should be generalized only to the study participants.

While two samples were used in this study, they were collected via two independent, cross-sectional samples. Cross-sectional samples limit the ability to determine causality, particularly with respect to the effects of the Great Recession. For this reason, no attempt was made to account for the effects of the economic downturn. Longitudinal data following one sample over the two time periods could allow for better identification of causality between variables, and would offer an opportunity to estimate the contextual influences of the recession in a formal way. Further, this study only includes married individuals who were living together, limiting interpretations about the various findings only to those who are in married partnerships. And, interviews were conducted with only one spouse; the responses on key variables like the items of the PFW Scale™, CPQ-SF Scale, and the RDAS Scale may be different for husbands and wives.

The 2011 model was a slightly smaller sample than the 2007 sample (final sample sizes 2007: N=515; 2011: N=489). While not a large nominal difference in sample size, it did play an impact on the examination of models for Research Question 5. The model for this question had to be altered from the model used in Research Question 4 because the model including the negative communication patterns could not be estimated with a sample of N=489. So instead of having the negative communication subscales (demand-withdraw and criticize-defend) modeled separately, only one negative communication behavior construct could be included (with 6 items loading directly onto the latent construct). This change in the construct causes comparison challenges and is likely to be part of the cause of the loss of the identification of a mediating effect of negative communication. Additionally, Research Question 5 could only be investigated using the 2011 sample; employment information was not collected in the 2007 HFHF survey.

Despite the limitations faced within the current research, there are several strengths that enhance the overall validity of the current research. First, the current research adds to the literature of financial wellness and validity of the Personal Financial Wellness Scale™ by providing an update to the profile of financial wellness while examining the measure and its correlates. Second, the current research utilizes the two time periods of the data to further explicate the circumstances related to financial wellness before and after a major recession. Third, structural equation model analysis was used to examine the possible mediating effects of positive and negative communication patterns, allowing for the identification of direct and indirect effects of the financial wellness and its effect on relationship satisfaction. Finally, a theoretical foundation in social exchange theory was used to ground the research, including providing a framework while choosing variables, developing models, and interpreting results. This framework proved useful and could inform future research.

Contributions and Implications to the Literature

This study contributes to the literature in several ways. Foremost, it represents the first research specifically examining the differences between positive and negative communication patterns in the relationship between financial wellness and relationship satisfaction. Since finances are commonly identified as a reason for marital dissolution, it is important for both researchers and practitioners have a better understanding of communication patterns and financial wellness. The current research provides insight into the effect of changing economic conditions on financial wellness and provides evidence of resiliency of strong marriages while experiencing economic challenges as many experienced during the Great Recession. This work contributes to the growing body of literature in the field of financial therapy, as both researchers and practitioners seek to further understand the interrelatedness of finances and relationships.

Suggestions for practice.

Although the findings of this study should not be generalized beyond the respondents in the two samples of this study, it raises important points for practitioners who work with couples. First, the results are applied to marriage and relationship education programs. Second, the results are applied to counselors and therapists working with couples.

The results provide support for including communication in relationships in marriage and relationship education programs. These programs may work to prevent decreases in relationship satisfaction or even relationship dissolution, providing a process for improving good relationships through communication. Based on the results of this research, programs could include communication tips for couples to utilize when dealing with changes in their financial

wellness. In particular, efforts that address ways to improve positive communication behaviors and reduce negative communication behaviors should increase their relationship satisfaction.

For example, educational programs that teach couples to engage in mutual communication processes instead of demanding or one-sided communication processes will help couples to be better able to deal with changes in their financial wellness. This is consistent with Gottman's conclusion that successful marriages have far more positive than negative interactions. Communication allows a couple to stay in touch with one another and strengthen their relationships when used with wisdom and kindness. If changes in financial wellness are dealt with by using negative communication, like criticizing, demanding, blaming, and avoiding, the end result may be the relationship suffering.

Criticism and defensiveness are two examples of negative communication that will lead to lower relationship satisfaction when dealing with changes in financial wellness. The act of criticism in a relationship leads to attacking a spouses' character or personality, many times with blame. Criticism may lead to a spouse responding in a defensive manner. Defensiveness will inhibit the ability to deal with the issue or problem and may actually increase the problem. Relationship satisfaction will be most helped if both spouses can express their feelings to one another in non-defensive ways that encourage continued and further communication. Using statements that promote cooperation within the relationship (for example, using 'I' and 'We' messages instead of 'You' messages) encourages mutual communication by reducing perceptions of blame. By engaging in mutual communication, where both spouses discuss a problem, suggest solutions together, and arrive at a compromise together, couples can better adapt to changes in financial wellness, maintaining, increasing, or minimizing decreases their relationship satisfaction more than if negative communication was used.

Another example of negative communication that will lead to lower relationship satisfaction when dealing with changes in financial wellness is avoidance. Avoidance (avoiding a problem or avoiding talking about a problem) from both or even just one spouse does not help relationship satisfaction even when dealing with potentially positive situations. In the case of dealing with increases in financial wellness avoiding talking about the change will result in smaller increases in relationship satisfaction than talking about the change through the positive skills. Instead of avoiding a discussion, a relationship will benefit from both spouses talking together in calm, even ways. Practitioners could teach couples to work together to talk about a problem, brainstorming possible solutions together, and making a decision together. This practice may help both spouses feel invested in the process which may lead to greater relationship satisfaction.

When dealing with changes in financial wellness, relationship satisfaction is best protected and even improved through the use of positive communication within the relationship. Education programs can help couples to develop and practice positive communication strategies so they are best equipped with changes in financial wellness when they occur. The results suggest that there are two best strategies for dealing with changes in financial wellness: creating environments where both spouses may express their feelings and where both spouses may suggest possible solutions in order to mutually negotiate compromises for solutions. Both strategies engage the couple in the discussion of the problem such that both are engaged and invested. This investment will lead to greater relationship satisfaction for both spouses.

For therapists and counselors, the findings that communication plays an important role in the relationship between couples' financial wellness and relationship satisfaction present several implications for practice. Specifically, the current research supports that positive and negative

communication patterns have distinct properties that differentially mediate the path from financial wellness to relationship satisfaction. As such, the communication patterns need to be dealt with separately, so efforts dealing with communication need to be specifically targeted. Knowing that negative communication has a mediating effect between financial wellness and relationship satisfaction will help practitioners target their recommendations for communication practices.

For couples that may choose therapy, if they are experiencing lower financial wellness, the counselor could assist in improving communication practices as communicating more positively through mutual discussion and negotiation has the potential to directly improve relationship satisfaction. Negative communication may be one reason why couples experience a lack of relationship satisfaction, as it absorbs all of the connection of financial wellness to relationship satisfaction. Changing negative communication may shift the couple away from focusing on how satisfied they are financially to focusing on other aspects of their relationship for fulfillment. For relationship professionals, the focus on how to help couples interact better when dealing with financial strain will help with the outcome of relationship satisfaction. Even with financial training, it is still important for relationship professionals to refer the couples to a financial professional to assist directly with the issues of financial strain to better help the couples (Falconier & Epstein, 2011).

The results of the current research may be used for those engaged in the developing field of financial therapy. Collaboration between relationship therapists and financial professionals is imperative to clients to better deal with financial strains and relationship satisfaction. A model using both disciplines (relational and financial professionals) requires both professionals to work together, specifically in regards to planning the treatment for the couple being helped (Falconier

& Epstein, 2011). The collaboration could bring in relationship therapists that can assist financial planners and counselors by helping their clients to not only focus on the financial strain, but to also increase positive communication patterns as well as decrease negative communication patterns.

Recent research from the financial aspect of interventions (e.g. Gale, Goetz, & Bermudez, 2009; Klontz, Kahler, & Klontz, 2008; Maton, Maton, & Martin, 2010) suggests that collaboration between professionals could occur in several ways. First, a financial planner or counselor could assist their clients by referring them to a relationship therapist. The financial planner or counselor could consult with a relationship therapist himself or herself or a relationship therapist could be invited to be part of a financial session. Finally, the financial professional could receive training from the relationship therapists to be prepared to intervene when negative communication arises in sessions.

From a family studies perspective, the suggestions fall in line with the guidelines set forth by Falconier and Epstein (2011) for working with couples experiencing financial strain, focusing on three options. The options focus on the way professionals may work with financially strained couples, financial training for marriage and family therapists, co-therapy involving a financial counselor and a couple therapist, and referrals to financial counselors from a marriage or family therapist. The approaches from the financial and relationship professionals indicate that an awareness of the complementary discipline is not enough to support their clients. From both perspectives, practitioners need to be open to expanding their knowledge and practice base to include the other content area or collaborate with or refer clients to a practitioner in the other content area (areas of financial or relationship).

Suggestions for future research.

Future research could benefit from continuing to explore the impact of financial wellness, communication, and relationship satisfaction. While the exploration of marital relationships is interesting and relevant to a large proportion of the population in the United States, future research would also benefit by including all types of committed relationships. Specifically, the increase in the occurrence of non-married, cohabiting couples work investigating financial wellness in these types of couples will expand the literature base as well as provide more guidance for practitioners working with this growing type of couples.

While the data used were appropriate for the current research, the two samples were two separate cross-sectional samples of married individuals in the state of Georgia. Work with different types of data could improve future work. In particular, longitudinal designs involving couples (as opposed to individuals) in committed relationships need to be developed to examine changes in economic variables, like financial wellness to determine how a change affects communication, and relationship satisfaction. Including other relationship and financial variables that may have an impact on relationship outcomes would also enhance future studies. Future research would be improved by using samples that are nationally representative, allowing for more application and generalization to the U.S. population. Also, including both relationship partners would inform research by accounting for both people in a relationship and longitudinal data of this type would allow for following the same couples over time.

Future research may also be improved by further exploring the differences in positive and negative communication patterns as mediators. Mediation by negative communication has a strong base in the literature (e.g. Conger et al., 1994; Kinnunen & Feldt, 2004; Kwon, Rueter, Lee, Koh, & Ok, 2003) whereas mediation by positive communication has been mixed (e.g.

Conger et al., 1994; Falconier & Epstein, 2010). Further research following the suggestion of Falconier and Epstein (2011), could further clarify the role of positive versus negative communication by exploring the ratio of positive to negative communication as predicted by Gottman (1994).

As financial wellness is a multidimensional construct, further research could improve the construct by separating out the objective and subjective components of financial wellness. The Personal Financial Wellness Scale™ contains four items that form an objective construct of financial wellness and four items that form a subjective construct of financial wellness in earlier confirmatory factor analysis conducted by Nielsen (2010). The use of separate constructs of objective and subjective indicators of financial wellness may allow for a better examination of the correlates of financial wellness as well as differences of the correlates as they relate to an economic crisis like the Great Recession. Also, the separate components may interact differently with relationship satisfaction and communication patterns, providing even more information into the possible mediator role of positive and negative communication patterns. It might be possible, for example, that positive and negative communication patterns prove more or less harmful depending on whether the couple is experiencing objective or subjective threats to their financial wellness.

Conclusions

The current research has provided an investigation into financial wellness as a construct as well as pre and post recession analysis. The results of the structural equation models provide insight into the way the most recent recession in the United States may have affected couples' financial wellness and relationship satisfaction. The results of the current research indicate that

the financial wellness of married individuals is indeed lower post-recession, and that this decreased financial wellness is associated with decreases in relationship satisfaction. The good news is that for those interested in how couples are managing their finances and their marriages, the results indicate that communication can mediate the relationship between financial wellness and relationship satisfaction, providing evidence that efforts to improve the communication skills of those who are financially distressed can improve their relationship satisfaction.

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APPENDIX A

Table A1.
RDAS Relationship Satisfaction Subscale

Variable	Item wording	Item Coding
On a scale of 1 to 6 where 1=All the time; 2=Most of the time; 3=More often than not; 4=Occasionally; 5=Rarely; and 6=Never		
Discuss divorce	How often do you discuss or have you considered divorce, separation, or terminating your relationship? (Would you say all the time, most of the time, more often than not, occasionally, rarely, or never?)	1 = All the time 2 = Most of the time 3 = More often than not 4 = Occasionally 5 = Rarely 6 = Never
Quarrel	How often do you and your spouse quarrel?	1 = All the time 2 = Most of the time 3 = More often than not 4 = Occasionally 5 = Rarely 6 = Never
Regret marriage	Do you ever regret that you married?	1 = All the time 2 = Most of the time 3 = More often than not 4 = Occasionally 5 = Rarely 6 = Never
Get on each other's nerves	How often do you and your spouse "get on each other's nerves"?	1 = All the time 2 = Most of the time 3 = More often than not 4 = Occasionally 5 = Rarely 6 = Never

Table A2.

Personal Financial Wellness™ Scale

Variable	Item wording	Item Coding
Overall Personal Financial Wellness™ score	N/A, Average score of the eight items	1=Lowest financial wellness 10=Highest financial wellness
Level of financial stress [a]	On a scale of 1 to 10 where 1 is "no stress at all" and 10 is "overwhelming stress," what do you feel is the level of your financial stress today?	1=Overwhelming stress 4=High stress 7=Low stress 10=No stress at all
Satisfaction with financial situation	On a scale of 1 to 10 where 1 is "dissatisfied" and 10 is "satisfied," how satisfied are you with your present financial situation?	1=Completely dissatisfied 4=Somewhat dissatisfied 7= Somewhat satisfied 10=Completely satisfied
Feelings about current financial condition [a]	On a scale of 1 to 10 where 1 is "feeling comfortable" and 10 is "overwhelmed", how do you feel about your current financial condition?	1=Overwhelmed 4=Sometimes feel worried 7=Not worried 10=Feeling comfortable
The next few questions will use a scale of 1 to 10 where 1 is "never" and 10 is "all of the time."		
Can't afford to go out [a]	How often does this happen to you? You want to go out to eat, go to a movie, or do something else and you don't go because you can't afford it?	1=All of the time 4=Sometimes 7=Rarely 10=Never
Living paycheck to paycheck [a]	How frequently do you find yourself just getting by financially and living paycheck to paycheck?	1=All of the time 4=Sometimes 7=Rarely 10=Never
Worry about living expenses [a]	How often do you worry about being able to meet normal monthly living expenses?	1=All of the time 4=Sometimes 7=Rarely 10=Never
Confidence regarding financial emergency	On a scale of 1 to 10 where 1 is "no confidence" and 10 is "high confidence," how confident are you that you could find the money to pay for a financial emergency that costs about $1,000?	1=No confidence 4=Little confidence 7=Some confidence 10=High confidence
Stress about finances in general [a]	On a scale of 1 to 10 where 1 is "no stress at all" and 10 is "overwhelming stress," how stressed are you about your personal finances in general?	1=Overwhelming stress 4=High stress 7=Low stress 10=No stress at all

[a] The direction of the responses on this item was reversed for this survey to reduce respondent confusion that occurs from response direction shifts. Responses were recoded to be consistent with the original scoring of the PFW Scale.

Table A3.

Communication Patterns Questionnaire-Short Form Subscales

Variable	Item wording	Item Coding
We are interested in how you and your spouse typically deal with problems in your relationship. On a scale of 1 to 9 where 1 is "very unlikely" and 9 is "very likely". When issues or problems arise, how likely is it that: or During a discussion of issues or problems, how likely is it that: (Depending on the question)		
Positive Interaction		
Mutual discussion	You and your spouse both try to discuss the problem.	1 = very unlikely 9 = very likely
Mutual expression	You and your spouse both express your feelings to each other.	1 = very unlikely 9 = very likely
Mutual negotiation	You and your spouse both suggest possible solutions and compromises.	1 = very unlikely 9 = very likely
Criticize-defend		
Mutual blame	You and your spouse both blame, accuse, or criticize each other.	1 = very unlikely 9 = very likely
Respondent criticize/ spouse defends	You criticize while your spouse defends him or herself.	1 = very unlikely 9 = very likely
Spouse criticizes/ respondent defends	Your spouse criticizes while you defend yourself.	1 = very unlikely 9 = very likely
Demand-withdraw		
Mutual avoidance	You and your spouse both avoid discussing the problem.	1 = very unlikely 9 = very likely
Respondent discusses/ spouse avoids	You try to start a discussion while your spouse tries to avoid a discussion.	1 = very unlikely 9 = very likely
Spouse discusses/ respondent avoids	Your spouse tries to start a discussion while you try to avoid a discussion.	1 = very unlikely 9 = very likely

APPENDIX B

To fully explicate the possible models to examine the mediating effect of communication of financial wellness and relationship satisfaction, several alternate models were examined. The alternate models not selected are reported here for Research Question 4. Based off of the decision made for Research Question 4 model, the model for Research Question 5 was also modeled in the same manner.

Alternative 1:

- One model, with latent constructs of communication patterns is created with the three subscales of the CPQ (criticize-defend, demand-withdraw, and positive interaction).
- Communication patterns are scaled positively, so that an increase means more positive patterns (more of positive interaction, less of criticize-defend and demand-withdraw).
- RQ4: will be run two times, for 2007 and 2011, results for 2 models.
- RQ5: will be run once for 2011, results for 1 model.

Alternative 2:

- One model, with two latent constructs (positive and negative) of communication patterns is created with the three subscales of the CPQ (criticize-defend, demand-withdraw, and positive interaction).
- RQ4: will be run two times, for 2007 and 2011, results for 2 models.
- RQ5: will be run once for 2011, results for 1 model.

Alternative 3:

- Two models, one with the latent constructs of negative communication patterns (criticize-defend and demand withdraw) and the second with the latent construct of positive communication patterns (positive interaction). Negative behaviors loaded directly onto 1 latent construct without identifying the subscales separately.
- RQ4: series of models will be run two times, for 2007 and 2011, results for 4 models.
- RQ5: series of models will be run once for 2011, results for 2 models.

Table B1. *Comparison of alternative models for Research Question 4*

Index	2007 Model	Indication of Fit (07)	2011 Model	Indication of Fit (11)	Suggested Cut-Off Values	Paths Estimated	Application Ability
Alternative 1 *Includes both Positive and Negative Communication Patterns in the Model* (Tables B2 and B3)							
RMSEA	0.051	Good fit.	0.050	Good fit.	<0.06 (Hu & Bentler, 1998) <0.01 (excellent fit), <0.05 (good fit), <0.08 (mediocre fit) (MacCallum, et al., 1996)	48	Combined construct of negative and positive behaviors limits the ability to make recommendations on specific relationship behaviors from the direct effects.
Alternative 2 *Includes both Positive and Negative Communication Patterns in the Model* (Tables B4 and B5)							
RMSEA	0.064	Mediocre/Good fit.	0.056	Good fit.	<0.06 (Hu & Bentler, 1998) <0.01 (excellent fit), <0.05 (good fit), <0.08 (mediocre fit) (MacCallum et al., 1996)	48	Combined construct of negative and positive behaviors limits the ability to make recommendations on specific relationship behaviors from the direct effects. Unable to identify mediation unless both positive and negative both have a mediating effect.
Alternative 3							
Negative Communication Patterns Model (Tables B6 and B7)							
RMSEA	0.071	Poor/Mediocre fit.	0.062	Poor/Mediocre fit.	<0.06 (Hu & Bentler, 1998) <0.01 (excellent fit), <0.05 (good fit), <0.08 (mediocre fit) (MacCallum et al., 1996)	39	Separate model allows for examination of negative behaviors and also for comparison to the positive behaviors. Unfortunately the model fit does not respond well to not having the subscales identified.

Table B2.

FIML parameter estimates for factor loadings in the SEM model alternative 1 for Research Question 4 model

Parameter	Standardized	SE	R^2	T-value	Standardized	SE	R^2	T-value
	2007 Model Factor Loadings				2011 Model Factor Loadings			
Financial wellness → Level of financial stress	0.75***	0.10	0.56	19.02	0.72***	0.11	0.52	17.80
Financial wellness → Financial situation	0.66***	0.11	0.44	16.27	0.65***	0.12	0.42	15.59
Financial wellness → Financial condition	0.73***	0.10	0.54	18.58	0.72***	0.11	0.52	17.93
Financial wellness → Can't afford to go out	0.62***	0.11	0.39	14.86	0.68***	0.12	0.46	16.26
Financial wellness → Paycheck to paycheck	0.74***	0.13	0.55	18.96	0.80***	0.13	0.64	20.60
Financial wellness → Living expenses	0.79***	0.11	0.63	20.81	0.84***	0.12	0.70	22.14
Financial wellness → Financial emergency	0.58***	0.12	0.34	13.85	0.69***	0.12	0.48	16.82
Financial wellness → Finances in general	0.82***	0.10	0.67	21.81	0.84***	0.11	0.70	22.16
Positive interaction→ Mutual discussion	0.56	--	0.31	--	0.62	--	0.38	--
Positive interaction→ Mutual expression	0.60***	0.16	0.36	8.13	0.61***	0.18	0.37	7.83
Positive interaction → Mutual negotiation	0.64***	0.18	0.41	8.26	0.61***	0.20	0.38	7.82
Demand-withdraw → Mutual avoidance	0.38	--	0.15	--	0.48	--	0.23	--
Demand-withdraw → R discusses/S avoids	0.62***	0.22	0.38	6.90	0.52***	0.24	0.27	6.15
Demand-withdraw → S discusses/R avoids	0.78***	0.32	0.60	7.11	0.57***	0.26	0.32	6.29

Criticize-defend → Mutual blame	0.63	--	0.40	--	0.58	--	0.34	--
Criticize-defend → R criticizes/S defends	0.92***	0.17	0.85	14.47	0.86***	0.18	0.75	12.05
Criticize-defend → S criticizes/R defends	0.77***	0.14	0.60	14.05	0.81***	0.17	0.65	12.05
Relationship satisfaction → Discuss divorce	0.65	--	0.42	--	0.59	--	0.35	--
Relationship satisfaction → Quarrel	0.57***	0.06	0.33	9.80	0.55***	0.07	0.31	8.21
Relationship satisfaction → Regret marriage	0.63***	0.05	0.40	10.47	0.58***	0.06	0.33	8.41
Relationship satisfaction → Get on each other's nerves	0.54***	0.07	0.29	9.35	0.63***	0.10	0.40	8.82

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

Table B3.

FIML parameter estimates for direct effects in the SEM model alternative 1 for Research Question 4 model

	2007 Model			2011 Model		
	Direct Effects			Direct Effects		
Parameter	Standardized	SE	T-value	Standardized	SE	T-value
Communication patterns→ Positive interaction	-0.65***	0.08	-7.95	-0.44***	0.08	-5.66
Communication patterns → Demand-withdraw	-0.82***	0.12	-6.86	-0.73***	0.11	-6.61
Communication patterns → Criticize-defend	-0.67***	0.07	-9.97	-0.69***	0.08	-8.25
Financial wellness → Communication patterns	-0.47***	0.06	-7.51	-0.35***	0.07	-5.10
Financial wellness → Relationship satisfaction	0.09	0.06	1.36	0.09	0.07	1.33
Communication patterns → Relationship satisfaction	-0.75***	0.08	-9.44	-0.60***	0.09	-6.76

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

Table B4.

FIML parameter estimates for factor loadings in the SEM model alternative 2 for Research Question 4 model

Parameter	Standardized	SE	R^2	T-value	Standardized	SE	R^2	T-value
	2007 Model Factor Loadings				2011 Model Factor Loadings			
Financial wellness → Level of financial stress	0.75***	0.11	0.52	17.84	0.72***	0.11	0.52	17.84
Financial wellness → Financial situation	0.66***	0.12	0.42	15.62	0.65***	0.12	0.42	15.62
Financial wellness → Financial condition	0.73***	0.11	0.52	17.99	0.72***	0.11	0.52	17.99
Financial wellness → Can't afford to go out	0.62***	0.12	0.46	16.26	0.68***	0.12	0.46	16.26
Financial wellness → Paycheck to paycheck	0.74***	0.13	0.63	20.59	0.80***	0.13	0.63	20.59
Financial wellness → Living expenses	0.79***	0.12	0.70	22.12	0.83***	0.12	0.70	22.12
Financial wellness → Financial emergency	0.58***	0.12	0.48	16.85	0.69***	0.12	0.48	16.85
Financial wellness → Finances in general	0.82***	0.11	0.70	22.20	0.84***	0.11	0.70	22.20
Positive patterns→ Mutual discussion	0.55	--	0.30	--	0.61	--	0.37	--
Positive patterns → Mutual expression	0.60***	0.16	0.36	7.96	0.62***	0.19	0.38	7.86
Positive patterns → Mutual negotiation	0.63***	0.19	0.43	8.08	0.62***	0.20	0.38	7.85
Negative patterns → Mutual avoidance	0.23	--	0.05	--	0.27	--	0.07	--
Negative patterns → R discusses/S avoids	0.44***	0.25	0.19	4.47	0.34***	0.22	0.11	4.39
Negative patterns → S discusses/R avoids	0.48***	0.32	0.23	4.55	0.35***	0.23	0.12	4.48

Negative patterns → Mutual blame	0.65***	0.36	0.42	4.77	0.59***	0.30	0.34	5.20
Negative patterns → R criticizes/S defends	0.89***	0.50	0.79	4.90	0.86***	0.41	0.74	5.45
Negative patterns → S criticizes/R defends	0.76***	0.41	0.58	4.86	0.79***	0.37	0.63	5.43
Relationship satisfaction → Discuss divorce	0.65	--	0.42	--	0.58	--	0.34	--
Relationship satisfaction → Quarrel	0.58***	0.06	0.34	9.90	0.55***	0.07	0.30	8.18
Relationship satisfaction → Regret marriage	0.62***	0.05	0.38	10.35	0.57***	0.06	0.33	8.38
Relationship satisfaction → Get on each other's nerves	0.55***	0.07	0.30	9.41	0.64***	0.10	0.41	8.83

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

Table B5.

FIML parameter estimates for direct effects in the SEM model alternative 2 for Research Question 4 model

	2007 Model			2011 Model		
	Direct Effects			Direct Effects		
Parameter	Standardized	SE	T-value	Standardized	SE	T-value
Financial wellness → Positive patterns	0.21***	0.06	3.52	0.18***	0.06	2.93
Financial wellness → Negative patterns	-0.29***	0.07	-3.79	-0.22***	0.07	-3.38
Financial wellness → Relationship satisfaction	0.23***	0.05	4.23	0.17***	0.06	2.94
Positive patterns→ Relationship satisfaction	0.28***	0.08	3.74	0.19***	0.07	2.68
Negative patterns→ Relationship satisfaction	-0.43***	0.11	-4.04	-0.39***	0.10	-4.05

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

Table B6.

FIML parameter estimates for factor loadings in the negative patterns SEM model alternative 3 for Research Question 4 model

Parameter	Standardized	SE	R^2	T-value	Standardized	SE	R^2	T-value
	2007 Model Factor Loadings				2011 Model Factor Loadings			
Financial wellness → Level of financial stress	0.75***	0.10	0.55	19.03	0.72***	0.11	0.52	17.81
Financial wellness → Financial situation	0.66***	0.11	0.44	16.27	0.65***	0.12	0.42	15.62
Financial wellness → Financial condition	0.73***	0.10	0.54	18.57	0.72***	0.11	0.52	17.92
Financial wellness → Can't afford to go out	0.62***	0.11	0.39	14.86	0.68***	0.12	0.46	16.28
Financial wellness → Paycheck to paycheck	0.74***	0.13	0.55	18.99	0.80***	0.13	0.64	20.64
Financial wellness → Living expenses	0.79***	0.11	0.63	20.85	0.84***	0.12	0.70	22.17
Financial wellness → Financial emergency	0.58***	0.12	0.34	13.79	0.69***	0.12	0.48	16.84
Financial wellness → Finances in general	0.82***	0.10	0.67	21.82	0.84***	0.11	0.70	22.18
Negative patterns → Mutual avoidance	0.22	--	0.05	--	0.27	--	0.72	--
Negative patterns → R discusses/S avoids	0.44***	0.26	0.19	4.33	0.33***	0.22	0.11	4.36
Negative patterns → S discusses/R avoids	0.48***	0.32	0.23	4.40	0.35***	0.23	0.12	4.44
Negative patterns → Mutual blame	0.64***	0.37	0.42	4.61	0.59***	0.31	0.34	5.16
Negative patterns → R criticizes/S defends	0.89***	0.52	0.80	4.73	0.86***	0.41	0.74	5.41
Negative patterns → S criticizes/R defends	0.77***	0.43	0.59	4.69	0.79***	0.37	0.63	5.39

Relationship satisfaction → Discuss divorce	0.64	--	0.41	--	0.58	--	0.34	--
Relationship satisfaction → Quarrel	0.59***	0.07	0.34	9.77	0.56***	0.07	0.31	8.19
Relationship satisfaction → Regret marriage	0.61***	0.05	0.37	10.04	0.57***	0.06	0.33	8.30
Relationship satisfaction → Get on each other's nerves	0.56***	0.08	0.31	9.39	0.64***	0.10	0.40	8.73

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

Table B7.

FIML parameter estimates for direct effects in the negative patterns SEM model alternative 3 for Research Question 4 model

	2007 Model			2011 Model		
	Direct Effects			Direct Effects		
Parameter	Standardized	SE	T-value	Standardized	SE	T-value
Financial wellness → Negative patterns	-0.29***	0.08	-3.70	-0.22***	0.07	-3.36
Financial wellness → Relationship satisfaction	0.29***	0.06	5.35	0.20***	0.06	3.55
Negative patterns→ Relationship satisfaction	-0.53***	0.13	-4.23	-0.43***	0.10	-4.25

*** Statistically significant at confidence level of 99%; critical t-value of 2.58 used.

APPENDIX C

Table C1.
Correlations among primary variables of study (pooled sample)

Variable	1.	2.	3.[a]	4.[a]	5.	6.[a]	7.[a]	8.[a]	9.[a]	10.[a]	11.[a]	12.[a]	13.	14.[a]	15.[a]	16.[a]	17.
1. Personal Financial Wellness™	1.000																
2. Age	.180 ***	1.000															
3. Male[a]	.083 ***	.071 **	1.000														
4. Income[a]	.415 ***	.009	.002	1.000													
5. Years Married	.171 ***	.775 ***	.023	.016	1.000												
Marital Status[a]																	
6. First marriage for both	.095 ***	-.076 **	.033	.084 **	.289 ***	1.000											
7. Remarriage for one spouse	-.083 ***	-.066 **	-.043	-.095 **	-.127 ***	-.596 ***	1.000										
8. Remarriage for both spouses	-.036	.155 ***	.000	-.009	-.231 ***	-.648 ***	-.225 ***	1.000									
9. Education[a]	.210 ***	-.049	.001	.492 ***	-.081 **	.102 ***	-.058 *	-.069 **	1.000								
Race[a]																	
10. White	.154 ***	.102 ***	.073 **	.110 ***	.131 ***	-.015	-.049	.064 **	-.005	1.000							
11. Black	-.170 ***	-.076 **	-.082 **	-.127 ***	-.102 ***	.016	.049	-.066 **	-.035	-.904 ***	1.000						

12. Other	.015	-.072**	.010	.024	-.080**	-.002	.007	-.004	.089***	-.345***	-.090***	1.000					
13. Total number of children	-.004	.214***	.009	-.100***	.170***	-.044	-.06*	.111***	-.125***	-.049	.071**	-.041	1.000				
14. Young child present (<5 yrs) [a]	-.104***	-.561***	.006	-.101**	-.493***	.035	.075**	-.122***	.053	-.011	-.011	.051	-.173***	1.000			
Family structure status[a]																	
15. Nuclear Family	.095**	-.025	.010	.157***	.201***	.550***	-.251***	-.429***	.113***	.103***	-.099**	-.024	-.304***	.039	1.000		
16. Step/Blended Family	-.095**	.025	-.010	-.157***	-.201***	-.550***	.251***	.429***	-.113***	-.103***	.099**	.024	.304***	-.039	-1.000***	1.000	
17. Financial behaviors index	-.083***	-.117***	-.044	.029	-.106***	-.040	.065*	-.013	.059**	-.105***	.130***	-.040	-.028	.047	.044	-.044	1.000

Notes. Based on 9 implicates. N=1,004
[a]Spearman correlation used.
*p ≤ .10. **p ≤ .05. ***p ≤ .01

Table C2.

Correlations among primary variables of study in Research Question 4 models (pooled sample)

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.
1.Level of financial stress	1.000 (995)																				
2.Satisfaction with financial situation	.538 *** (995)	1.000 (998)																			
3.Feelings about current financial situation	.634 *** (992)	.500 *** (995)	1.000 (996)																		
4.Can't afford to go out	.446 *** (973)	.387 *** (976)	.432 *** (975)	1.000 (979)																	
5.Living paycheck to paycheck	.526 *** (985)	.477 *** (988)	.524 *** (987)	.552 *** (973)	1.000 (992)																
6. Worry about living expenses	.552*** (991)	.507 *** (994)	.549 *** (993)	.579 *** (977)	.698 *** (990)	1.000 (998)															
7.Confidence regarding financial emergency	.394 *** (989)	.467 *** (992)	.439 *** (991)	.453 *** (974)	.502 *** (987)	.555 *** (993)	1.000 (995)														
8. Stress about finances in general	.649 *** (986)	.554 *** (989)	.634 *** (988)	.512 *** (972)	.614 *** (984)	.665 *** (990)	.515 *** (988)	1.000 (992)													
9.Mutual discussion	.168 *** (978)	.125 *** (981)	.171 *** (980)	.063 ** (963)	.066 ** (975)	.076 *** (981)	.113 *** (979)	.128 *** (977)	1.000 (985)												
10.Mutual expression	.139 *** (977)	.131 *** (980)	.151 *** (979)	.102 *** (963)	.129 *** (974)	.125 *** (9801)	.187 *** (978)	.142 *** (976)	.352 *** (977)	1.000 (984)											
11.Mutual negotiation	.114 *** (967)	.125 *** (970)	.168 *** (968)	.117 *** (952)	.110 *** (965)	.130 *** (972)	.138 *** (969)	.125 *** (967)	.351 *** (968)	.404 *** (969)	1.000 (975)										
12. Mutual avoidance	-.135 *** (977)	-.101 *** (980)	-.171 *** (979)	-.130 *** (962)	-.125 *** (974)	-.167 *** (980)	-.130 *** (978)	-.164 *** (976)	-.215 *** (979)	-.148 *** (975)	-.138 *** (966)	1.000 (984)									
13. S discusses/R avoids	-.130 *** (971)	-.108 *** (974)	-.159 *** (973)	-.116 *** (956)	-.136 *** (968)	-.177 *** (975)	-.144 *** (972)	-.170 *** (970)	-.156 *** (975)	-.057 *** (972)	-.086 *** (964)	-.256 *** (971)	1.000 (978)								
14. R discusses/S avoids	-.176 *** (965)	-.169 *** (968)	-.178 *** (967)	-.184 *** (952)	-.193 *** (962)	-.177 *** (969)	-.194 *** (966)	-.198 *** (964)	-.201 *** (969)	-.180 *** (967)	-.206 *** (959)	.250 *** (965)	.385 *** (970)	1.000 (972)							
15. Mutual blame	-.151 *** (973)	-.137 *** (976)	-.169 *** (975)	-.160 *** (958)	-.122 *** (970)	-.182 *** (976)	-.161 *** (974)	-.183 *** (972)	-.170 *** (974)	-.139 *** (975)	-.180 *** (970)	.163 *** (972)	.233 *** (971)	.263 *** (965)	1.000 (980)						

16. S criticizes/R defends	-.115 *** (962)	-.140 *** (965)	-.161 *** (964)	-.134 *** (947)	-.116 *** (959)	-.173 *** (966)	-.137 *** (963)	-.157 *** (962)	-.187 *** (963)	-.146 *** (964)	-.96 *** (962)	-.182 *** (962)	-.331 *** (962)	.328 *** (956)	.515 *** (966)	1.000 (969)					
17. R criticizes/S defends	-.069 ** (965)	-.063 ** (968)	-.107 *** (967)	-.085 *** (950)	-.063 ** (963)	-.106 *** (970)	-.042 (967)	-.098 *** (965)	-.127 *** (966)	-.084 *** (966)	-.115 *** (964)	-.141 *** (964)	-.211 *** (965)	.275 *** (958)	.491 *** (968)	.710 *** (968)	1.000 (973)				
18.Discuss divorce	.167 *** (974)	.193 *** (977)	.158 *** (976)	.102 *** (960)	.170 *** (972)	.170 *** (978)	.205 *** (975)	.161 *** (973)	.168 *** (974)	.133 *** (973)	.195 *** (965)	-.149 *** (971)	-.124 *** (970)	-.208 *** (964)	-.221 *** (973)	-.266 *** (961)	-.171 *** (964)	1.000 (982)			
19.Quarrel	.158 *** (967)	.190 *** (970)	.147 *** (969)	.137 *** (953)	.114 *** (964)	.138 *** (970)	.159 *** (968)	.154 *** (966)	.166 *** (967)	.088 *** (967)	.119 *** (960)	-.073 ** (965)	-.151 *** (963)	-.176 *** (957)	-.300 *** (967)	-.265 *** (957)	-.200 *** (959)	.300 *** (971)	1.000 (974)		
20.Regret marriage	.149 *** (971)	.143 *** (974)	.195 *** (973)	.059 * (958)	.145 *** (969)	.154 *** (975)	.150 *** (972)	.169 *** (970)	.205 *** (970)	.121 *** (971)	.179 *** (963)	-.165 *** (968)	-.118 *** (966)	-.202 *** (960)	-.233 *** (970)	-.269 *** (958)	-.198 *** (960)	.485 *** (975)	.273 *** (969)	1.000 (979)	
21.Get on each other's nerves	.168 *** (965)	.204 *** (968)	.137 *** (966)	.154 *** (952)	.163 *** (964)	.197 *** (969)	.201 *** (966)	.182 *** (964)	.147 *** (963)	.135 *** (964)	.174 *** (956)	-.139 *** (961)	-.159 *** (959)	-.181 *** (953)	-.324 *** (964)	-.287 *** (952)	-.222 *** (955)	.303 *** (968)	.453 *** (962)	.282 *** (965)	1.000 (973)

[a]Spearman correlation used.

*p ≤ .10. **p ≤ .05. ***p ≤ .01

Table C3.

Correlations among primary variables of study in Research Question 5 models (2011 sample only)

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.
1.Level of financial stress	1.000 (486)																					
2.Satisfaction with financial situation	.525 *** (486)	1.000 (488)																				
3.Feelings about current financial situation	.670 *** (484)	.478 *** (486)	1.000 (486)																			
4.Can't afford to go out	.492 *** (475)	.416 *** (477)	.434 *** (476)	1.000 (477)																		
5.Living paycheck to paycheck	.540 *** (480)	.478 *** (482)	.556 *** (481)	.572 *** (474)	1.000 (483)																	
6. Worry about living expenses	.537 *** (483)	.521 *** (485)	.552 *** (484)	.590 *** (476)	.719 *** (482)	1.000 (486)																
7.Confidence regarding financial emergency	.419 *** (483)	.522 *** (485)	.459 *** (483)	.479 *** (476)	.541 *** (482)	.605 *** (485)	1.000 (486)															
8. Stress about finances in general	.623 *** (481)	.550 *** (483)	.622 *** (482)	.529 *** (474)	.647 *** (480)	.705 *** (483)	.587 *** (483)	1.000 (484)														
9.Mutual discussion	.123 *** (477)	.080 * (479)	.202 *** (478)	.049 (470)	.037 (475)	.062 * (478)	.084 ** (478)	.123 *** (477)	1.000 (479)													
10.Mutual expression	.121 *** (475)	.082 * (477)	.165 *** (476)	.079 * (468)	.098 ** (473)	.073 (476)	.134 *** (476)	.146 *** (475)	.394 *** (475)	1.000 (477)												
11.Mutual negotiation	.090 ** (470)	.097 ** (472)	.176 *** (471)	.115 *** (463)	.078 * (469)	.126 *** (472)	.126 *** (472)	.111 *** (471)	.346 *** (471)	.394 *** (470)	1.000 (473)											
12. Mutual avoidance	-.132 *** (476)	-.063 (478)	-.121 *** (477)	-.089 ** (469)	-.110 ** (474)	-.111 ** (477)	-.080 * (477)	-.131 *** (476)	-.171 *** (477)	-.091 ** (473)	-.090 ** (469)	1.000 (478)										
13. S discusses/R avoids	-.101 ** (471)	-.030 (473)	-.115 *** (472)	-.070 (464)	-.116 ** (469)	-.147 *** (472)	-.081 * (472)	-.127 *** (471)	-.266 *** (470)	.032 (471)	-.053 (467)	-.266 *** (470)	1.000 (473)									
14. R discusses/S avoids	-.111 ** (471)	-.104 ** (473)	-.134 ** (472)	-.171 *** (464)	-.163 *** (469)	-.163 *** (472)	-.107 ** (472)	-.120 *** (471)	-.252 *** (470)	-.084 * (471)	-.167 *** (467)	.252 *** (470)	.308 *** (470)	1.000 (473)								
15. Mutual blame	-.149 *** (471)	-.118 *** (473)	-.157 *** (472)	-.200 *** (464)	-.162 *** (469)	-.223 *** (472)	-.133 *** (472)	-.183 *** (471)	-.138 *** (472)	-.080 * (471)	-.149 *** (469)	.146 *** (470)	.203 *** (469)	.203 *** (469)	1.000 (473)							

16. S criticizes/R defends	-.089 * (466)	-.102 ** (468)	-.145 *** (467)	-.145 *** (459)	-.123 *** (464)	-.159 *** (467)	-.078 * (467)	-.121 *** (466)	-.153 *** (467)	-.080 * (466)	-.176 *** (464)	.216 *** (466)	.297 *** (465)	.298 *** (465)	.468 *** (465)	1.000 (468)					
17. R criticizes/S defends	-.038 (467)	-.066 (469)	-.101 ** (468)	-.127 *** (460)	-.092 ** (466)	-.098 ** (469)	-.032 (469)	-.093 ** (468)	-.126 *** (468)	-.070 (467)	-.110 ** (466)	.151 *** (467)	.188 *** (466)	.245 *** (465)	.469 *** (466)	.704 *** (468)	1.000 (470)				
18.Discuss divorce	.125 *** (470)	.178 *** (472)	.117 *** (471)	.042 (463)	.110 *** (468)	.147 *** (471)	.128 *** (471)	.126 *** (470)	.126 *** (470)	.084 * (469)	.149 *** (466)	-.164 *** (468)	-.085 ** (467)	-.133 *** (467)	-.196 *** (469)	-.202 *** (463)	-.149 *** (464)	1.000 (472)			
19.Quarrel	.133 *** (464)	.133 *** (466)	.113 *** (465)	.163 *** (457)	.119 *** (462)	.121 *** (465)	.138 *** (465)	.106 ** (464)	.129 *** (465)	.015 (464)	.066 (462)	-.122 *** (463)	-.101 ** (462)	-.098 ** (462)	-.301 *** (464)	-.180 *** (460)	-.157 *** (461)	.262 *** (465)	1.000 (466)		
20.Regret marriage	.130 *** (467)	.093 *** (469)	.169 *** (468)	.020 (460)	.076 * (465)	.127 *** (468)	.082 * (468)	.132 *** (467)	.178 *** (467)	.046 (467)	.158 *** (464)	-.171 *** (465)	-.013 (464)	-.119 *** (464)	-.205 *** (466)	-.210 *** (460)	-.178 *** (461)	.466 *** (467)	.248 *** (462)	1.000 (469)	
21.Get on each other's nerves	.144 *** (469)	.159 *** (471)	.110 *** (470)	.191 *** (462)	.167 *** (468)	.188 *** (471)	.214 *** (471)	.149 *** (470)	.166 *** (469)	.111 *** (469)	.193 *** (466)	-.127 *** (467)	-.148 *** (466)	-.115 *** (466)	-.334 *** (469)	-.249 *** (463)	-.226 *** (465)	.320 *** (469)	.449 *** (464)	.288 *** (465)	1.000 (472)
22.Couple unemployment[a]	-.017 (486)	-.043 (488)	-.033 (486)	-.090 ** (477)	-.126 ** (483)	-.132 *** (486)	-.194 *** (486)	-.102 ** (484)	.032 (479)	-.012 (477)	-.052 (473)	0.346 (478)	-0.046 (473)	0.001 (477)	0.010 (473)	0.070 (468)	0.058 (470)	-.030 (472)	-.056 (466)	-.045 (469)	-.032 (472)	1.000 (489)

[a]Spearman correlation used.

*p ≤ .10. **p ≤ .05. ***p ≤ .01