

THREE ESSAYS ON MONEY ARGUMENTS AND FINANCIAL BEHAVIORS

by

JULIE A. CUMBIE

B.B.A., University of Central Oklahoma, 1982
M.B.A., University of Central Oklahoma, 1983

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Personal Financial Planning
College of Human Ecology

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2012

Abstract

This dissertation explores financial behavior outcomes based on economic, relational, and behavioral characteristics within marriages and individually. Data for the three essays is obtained from the National Longitudinal Survey of Youth 1979 cohort (NLSY79) and the NLSY79 Child and Young Adult (1986-2008) survey.

Essay one examined the determinants of money arguments within marriage utilizing Lundberg and Pollak's (1994) theory of non-cooperative game theory. Respondents' negative financial behaviors, higher income, and birth order (being laterborn) were found to influence a greater frequency of money arguments.

Essay two examined the predictors of individuals' financial behaviors, specifically socialization characteristics and gender role attitudes (traditional versus non-traditional). Using a theoretical framework of gender role theory (Eagly, 1987), younger age, not being married, being non-Black, non-Hispanic, being males, and having higher income were all found to be predictive of at least one of the three financial behaviors used in this study.

Finally, using a theoretical framework of Becker's (1993) theory of human capital, essay three explored the intergenerational transfer of attitudes and human capital across two generations and their possible link to the respondents' financial behaviors. Results showed that mothers' enhanced human capital, endowed and attained, and nontraditional gender role attitudes have a significant positive impact on the children's financial behaviors. Respondents' income was also found to be significant.

Combined results of the dissertation reveal that a link exists between the three issues discussed in the individual papers. Essay one examined what factors, including financial

behaviors, might influence spousal money arguments. In response, essays two and three explored the predictors of financial behaviors within one generation and across two generations. These studies may be beneficial to financial planners, counselors, and therapists by exposing specific determinants of positive versus negative financial behaviors. These findings also provide useful information for policymakers in creating programs that best serve the needs of individuals related to their personal financial issues. Overall, by exploring not only monetary, but attitudinal and socialization effects of financial behaviors, this study adds to the body of knowledge related to the encompassing field of personal financial planning.

THREE ESSAYS ON MONEY ARGUMENTS AND FINANCIAL BEHAVIORS

by

JULIE A. CUMBIE

B.B.A., University of Central Oklahoma, 1982

M.B.A., University of Central Oklahoma, 1983

A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Personal Financial Planning
College of Human Ecology

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2012

Approved by:

Co-Major Professor
Sonya L. Britt

Approved by:

Co-Major Professor
John E. Grable

Abstract

This dissertation explores financial behavior outcomes based on economic, relational, and behavioral characteristics within marriages and individually. Data for the three essays are obtained from the National Longitudinal Survey of Youth 1979 cohort (NLSY79) and the NLSY79 Child and Young Adult (1986-2008) survey.

Essay one examined the determinants of money arguments within marriage utilizing Lundberg and Pollak's (1994) theory of non-cooperative game theory. Respondents' negative financial behaviors, higher income, and birth order (being laterborn) were found to influence a greater frequency of money arguments.

Essay two examined the predictors of individuals' financial behaviors, specifically socialization characteristics and gender role attitudes (traditional versus non-traditional). Using a theoretical framework of gender role theory (Eagly, 1987), younger age, not being married, being non-Black, non-Hispanic, being males, and having higher income were all found to be predictive of at least one of the three financial behaviors used in this study.

Finally, using a theoretical framework of Becker's (1993) theory of human capital, essay three explored the intergenerational transfer of attitudes and human capital across two generations and their possible link to the respondents' financial behaviors. Results showed that mothers' enhanced human capital, endowed and attained, and nontraditional gender role attitudes have a significant positive impact on the children's financial behaviors. Respondents' income was also found to be significant.

Combined results of the dissertation reveal that a link exists between the three issues discussed in the individual papers. Essay one examined what factors, including financial

behaviors, might influence spousal money arguments. In response, essays two and three explored the predictors of financial behaviors within one generation and across two generations. These studies may be beneficial to financial planners, counselors, and therapists by exposing specific determinants of positive versus negative financial behaviors. These findings also provide useful information for policymakers in creating programs that best serve the needs of individuals related to their personal financial issues. Overall, by exploring not only monetary, but attitudinal and socialization effects of financial behaviors, this study adds to the body of knowledge related to the encompassing field of personal financial planning.

Table of Contents

List of Figures	x
List of Tables.....	xi
List of Statistical Abbreviations.....	xii
Chapter 1 - Introduction	1
Introduction.....	1
Description of Studies	5
References	8
Chapter 2 - Spousal Money Arguments	10
Introduction.....	10
Theoretical Framework and Related Literature	11
Financial Behavior Characteristics.....	14
Human Capital.....	15
Birth Order and Age.....	16
Methods.....	18
Dependent Variable.....	18
Independent Variables.....	19
Financial Behaviors.....	19
Human Capital.....	19
Demographics.....	20
Results	21
Descriptive Statistics	21
Regression	22
Discussion	24
Implications.....	26
Limitations and Recommendations.....	28
References	31
Chapter 3 - The Influence of Gender Attitudes and Socialization on Financial Behaviors	34
Introduction.....	34

Theoretical Framework and Related Literature	35
Financial Behaviors	37
Gender Role Attitudes	38
Socialization Characteristics	40
Methods	42
Dependent Variables	43
Independent Variables	43
Gender Role Attitudes	43
Demographic Characteristics	44
Results	45
Descriptive Statistics	45
Regression Analysis	46
Regression 1: Not Putting Off Buying Necessities	47
Regression 2: No Difficulty Paying Bills.....	48
Regression 3: Has Money Left Over.....	49
Discussion	50
Implications	53
Limitations and Recommendations	54
References	56
Chapter 4 - The Financial Behaviors of Children Based on Mother's Gender Role Attitudes and	
Human Capital Transfers	60
Introduction	60
Theoretical Framework and Related Literature	62
Financial Behaviors	63
Gender Roles/Attitudes	65
Human Capital.....	66
Endowed and Attained Human Capital.....	68
Methods.....	69
Dependent Variables	70
Independent Variables.....	71
Gender Role Attitudes	71

Endowed Human Capital	72
Attained Human Capital.....	72
Results	74
Descriptive Statistics	74
Regression Analysis	75
Regression 1: Not Putting Off Buying Necessities	76
Regression 2: No Difficulty Paying Bills.....	77
Regression 3: Has Money Left Over.....	79
Discussion	81
Implications	85
Limitations and Recommendations	87
References	89
Chapter 5 - Conclusions	94
Essay 1	94
Essay 2	95
Essay 3	96
Summary	98
References	100
Appendix A - Codebooks.....	101
Appendix B - Copy of Programming and Output Files	115
Appendix C - Curriculum Vita.....	207

List of Figures

Figure 3.1 Conceptual Framework of Financial Behaviors	37
Figure 4.1 Conceptual Framework of Children's Financial Behaviors	63

List of Tables

Table 2.1 Descriptive Statistics of the Sample Essay 1	22
Table 2.2 Logistic Regression – Money Arguments Essay 1	23
Table 3.1 Descriptive Statistics of the Sample Essay 2	46
Table 3.2 Logistic Regression Model 1 Essay 2 – Do Not Put Off Buying Necessities.....	48
Table 3.3 Logistic Regression Model 2 Essay 2 – No Difficulty Paying Bills.....	49
Table 3.4 Logistic Regression Model 3 Essay 2 – Has Money Left Over.....	50
Table 4.1 Descriptive Statistics of the Sample Essay 3	75
Table 4.2 Logistic Regression Model 1 Essay 3 – Do Not Put Off Buying Necessities.....	77
Table 4.3 Logistic Regression Model 2 Essay 3 – No Difficulty Paying Bills.....	79
Table 4.4 Logistic Regression Model 3 Essay 3 – Has Money Left Over.....	81
Table A.1 NLSY79 Child/Young Adult Codebook.....	101
Table A.2 NLSY79 (1979-2010) Codebook.....	110

List of Statistical Abbreviations

Essay One

$\beta_{\Sigma finbeh}$ = Regression coefficient of summation of respondent's financial behaviors

β_{IQ} = Regression coefficient of respondent's I.Q.

β_{ed} = Regression coefficient of respondent's education

β_{inc} = Regression coefficient of respondent's income

β_{age} = Regression coefficient of respondent's age

β_{bthord} = Regression coefficient of respondent's birth order

Essay Two

β_{gra} = Regression coefficient of respondent's gender role attitudes

β_{inc} = Regression coefficient of respondent's income

β_{age} = Regression coefficient of respondent's age

β_{race} = Regression coefficient of respondent's race

$\beta_{marstat}$ = Regression coefficient of respondent's marital status

β_{sex} = Regression coefficient of respondent's sex

Essay Three

β_{mgra} = Regression coefficient of respondent's mother's gender role attitudes

β_{mlq} = Regression coefficient of respondent's mother's I.Q.

β_{med} = Regression coefficient of respondent's mother's education

β_{minc} = Regression coefficient of respondent's mother's income

β_{cgra} = Regression coefficient of respondent's gender role attitudes

β_{ciq} = Regression coefficient of respondent's I.Q.

β_{ced} = Regression coefficient of respondent's education

β_{cinc} = Regression coefficient of respondent's income

Additional Statistical Abbreviations Used in All Three Essays

N = Total sample size

β = Standardized beta estimate

p = Probability

b = Coefficient

Chapter 1 - Introduction

Introduction

Individuals and families have recently been subjected to many financial stressors due to the downturn of the economy. The United States has seen a recession, rising fuel and food prices, a mortgage and credit crisis, increased bankruptcies, and reduced savings (McCormick, 2009). A survey conducted by the American Psychological Association (2004) reported that 73% of the respondents listed money as the main cause of stress in their lives. Financial strain leads to other personal issues such as depression, anxiety, insomnia, and headaches (O'Neill, Sorhaindo, Xiao, & Garman, 2005). These situations make it imperative that individuals and families consider incorporating the services of a financial professional in order to create and sustain positive financial health.

“Financial planning is the long term process of wisely managing your finances so you can achieve your goals and dreams, while at the same time negotiating the financial barriers that inevitably arise in every stage of life” (Financial Planning Association, 2011, p.1). Traditionally, the financial planning process has consisted of aiding individuals with financial issues such as cash flow management, investment planning, tax planning, retirement planning, estate planning, and risk management, etc. According to Grable, Archuleta, and Nazarinia (2011, Chapter 3), financial planning is a proactive process, where planning starts with determining an individual's or family's financial goals and then providing services or products to obtain those goals. On the other hand, financial counseling is a reactive process whereby the planner assesses the clients' financial problems or concerns, such as overindebtedness, and assists them in changing their negative behaviors or situations. However, both disciplines have evolved into a much more complex practice of not only “crunching numbers,” but engaging individuals in awareness of the

root of their money issues. In other words, why do consumers exhibit certain financial behaviors? In order to face the challenges associated with behavioral change, traditional financial planners/counselors have engaged in collaboration with those trained in financial therapy, who are trained to guide clients in behavioral change that can make their financial plan successful (Maton, Maton, & Martin, 2008). Planners/counselors/therapists who are dedicated to collaborating to work with clients in a “holistic way by addressing both financial issues and emotional, relational, and behavioral issues that compound the problem have an opportunity to change the financial planning and counseling professions” (Archuleta & Grable, 2011 p. 56). Such a collaboration will allow financial professionals to help clients achieve long-lasting behavioral change and lead to higher levels of emotional, relational, and financial well-being (Archuleta & Grable). The overlying discipline of personal financial planning/counseling/therapy seeks to assist individuals in dealing with financial issues more effectively, and to generate research to assist policymakers in better formulating programs that will address what public policy has deemed significant issues.

Unlike the traditional economist who tends to work with aggregate data to calculate a general equilibrium at the firm, industry, or market level, the personal financial planner/counselor/therapist explores individuals more deeply and attempts to observe and understand individual behavior and its determinants. Rather than attempting to discover the aggregate utility function (i.e., total satisfaction) for consumers in a market, the personal financial planner/counselor/therapist considers the individual’s utility function. Although economic issues influence people’s response to financial concerns, individuals’ behaviors may be influenced by other factors. In addition, such financial behaviors may impact personal relationships.

In response, this dissertation examines financial outcomes based on economic, relational, and behavioral characteristics. These studies provide useful information for the overall financial planning, counseling, and therapy professions by exposing certain characteristics of individuals that may influence their financial behaviors and their relationships where money is involved. For instance, in the first essay results showed that as respondent's income increased, couples engage in more frequent money arguments. This finding is contrary to popular press reports which suggest that more money can solve problems. In addition, essay two found that one's attitudes related to traditional versus nontraditional gender roles is not significant in predicting one's financial behavioral outcomes, but that gender itself is predictive. Also interesting, essay three discovered that gender role attitudes are predictive of financial behavioral outcomes across generations; specifically, mothers' gender role attitudes influence their children's financial behaviors. This paper also found that mothers' human capital has an impact on their children's financial behavioral outcomes. Apparently, findings from these studies show that not only money itself, but other issues may influence one's financial behaviors and resulting outcomes. By exploring not only the monetary facets of behavior, but also the attitudinal and socialization effects of financial behaviors, this dissertation seeks to provide useful information to the encompassing field of personal financial planning. This research can be used to assist practitioners in the area of financial planning, financial counseling, and/or financial therapy, as well as add to the body of knowledge that policymakers can access when designing programs associated with personal financial issues.

In the first essay, the issue of spousal money arguments was observed. Research has shown that money tends to cause more tension than almost any other issue in marital relationships (Britt & Huston, 2012; Regnier & Gengler, 2006). Obviously, relieving marital

stress caused by money arguments would be a first step for practitioners working with individuals in either counseling them about money issues or helping them plan their financial future. A clearer understanding of what causes marital stress in regards to monetary arguments would also be useful to policymakers in establishing programs to enable families to make better financial decisions.

The second in this series of essays addresses the issue of gender role attitudes and socialization characteristics on financial behavioral outcomes. A fuller awareness of the influence of these variables can be useful to both policymakers and practitioners. If a policy or planning goal is to modify financial behaviors towards a particular outcome, understanding what attitudes and/or characteristics will lead to the presence or absence of that behavior will aid in helping individuals address their issues. In addition, this determination will assist policymakers in designing programs that will result in the desired outcome.

The third and final essay deals with the issue of the intergenerational transfer of financial behaviors. Understanding what type of household would tend to produce children who either exhibit or lack a particular financial behavior would be useful in more effectively targeting resources dedicated to improving financial behaviors. For those practitioners working with individuals, insight into the intergenerational transfer of attitudes and/or characteristics and its influence on their children's financial behaviors can be beneficial in more fully understanding a client, and perhaps enlightening clients about the potential consequences for their children's financial well-being. Information from this study also will provide assistance for policymakers in providing successful programs for individuals related to their financial behaviors and resulting outcomes.

Regardless of whether practitioners work independently as a planner, counselor, or therapist or in collaboration with one another, they must face the reality that they need to work with the whole person in order to have a better understanding of their relationship with money (Maton et al., 2002). These three papers attempt to capture more of the “whole person” by discovering attributes of an individual’s background that will make them more or less prone to engage in particular financial behaviors.

Description of Studies

This dissertation examines the topic of individuals’ financial behavioral outcomes. Similar to Perry and Morris’ (2005) inquiry, the current study uses a self-reported measurement of financial behavior outcomes. All three studies within this dissertation refer to these outcomes as simply financial behaviors. First, the study looks at the frequency of money arguments within relationships and what factors, including partner’s financial behaviors, might influence these arguments. Following this direction, predictors of financial behaviors within one generation and across two generations are explored to determine what may actually impact financial behaviors which may lead to relationship discourse. Data were obtained from the National Longitudinal Survey of Youth 1979 (NLSY79) and the NLSY79 Child and Young Adult (1986-2008). The NLSY79 has been administered annually beginning in 1979, and biennially since 1994. The NLSY79 (1986-2008) is a separate survey in which data has been collected biennially since 1986 of all children born to NLSY79 female respondents.

Chapter Two explores the predictors of money arguments. It is well known that money is a reality that couples must deal with in their relationships, and that it may cause “anxiety because it is so tied to feelings of success, competence, safety, security, and acceptance in society” (Shapiro, 2007, p. 279). As a result, financial disagreements and pursuing arguments rank as one

of the most common areas of conflict for couples (Goodman, 1986; Regnier & Gengler, 2006;). However, the research related to the causes of money arguments is limited (Britt, Huston, & Durband, 2010). Therefore, this essay provides a context for understanding money arguments by conceptualizing the frequency of money arguments as being an output of financial behavior characteristics, human capital, and demographics, such as age and birth order. Economic game theory related to non-cooperative bargaining (Lundberg & Pollak, 1994) is used to provide a theoretical framework for the study. It is assumed that when couples argue about money, they are not operating from a joint utility function creating a non-cooperative bargaining marital situation. This study provides useful information to the financial planning and counseling fields for assisting couples in managing their financial relationships. An appropriate journal for submission of this paper is the *Journal of Financial Therapy*.

Once establishing the possible importance of individuals' financial behaviors on the frequency of money arguments, Chapter Three determines what factors may influence financial behaviors. Guided by gender role theory (Eagly, 1987), the second study conceptualizes that one's gender role attitudes and socialization characteristics are predictive of financial behaviors. Gender roles refer to the socially accepted set of social and behavioral norms for individuals based on their specific sex and culture (World Health Organization, 2009). "The attitudes that men and women hold toward appropriate gender roles have a significant influence on many aspects of marital and family dynamics" (Blee & Tickamyer, 1995, p. 21). Understanding the impact of one's gender roles may provide practitioners, especially within the financial therapy realm, important tools for counseling individuals and couples. The intended journal for publication of this paper is the *Journal of Financial Counseling and Planning*.

In Chapter Four, the intergenerational transmission of a mother's gender role attitudes and human capital to her children and their effect on her children's financial behaviors is examined. This study seeks to determine how these variables might be transferred across two generations and the resulting behaviors. Past research has shown that parents influence their children's attitudes about money (Jorgensen & Savia, 2010), and furthermore, that mothers' behaviors and attitudes are more influential (Clarke, Heaton, Israelson, & Eggett, 2005). An expanded theoretical framework of Becker's (1993) theory of human capital was utilized to explore this relationship. Establishing a relationship between mothers and their impact on their children's financial behaviors may provide prescriptions to policymakers to further the advancement of financial education for not only children, but parents also. *The Journal of Behavior Finance* is an appropriate journal for publication of this paper. Chapter Five concludes this dissertation with a summary of results from all three essays. Implications for this research are provided in the chapter.

References

- American Psychological Association (2004). As the tax deadline approaches Americans say money is number one cause of stress. Retrieved from www.apa.org/releases/moneystress.html
- Archuleta, K. L., & Grable, J. E. (2011). The future of financial planning and counseling: An introduction to financial therapy. In J. E. Grable, K. L. Archuleta, & R. R. Nazarinia (Eds.), *Financial planning and counseling scales* (pp. 33 – 59). New York, NY: Springer.
- Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis with special reference to education*, 3rd ed. Chicago and London: The University of Chicago Press.
- Blee, K. M., & Tickamyer, A. R. (1995). Racial differences in men's attitudes about women's gender roles. *Journal of Marriage and Family*, 57(1), 21-30.
- Britt, S. L., & Huston, S. J. (2012). The role of money arguments in marriage. *Journal of Family and Economic Issues*. doi:10.1007/S10834-012-9304-5
- Britt, S. L., Huston, S., & Durband, D. B. (2010). The determinants of money arguments between spouses. *The Journal of Financial Therapy*, 1(1), 42-60.
- Clarke, M. C., Heaton, M. B. Israelsen, C. L., & Eggett, D. L. (2005). The acquisition of family financial roles and responsibilities. *Family and Consumer Sciences Research Journal*, 33(4), 321-340.
- Eagly, A. H. (1987). *Sex differences in social behavior: A social-role interpretation*. Hillsdale, NJ: Erlbaum.
- Financial Planning Association (2011). What is financial planning? Retrieved from <http://www.fpanet.org/WhatisFinancialPlanning/>
- Goodman, M. (1986). Americans and their money: 1986. *Money*, 15(11), 159-166.

- Jorgensen, B. L., & Savia, J. (2010). Financial literacy of young adults: The importance of parental socialization. *Family Relations*, 59(4), 465-478.
- Lundberg, S., & Pollak, R. A. (1994). Noncooperative bargaining models of marriage. *The American Economic Review*, 84(2), 132-137.
- Maton, C. C., Maton, M., & Martin, W. M. (2010). Collaborating with a therapist: The why, who, what, and how. *Journal of Financial Planning*, 23(2), 62-70.
- McCormick, M. H. (2009). The effectiveness of youth financial education: A review of the literature. *Journal of Financial Counseling and Planning*, 20(1), 70-83.
- O'Neill, B., Sorhaindo, B., Xiao, J. J., & Garman, E. T. (2005). Negative health effects of financial stress. *Consumer Interests Annual*, 51, 260-262.
- Perry, V. G., & Morris, M. D. (2005). Who is in control? The role of self-perception, knowledge, and income in explaining consumer financial behavior. *The Journal of Consumer Affairs*, 39(2), 299-313.
- Regnier, P., & Gengler, A. (2006). Men women + money. *Money*, 35(4), 90-98.
- Shapiro, M. (2007). Money: A therapeutic tool for couples therapy. *Family Process*, 46(3), 279-291.
- World Health Organization (2009). What do we mean by “sex” and “gender”? Retrieved from <http://www.who.int/gender/whatisgender/en/index.html>

Chapter 2 - Spousal Money Arguments

Introduction

Many couples have problems expressing their emotions, and they find that arguing about money is easier than dealing with other interpersonal issues (Shapiro, 2007). Previous research has shown that financial issues are one of the main topics that couples argue about (Regnier & Gengler, 2006; Papp, Cummings, & Goeke-Morey, 2009). Money ranks above sex and in-laws as the most likely subject to incur arguments (Regnier & Gengler). In their study of 1,000 spouses, Regnier and Gengler found that approximately 70% of their survey respondents admitted to arguing about money. Papp et al. did not find money as the most frequent topic of marital conflict, but they did find that “compared to nonmoney issues, marital conflicts about money were more pervasive, problematic, and recurrent, and remained unresolved despite including more attempts at problem solving” (p. 91). Papp and associates indicated that financial decisions are likely to have been previously discussed by couples, but should be reviewed as the relationship matures, especially if couples begin to interact more negatively when discussing money than with other topics.

Several other researchers have documented the negative effects of money arguments within marriage. For instance, Dew (2009) noted that money arguments were the strongest determinant of divorce when compared to other types of arguments. The majority of couples (84%) reported that money created tension in their marriages, while 15% fought about money several times or more than once a month. Despite the negative effects of money arguments on the likelihood of divorce, money arguments appear to be even more predictive of relationship satisfaction than divorce (Britt & Huston, 2012), possibly indicating high occurrences of

unhappy relationships due to spousal arguments about money. Money is also a contentious topic among cohabiting couples. Relationship problems associated with financial issues contribute to the dissolution of cohabiting unions (Dew, 2011).

This study expands the literature base related to a prediction of money arguments by examining the relationships between the frequency of money arguments and one's financial behaviors, human capital, and various demographic variables, including birth order. Although several intra-household bargaining approaches have been used to explore spousal money arguments, the current study focuses on a non-cooperative bargaining approach. From a non-cooperative bargaining perspective (Lundberg & Pollak, 1994), spouses attempt to maximize their individual utilities without regards to the overall household utility. In other words, individuals are assumed to be concerned with the satisfaction that they personally derive from consuming a good or service. As discussed in the sections that follow, there is evidence to suggest that firstborns, those with certain financial behavioral characteristics, and those with higher human capital may have a preference toward maximizing individual utility and may therefore have a higher frequency of money arguments. This study attempts to answer the later part of the previous sentence by exploring if spouses who have a known preference for individual utility do indeed argue more about money.

Theoretical Framework and Related Literature

Economists have long struggled with the issue of how to apply unitary/single utility functions to household expenditures (Browning & Chiappori, 1998). The first major contribution in applying the unitary utility function to joint decision making was Samuelson's concept of a household welfare function (Samuelson, 1956). While useful, this utility function still relied on transferable preferences and the weighting of each member's utility. From both a theoretical and

empirical perspective, these assumptions can be problematic. The next breakthrough was made by Becker (1991) relying heavily on Gronau's (1973) work on the allocation of time within a family. At its heart, Becker's work borrows from the framework of a production function in which the family is cooperating to manufacture the greatest quantity of market and household goods to provide utility to the household (Becker, 1991). This work, while solving many mathematical issues associated with modeling a family's allocation of resources also relied on almost complete cooperation, low to no transaction costs, and universally positively intercorrelated utility functions among family members (Konrad & Lommerud, 2000). While undeniably mathematically elegant, Becker's solution may rely on assumptions too rigorous to accurately reflect many marital relationships. However, building on the work of Becker and Samuelson, game theorists have developed cooperative and non-cooperative bargaining models that can still stand the rigor of being proved mathematically and yet still more accurately capture the reality of many marriages.

Becker's (1991) analysis of marriage begins by examining the marriage market. Like any other market, if negotiations could occur without significant transaction costs and enforceable agreements could be negotiated, not only would the initial allocation of resources be determined by who marries whom, but also the distribution of resources throughout the life of the marriage could be efficiently determined at the outset of the marriage (Lundberg & Pollak, 1994). However, finding a mate is obviously a process with significant transaction costs and search costs, and marriage contracts are notoriously difficult to enforce. When the above conditions cannot be met, non-cooperative game theory can effectively capture the reality of the situation.

Unlike cooperative game theory, non-cooperative game theory makes no assumptions that a husband and wife can enter costless, binding, and enforceable agreements. This approach

focuses on self-enforcing agreements in which the solution is the Nash equilibrium (both parties get what resources they want). Such models do not assume or imply that all equilibria are Pareto optimal (i.e., when it is impossible to put one person in a better position by giving them more resources without putting someone else in a worse position) as does cooperative game theory (Lundberg & Pollak, 1994). The assumptions of traditional non-cooperative game theory do open the door to examining negotiations within marriage. Thus, the approach suggested by Lundberg and Pollak that manages to combine elements of cooperative with non-cooperative game theory may more accurately capture marriage. Lundberg and Pollak noted that in many marriage negotiations, both cooperative and non-cooperative, Nash equilibria can be supported. Pareto optimal outcomes can occur even without binding agreements as solutions to repeated games. They noted that because of the repetitive nature of interactions within any marriage there may well be a tendency towards cooperation. This tendency to be able to maintain a cooperative equilibria within a repeated interaction is strongly supported by both empirical and experimental work dealing with iterated prisoners' dilemma games: "if the prisoner's dilemma is repeated as a stage game forever, then it is well known that the cooperative outcome ("don't confess") is an equilibrium despite the inability of the players to make binding agreements" (Lundberg & Pollak, p. 134). Browning and Chiappori (1998) also demonstrated empirically that within marriage, cooperative outcomes can be sustained. However, in order for these outcomes to be sustained, each party must have a credible threat or a way to punish the partner that deviates from the cooperative outcome.

This study posits that disagreements about money that turn into arguments about money are an example of the parties disciplining one another for deviating from the cooperative equilibrium distribution of resources within a marriage. Therefore, it would be expected that

couples with more positive financial behaviors have more clearly delineated the cooperative equilibria resource distribution and thus recourse to the disciplining mechanism of verbal confrontation will be used less. Guided by the work of Lundberg and Pollak (1994) described above, and using control variables described below, the following model will be tested:

$$\textit{Frequency of money arguments} = f(\textit{financial behaviors, human capital, birth order, age})$$

Financial Behavior Characteristics

Despite women's advances in the work force, husbands and wives still conduct financial tasks along traditional lines where women manage the daily household finances and men handle the long-term planning (Regnier & Gengler, 2006). Subsequently, it is possible that money arguments will increase in frequency if men and women deviate from their traditional roles.

Despite women's independent access to money through employment, the decline of men's traditional role of the breadwinner, and the increase in cohabiting couples, inequalities in control over finances still exist (Vogler, Lyonette, & Wiggins, 2008). One source of financial conflict for couples is related to purchasing large expenditures. Women have typically been assigned to make domestic purchases and men to make purchasing decisions of technical items. Deviations from these traditional purchases can lead to conflict (Kirchler, 2011). Other financial behaviors, such as the overexpenditure of money and the blaming and hostility of these behaviors between family members, may also lead to conflict (Papp et al., 2009). Perceptions of spousal financial behaviors are oftentimes more important than actual behaviors. Respondents who perceived their partner's spending behaviors negatively were more likely to report lower satisfaction with their relationship (Britt, Grable, Nelson, & White, 2008).

According to their study of 133 married adults, Lawrence, Thomasson, Wozniak, and Prawitz (1993) found several financial behaviors positively related to the frequency of arguing

about money. Delaying tactics, apparel cost-cutting strategies, and do-it-yourself techniques were related to more frequent arguments. Among other behaviors, those respondents that put off purchasing needed services or who contacted creditors about late bills were more likely to argue. Several of these practices are similar to the financial behaviors used in the current study in order to conceptualize overall positive or negative financial behaviors. Referring back to the conceptual model, in addition to financial behaviors, human capital is also considered to influence the frequency of money arguments.

Human Capital

Attained human capital is comprised of those attributes in which individuals seek to optimize their utility through the attainment of higher levels of education and income (Becker, 1993). Higher incomes are associated with less frequent money arguments (Britt & Huston, 2012; Goodman, 1986). Well-educated individuals generally possess more effective communication skills which help reduce relationship stress (Amato & Previti, 2003), whereas lower levels of education and income may represent economic pressure and be used to predict marital conflicts (Dew & Yorgason, 2010). In contrast, in a sample of retirement age couples, Lawrence et al. (1993) found that disagreements about money exist regardless of income or education. Konrad and Lommerud (2000) suggested that spouses have an incentive to overinvest in their education, which may increase their income, and improve their bargaining power within their relationship. Spouses with greater bargaining power may be able to allocate additional resources to maximize individual utility. Consequently, it is reasonable to assume that working age couples with higher income and higher levels of education (i.e., those with higher attained human capital) may choose to allocate resources for individual purposes to further their utility in the threat point (i.e., money arguments).

In regards to endowed human capital, I.Q. has been shown to be an accurate proxy for endowed human capital, and a strong relationship between I.Q. and financial decision making exists (Finke, 2009). People with higher levels of endowed human capital are expected to maximize their individual utility functions and engage more frequently in money arguments. Based on non-cooperative game theory (Lundberg & Pollack, 1994), people with higher endowed human capital maintain more bargaining power and ability to influence the threat point. Consequently, according to a non-cooperative theoretical framework, individuals with higher endowed human capital argue more about money with their spouse in an attempt to allocate more resources to individual utility.

Birth Order and Age

Finally, birth order and age are thought to influence money arguments. A number of birth order studies have been conducted in economic, social, and psychological research with various results. Economic studies have found strong evidence that birth order has effects on income, educational attainment, and I.Q. Firstborns or earlier born children have higher educational attainment, higher earnings, and higher I.Q.'s than laterborn children (Black, Deveraux, & Salvanes, 2005; 2011). Black et al. (2005) observed a steady decline in children's education by birth order; a higher birth order had a significant and large negative effect on educational attainment. Furthermore, results showed that both laterborn women and men have lower full-time earnings.

Sulloway (1996) developed the "niche model of personality development" which suggests that firstborn children have the first choice of niche and strive to impress their parents in traditional ways by assuming responsibility and other achievements. His model proposed five factors of personality dimensions: Surgency, Agreeableness, Conscientiousness, Emotional

Stability, and Openness. Sulloway found that firstborn status was positively correlated with Surgency and Conscientiousness and negatively correlated with Agreeableness, Emotional Stability, and Openness while controlling for sex, age, number of siblings, and socioeconomic status. Michalski and Shackelford (2002) replicated Sulloway's study with contradicting results, with the exception of Agreeableness (i.e., firstborn children are less agreeable) which was also found to have a negative relationship with firstborn status. Adler (1931) proposed the dethronement theory in which firstborns are afraid of being dethroned by their younger siblings and will fight to maintain their authoritative position in the family. The firstborns may want to control their siblings through the use of effective argument (Rodgers, 2003). In fact, Rodgers hypothesized that firstborns and only children would report more argumentativeness than laterborns. Results indicated that firstborns reported significantly greater argumentativeness than did the youngest children. These results suggest that firstborn children will report more spousal money arguments than laterborn children.

Age has been determined to be an important indicator of money arguments (Goodman, 1986; Lawrence et al., 1993). In his study of 2,555 randomly sampled adults who have the role of the families' chief financial decision makers, Goodman found that as age increased, respondents argued more about nonmonetary issues than financial ones. Utilizing a smaller sample of 133 older married adults, Lawrence et al. (1993) determined that the frequency of arguing about money decreased significantly as age increased.

Based on the research literature and proposed theoretical framework, the following hypotheses will be tested:

H₁: Spouses with more negative financial behaviors argue more frequently about money.

H₂: Spouses with higher attained and endowed human capital argue more frequently about money.

H₃: Firstborns argue more frequently about money.

H₄: Younger spouses argue more frequently about money.

Methods

Respondent data was retrieved from the National Longitudinal Survey of Child/Young Adult (1986-2008) administration which profiles the development of all children born to the National Longitudinal Survey of Youth 1979 (NLSY79) cohort female respondents. This child survey, conducted biennially, includes comprehensive respondent data, coupled with longitudinal information on the family background, education, employment histories, and economic well-being of their NLSY79 mothers. This data set provides variables to measure money arguments, financial behaviors, human capital, and various demographic characteristics, making it an appropriate data set for this study.

Dependent Variable

This study hypothesized that the actual causes and frequencies of arguments about money are, in fact, an unobservable latent variable indicating many facets and issues in the underlying relationship. When dealing with a latent variable, a researcher must use data that is observable to draw conclusions about the underlying latent variable. As Long (1997) argued in his seminal work on limited and dichotomous dependent variables, logit is often appropriate when a researcher suspects they are dealing with a latent variable. Long argued that if logistic regression is appropriate for a particular research question, that is evidence that one is dealing with a latent variable.

In specifying this model, this study recognized the observed limited dependent variable, frequency of money arguments. This variable was reported on a Likert scale ranging from 1 (often argues about money) to 4 (never argues about money). However, from an econometric

standpoint, this is arguably not a ratio level of measurement. One respondent's definition of frequent might meet another respondent's definition of sometimes. Ratio data relies on equal variance between the units for all respondents. In this study, this issue is dealt with by recoding the dependent variable as a 0, 1 dichotomous variable. Respondents reporting to often (1) or sometimes (2) argue about money were recoded as 1, while those respondents reporting to hardly ever (3) or never (4) argue about money were recoded as 0.

Independent Variables

Financial Behaviors

Financial behaviors were measured by a summation of a three-item scale based on the following questions: (a) How often do you/does your household put off buying something you need, such as food, clothing, medical care, or housing because you don't have money?; (b) During the past 12 months, how much difficulty did you/did your household have paying bills?; and (c) Thinking about the end of each month over the past 12 months, how much money did you/did your household have left over? The first two questions allowed for five responses and the last question allowed for four responses, resulting in a possible range of scores of 3 to 14. The responses were coded so that a higher score represented more negative financial behaviors.

Human Capital

Intelligence Quotient (I.Q.) was used to measure each respondent's endowed human capital. I.Q. was measured continuously from the results of the 1986 administration of the Peabody Picture Vocabulary Test, Revised (PPVT-R). According to the NLSY79 Child and Young Adult Data User's Guide (2009), the PPVT-R is one of the "best-established indicators of verbal intelligence and scholastic aptitude across childhood" (p. 114). Due to evidence of skewness, I.Q. was transformed to a logarithm.

Respondents' education and income were used as proxies to measure the respondents' attained human capital. Both variables were measured on a continuous variable basis using data from the 2008 administration of the NLSY Child/Young Adult (1986-2008) survey. For ease of interpretation, income was divided by 1,000.

Demographics

Age was measured continuously. Applying the logic of previous researchers that firstborns argue more than laterborns (Michalski & Shackelford, 2002; Rodgers, 2003; Sulloway, 1996) and following the same analysis (Michalski & Shackelford; Sulloway), birth order was coded by combining the NLSY 1986-2008 cohort categories of secondborn or higher to create two categories with firstborn coded as 1 and laterborn coded as 0.

As explained above, the dependent variable was unobservable; thus ordinary least squares regression would be inappropriate. It is assumed that the error terms are logistic and thus a logit model is appropriate. The model is specified as follows, where:

$\beta_{\Sigma finbeh}$ = Sum of financial behaviors,

β_{IQ} = I.Q.,

β_{ed} = Education,

β_{inc} = Income,

β_{age} = Age, and

β_{bthord} = Birth order.

Thus,

$$\text{The Frequency of Money Arguments} = \beta + \beta_{\Sigma finbeh} + \beta_{IQ} + \beta_{ed} + \beta_{inc} + \beta_{age} + \beta_{bthord} + \varepsilon_i$$

The frequency of money arguments was measured as a function of one's summation of financial behaviors, I.Q., education, income, age, and birth order. According to the correlation matrix, no multicollinearity issues were found.

Results

Descriptive Statistics

Results from the descriptive statistics analysis (Table 2.1) showed an approximate 44% - 56% split between those respondents who often or sometimes argue about money and those who hardly ever or never argue about money. With a range from 3 to 14, the mean score for financial behaviors was 6.68. The mean I.Q. for respondents was 3.99 (range = 1.6 - 4.95). Average level of education was approximately 13 years (range = 7 - 20 years), and the mean income for respondents was \$28,362 (range = \$0 - \$125,000). The sample consisted of approximately 52% males and 48% females with an average age of 27 years (range = 18 - 35). Fifty-two percent of respondents were firstborns and 48% were laterborns.

Table 2.1 Descriptive Statistics of the Sample Essay 1***N = 851***

Variable		%
Money Arguments		
1 = Often/Sometimes	377	44.30%
0 = Hardly ever/Never	474	55.70%
Sum of Negative Financial Behaviors		
Mean (Range)	6.68	(3 - 14)
I.Q.		
Mean (Range)	3.99	(1.61 - 4.95)
Education		
Mean (Range)	12.92	(7 - 20)
Income		
Mean (Range)	\$28,362	(\$0 - \$125,000)
Age		
Mean (Range)	27.29	(18 - 35)
Birth Order		
1 = Firstborn		52.17%
0 = Laterborn		47.83%
Sex		
1 = Male		51.82%
0 = Female		48.18%

Regression

In order to predict the likelihood of couples often or sometimes arguing about money or hardly ever or never arguing about money, a logistic regression was developed (Table 2.2). The Log Likelihood Ratio (80.94) was statistically significant for the model at the $p < .001$ level.

Table 2.2 Logistic Regression – Money Arguments Essay 1*N* = 851

Variable	Coefficient	Odds Ratio	Standardized beta estimate
	β	O. R.	β
Intercept	-2.57**		
Sum of negative financial behaviors	0.24***	1.28	0.34
Log I.Q.	-0.21	0.81	-0.07
Education	-0.01	1.00	-0.01
Income by 1,000	0.01**	1.01	0.14
Age	0.06	1.06	0.10
Male	-0.07	0.94	-0.02
Firstborn	-0.63***	0.54	-0.17

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

Results from the regression model showed that one's financial behaviors, income, and birth order were statistically significant predictors of their frequency of money arguments. Respondent's financial behaviors were the largest contributor to the model with a standardized beta estimate of 0.34. Respondents with more negative financial behaviors were 28% more likely to argue with their spouse about money ($p < .001$). Birth order was the second largest contributor to the model ($\beta = -0.17$). According to the regression, laterborns were more likely to argue about money (O. R. = 0.54, $p < .001$). Finally, when respondents' income ($\beta = 0.14$) increased by \$1,000, couples were 1% more likely to argue about money ($p < .01$). One's I.Q., education, age, and sex were not found to be statistically significant in predicting the frequency of money arguments.

Discussion

The current study was conceptualized to test the hypotheses that the frequency of spousal money arguments is influenced by financial behaviors, human capital, birth order, and age. Past research literature indicates that several of these variables may predict the frequency of money arguments (e. g., Lawrence et al., 1993; Goodman, 1986).

Hypothesis One was confirmed: Spouses with more negative financial behaviors were more likely to argue about money. Lawrence et al. (1993) used similar financial behaviors related to putting off buying certain items and services and difficulty paying bills. Confirming Lawrence et al.'s findings, the current study also found a significant association between negative financial behaviors and the frequency of money arguments. Arguably, this finding is not surprising. If spouses are engaged in financially responsible behaviors, it would be expected they are acting as a household maximizing unit, which leads to less disagreements.

According to Hypothesis Two, the higher one's attained and endowed human capital, the more frequently one argues about money. This hypothesis was partially confirmed as the only component of human capital found to predict the frequency of money arguments was income. For working respondents, the higher their income, the more likely couples were found to argue about money. This may be interpreted to mean that when there are higher levels of income, more and larger financial decisions may ensue which result in additional negotiations and/or disagreements about money. As this occurs, spouses may employ unitary utility maximizing behavior which creates a non-cooperative marital situation and uses money arguments as the threat point. This situation may be in comparison to having just enough money to meet the household's basic needs which creates a cooperative household in which decisions have to be household maximizing.

Similar to Lawrence et al. (1993), education as a form of attained human capital was not found to influence the frequency of money arguments. In addition, endowed human capital as measured by I.Q. was not statistically significant to the model.

Based on the past research literature, the current study hypothesized that firstborns were more likely to argue about money (e.g., Adler, 1931; Michalski & Shackelford, 2002; Rodgers, 2003; Sulloway, 1996). In this study, birth order was found to be statistically significant; Hypothesis Three was rejected. The opposite was determined: Laterborns were shown to engage in more frequent money arguments than firstborns. This counterintuitive finding, which runs contrary to prior research, is noteworthy. Two possible explanations present themselves. First, Sulloway (1996) relied on older data gathered when the average family size was larger and being an only child was relatively rare. In fact, Sulloway used data from Ernst and Angst's (1983) study which was a meta-analysis of previous birth order studies. These studies would presently be about 32 to 66 years old (Harris, 2002). Although Rodgers (2003) and Michalski and Shackelford (2002) found similar results as Sulloway related to argumentativeness and birth order, their sample sizes were relatively small (207 and 438, respectively). This study relied on more modern data (1986 to 2008) gathered when family size is generally smaller. The possibility exists that at the aggregate level, the change in average family size is changing the significance of birth order. As was noted above, being a firstborn child is also highly correlated with other characteristics that are correlated with more positive financial behaviors. These other characteristics may be overwhelming the impact of birth order. For example, though not significant in this study, this study showed that higher I.Q.'s are associated with fewer arguments over money. As higher I.Q. is also associated with higher birth order (Black et al., 2005; 2011),

perhaps the impact of higher I.Q. is cancelling out the increased propensity of firstborns to argue. Whatever the case, this finding warrants further investigation in future studies.

Although age has been found to have a positive association with the frequency of money arguments (Goodman, 1986; Lawrence et al., 1993), this variable was not significant in predicting money arguments in the current study. One possible explanation for this finding is that in this particular study the ages of the respondents did not vary greatly. The respondents' ages range from their teens to their 30's. Perhaps a data set that allowed for more variance in age of the respondents would have produced results that were consistent with other studies. An interesting focus of analysis for a future study might be to attempt to determine whether age functions as a linear variable with a decreased probability of arguing for every year of age or whether age produces an intercept where after a certain threshold the tendency to argue over money falls off. For the purpose of this study, Hypothesis Four must also be rejected.

The results of the regression showed that several of the hypothesized variables were predictors of the frequency of money arguments, however, as discussed, not all had the association expected. Overall, the model utilized the theoretical framework indicating that the frequency of money arguments is associated with financial behavior and income.

Implications

Research related to possible causes of spousal money arguments is limited (Britt et al., 2010). The goal of the current study was to further this span of knowledge by examining various potential predictors of the frequency of money arguments. This was accomplished by conceptualizing money arguments as a threat point in marriage according to Lundberg and Pollak's (1994) theory of non-cooperative game theory. Such a theoretical framework may provide a mechanism for other researchers and practitioners to further investigate disagreements

about money for couples. A benefit of having additional knowledge of the cause of money disagreements exists for practitioners and educators who address couples' money issues (Dew, 2008). As Papp et al. (2009) noted, raising awareness possibly even before spouses combined their finances, could prevent money related conflicts later in their marriage. In this study, financial behaviors, income, and birth order were found to possibly provide insight for the integrated disciplines of financial therapy and financial planning.

Financial behaviors are often linked to emotional meanings about money, such as self-worth, security, and respect (Shapiro, 2007). "Thus, when partners have different meanings for money, the disagreements may be strongly related to dissolution because they tap deep emotional issues" (Dew, 2011, p. 181). Financial counselors and planners may not be equipped to assist clients with these types of issues. Therefore, financial therapy may be beneficial for couples before they make any major financial decisions in order to determine what emotional links may exist related to their financial behaviors, whether negative or positive. Financial therapy can be defined as "the integration of cognitive, emotional, behavioral, relational, and economic aspects that promote financial health" (Financial Therapy Association, 2011, p.1). Exploring each partner's financial behaviors and any underlying causes for these behaviors may aid in establishing a joint utility maximizing marital situation and lead to less contention about money matters. Knowing that specific financial behaviors may be a cause for dissension within a marriage, may help financial therapists to identify those variables that lead to such behaviors. Perhaps, even raising clients' awareness of their own motivations could reduce future negative behaviors.

Interesting and helpful to financial counselors and planners is the finding that higher respondent's income leads to more frequent money arguments. When counseling or establishing

a plan for couples, the practitioner should take into consideration not only the economic aspects related to income, but possibly the function that money plays within the household. Is the couple maximizing the household utility or, due to the fact that there is more money available, are they actually seeking to maximize their own utility? In an actual practice, it is quite likely that a financial planner will see instances of both behaviors. Therefore, being aware of clients' possible motivations will increase the planner's ability to effectively assist their clients.

Results also indicate that financial professionals may want to consider the birth order of their clients. Although this is a new concept to the area of financial planning, the study suggests that this information may help professionals in identifying certain individuals and their propensity to create conflict within their relationships.

Overall, collaboration between financial therapists and financial planners is necessary in order to fully benefit many clients. Planners and therapists have different sets of skills and areas of experience and expertise, which when integrated improve the planning process (Maton, Maton, & Martin, 2010). "We position the planner/financial therapist collaboration as a way for clients to learn more about themselves and their money" (Maton et al., p. 65). Due to this requirement for close collaboration between financial planners and financial therapists, studies that shed light on the motivations of clients, and the predictors for these motivations will be useful to both financial planners and therapists.

Limitations and Recommendations

While this data set is valuable in that it allows a researcher to capture some behaviors, it does have limitations. First, other data sets may allow for a more defined measurement of financial behaviors. The current study uses responses to the following three questions in order to assess financial behaviors: (a) How often do you/does your household put off buying something

you need, such as food, clothing, medical care, or housing because you don't have money?; (b) During the past 12 months, how much difficulty did you/did your household have paying bills?; and (c) Thinking about the end of each month over the past 12 months, how much money did you/did your household have left over? Other variables may give more clear insight into one's actual financial behaviors. In addition, these responses are self-reported, which may cause sample bias.

When assessing birth order, the data does not account for the fact that many respondents may come from blended families, and family size varies. If so, this may impact the birth order effect differently. In addition, the birth order for each individual spouse may have an influence on the results of the study. These considerations provide interesting areas for further research.

These data only measure the frequency of money arguments and do not consider the severity of these arguments. Frequent arguments of limited duration that do not necessarily place serious stress on a marriage are obviously a quite different matter than infrequent arguments that seriously stress a marriage and may leave one party contemplating utilizing a serious threat point. Perhaps other data sets may provide more detailed information related to money arguments. These responses are also self-reported, which may bias the sample.

An additional limitation of this study is that the regression models only included respondents who provided complete data. Those individuals who had missing data were not included in the models and may have reported differently, leading to outcomes not consistent with this study. Finally, the fact that the data for the outcome variable use Likert scales which do not produce true ratio level data has been discussed above. These type of scales inject some imprecision into data when a researcher is using regression analysis.

Although this study has limitations, it definitely provides some other areas for further research. This study indicates that further analysis of birth order data is warranted to determine whether changes in average family size and child rearing practices call into question prior beliefs about birth order based on older data. This study also has another finding that would be of great significance to financial planners and financial therapists: the fact that increased levels of income tend to lead to an increase of arguing over money indicates that as clients move towards their financial goals and command greater resources, professionals must be prepared for their clients' interactions over money to become more contentious. As couples' income increases, introducing them into financial planning may actually be more conducive to marital satisfaction. In addition, mandatory premarital counseling may be a consideration to reduce spousal money arguments. This study provides useful information to practitioners and policymakers and opens up intriguing areas of further research.

References

- Adler, A. (1931). *What life should mean to you*. Boston: Little, Brown, and Company.
- Amato, P. R., & Previti, D. (2003). People's reasons for divorcing: Gender, social class, the life course, and adjustment. *Journal of Family Issues*, 24(5), 602-626.
- Becker, G. S. (1991) *A treatise on the family*. Cambridge, MA: Harvard University Press.
- Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis with special reference to education*, 3rd ed. Chicago and London: The University of Chicago Press.
- Black, S. E., Devereux, P. J., & Salvanes, K. G. (2005). The more the merrier? The effect of family size and birth order on children's education. *The Quarterly Journal of Economics*, 120(2), 669-700.
- Black, S. E., Devereux, P. J., & Salvanes, K. G. (2011). Older and wiser? Birth order and IQ of young men. *CESifo Economic Studies*, 57(1), 103-120.
- Britt, S., Grable, J. E., Nelson Goff, B. S., & White, M. (2008). The influence of perceived spending behaviors on relationship satisfaction. *Financial Counseling and Planning*, 19(1), 31-43.
- Britt, S. L., & Huston, S. J. (2012). The role of money arguments in marriage. *Journal of Family and Economic Issues*. doi: 10.1007/S10834-012-9304-5
- Browning, M., & Chiappori, P. (1998). Efficient intra-household allocations: A general characterization and some tests. *Econometrica*, 66, 1241-1278.
- Dew, J. (2009). The gendered meanings of assets for divorce. *Journal of Family and Economic Issues*, 30(1), 20-31.
- Dew, J. (2011). Financial issues and relationship outcomes among cohabiting individuals. *Family Relations*, 60(2), 178-190.

- Dew, J., & Yorgason, J. (2010). Economic pressure and marital conflict in retirement-aged couples. *Journal of Family Issues*, 31(2), 164-188.
- Ernst, C., & Angst, J. (1983). *Birth order: Facts and fiction concerning its influence on personality: A survey of the literature, 1946-1980, followed by a study of a representative young adult population*. Berlin and New York: Springer-Verlag.
- Financial Therapy Association. (2011). Retrieved from <http://www.financialtherapyassociation.org/>
- Goodman, M. (1986). Americans and their money: 1986. *Money*, 15(11), 159-166.
- Gronau, R. (1973). The intrafamily allocation of time: The value of housewives' time. *American Economic Review*, 63, 634-651.
- Harris, J. R. (2002). The mystery of *Born to Rebel*: Sulloway's re-analysis of birth order data. Retrieved from <https://www.judithrichharris/tna/birth-order/index.htm>
- Kirchler, E., Rodler, C., Holzl, E., & Meier, K., (2001). *Conflict and decision making in close relationships*. Hove: The Psychology Press.
- Konrad, K. A., & Lommerud, K. E. (2000). The bargaining family revisited. *The Canadian Journal of Economics*, 33(2), 471-487.
- Lawrence, F. C., Thomasson, R. H., Wozniak, P. J., & Prawitz, A. D. (1993). Factors relating to spousal financial arguments. *Financial Counseling and Planning*, 4, 85- 94.
- Long, J. S. (1997). *Regression models for categorical and limited dependent variables*. Thousand Oaks, CA: Sage.
- Lundberg, S., & Pollak, R. A. (1994). Noncooperative bargaining models of marriage. *The American Economic Review*, 84(2), 132-137.

- Maton, C. C., Maton, M., & Martin, W. M. (2010). Collaborating with a therapist: The why, who, what, and how. *Journal of Financial Planning*, 23(2), 62-70.
- Michalski, R. L., & Shackelford, T. K. (2002). An attempted replication of the relationships between birth order and personality. *Journal of Research in Personality*, 36, 182-188.
- NLSY Child and Young Adult Data User's Guide (2009). Retrieved from <http://www.nlsinfo.org/usersvc/Child-Young-Adult/2004ChildYA-DataUsersGuide.pdf>
- Papp, L. M., Cummings, E. M., & Goeke-Morey, M. C. (2009). For richer, for poorer: Money as a topic of marital conflict in the home. *Family Relations*, 58(1), 91-103.
- Regnier, P., & Gengler, A. (2006). Men women + money. *Money*, 35(4), 90-98.
- Rodgers, M. F. (2003). *The influence of birth order on verbal aggressiveness and argumentativeness*. Unpublished manuscript, Department of Communication Studies, West Virginia University, Morgantown, West Virginia.
- Samuelson, P. A. (1956). Social indifference curves. *Quarterly Journal of Economics*, 70(1), 1-22.
- Shapiro, M. (2007). Money: A tool for couples therapy therapeutic. *Family Process*, 46(3), 279-291.
- Sulloway, F. J. (1996). *Born to rebel*. New York: Pantheon.
- Vogler, C., Lyonette, C. & Wiggins, R. D. (2008). Money, power and spending decisions in intimate relationships. *The Sociological Review*, 56(1), 117-143.

Chapter 3 - The Influence of Gender Attitudes and Socialization on Financial Behaviors

Introduction

“Women face a variety of financial issues and challenges that either aren’t experienced by men, or aren’t experienced to the same degree” (Anthes & Most, 2000, p. 130). Given these challenges, women especially need to know how to navigate today’s complex financial environment (Anthes & Most). National statistics reveal that the need for women to be involved in financial decisions is vitally important. Consider the following: (a) According to the Social Security Administration, average life expectancy for women is 81 years versus 73 years for men; (b) The U.S. Census states that the average age of widowhood for women is 55 years old; and (c) Women were expected to own half of the wealth in the United States by the year 2011 (Women & Co., 2009).

These facts suggest that women, like men, face a multitude of financial issues and challenges; however, it is oftentimes more difficult for women than men to succeed in their personal money management and attainment of financial independence. Historically, women have been financially dependent on men, and changing this attitude and women’s relationship with money needs to be developed in order for women to control money rather than money controlling them (Anthes & Most, 2000). Bernasek and Bajtelsmit (2002) found that although men have traditionally been more likely than women to make household savings and investment decisions, women’s involvement has been increasing.

Over the last two decades, social scientists and economists have contributed considerable attention to the area of household economy. Researchers have shown interest in the question of how household members organize and manage their financial resources, which has proven to be

a problematic and complex task (Burgoyne, 1990; Burgoyne, Clarke, Reibstein, & Edmunds, 2006; Pahl, 1980; Vogler & Pahl, 1994). These studies have found financial control and access to monetary resources in marriages to be highly linked to gender, where women have less control over household finances and access to personal spending money. In addition, Anthes and Most (2000) found that although men and women share some of the basic money management issues, they may often view them in different ways. For example, women are more anxious about their financial future and how to secure it, and may face more challenges than men. Included in these challenges are the facts that women earn less money than men, are less prepared for retirement, and poorer in retirement than men. To further combat the issue of retirement, women live longer than men. Additionally, women are more intimidated about financial issues and are more conservative than men in their investment decisions (Anthes & Most). These findings relate to the higher prevalence of financial deprivation among women.

With the numerous financial challenges and decisions that face women today, this study will examine the possible effects of gender role attitudes (not merely gender differences) on women's financial behaviors. Although this study emphasizes women's financial behaviors, the study seeks to expand the literature determining how gender role attitudes influence women's and men's financial behaviors.

Theoretical Framework and Related Literature

Theories of human behavior from psychology, sociology, and economics have been used to guide the study of financial behaviors. Of these theories, socialization theory and role theory consider the effect of gender role attitudes on human behavior, and therefore, financial behaviors. Socialization is a process that involves the transmission of norms, attitudes, motivations, and behaviors to individuals from various sources, including formal agents (e.g.,

family or school) and informal agents (e.g., mass media or peers) (Hira, 1997). Socialization theory furthermore posits that gender role perceptions are dependent on the fulfillment of social roles. Following this perception that gender roles are based on socialization, Eagly (1987) developed the social-role theory of sex differences in social behavior from her own research on sex differences and gender stereotypes and from other social psychologists' studies (e.g., Deaux, 1976; Henley, 1977). The underlying emphasis of social-role theory is that gender roles directly influence stereotypic sex differences with the sexes distributed into specific social roles indirectly because of attitudes about male and female characteristics.

According to social-role theory, human behavior is guided by attitudes held by an individual and other people and "roles consist of a set of rules or norms that function as plans or blueprints to guide behavior" (Ozmete & Hira, 2011, p. 393). Specifically, people act according to socially defined categories (e.g., mother, father, and teacher). In close relation to social-role theory are gender roles and the underlying theory they emphasize. Gender role theory suggests that non-physical differences between boys and girls are a product of socialization; children learn appropriate behavior from the family and culture. These gender roles lead to gender stereotypes, such as men being considered the financial providers and women being viewed as caretakers. In fact, past studies have shown that women, in general, do have less financial knowledge, have more financial concerns, and are less confident about their financial situation as well as have more traditional gender roles compared to men (Hira & Mugenda, 2000). Furthermore, role theory emphasizes that in order to change behavior, one must change roles, and these roles influence beliefs and attitudes (Ozmete & Hira, 2011). In order to change financial behavior, women's gender role beliefs and attitudes must be changed.

Role theory, specifically gender role theory (Eagly, 1987), framed the design of this study. As shown in Figure 3.1, financial behaviors are conceptualized as a function of one's gender role attitudes and socialization characteristics. Previous literature has also found some connection between gender role theory and financial behaviors as detailed below.

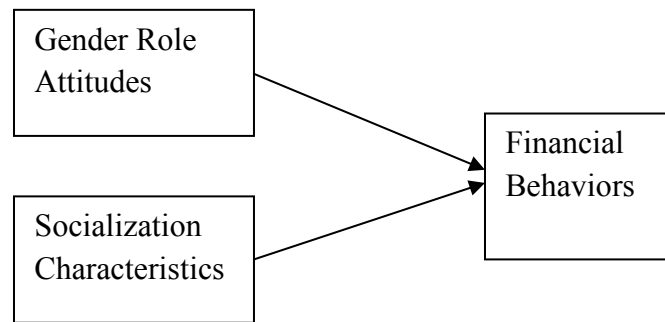


Figure 3.1 Conceptual Framework of Financial Behaviors

Financial Behaviors

Hira and Mugenda (2000) found that differences do exist between men and women and how they perceive financial issues and their financial behaviors. When compared with men, Hira and Mugenda concluded that women are less likely to let financial concerns interfere with their personal relationships; however, they are more likely to let these concerns affect their work performance. Women are also more likely than men to use shopping as a means of celebration, have less sales resistance, buy things they do not need, and make unplanned purchases. These spending behaviors create chaos in their lives. According to Hira and Mugenda, women tend to feel less secure about their financial situation, including their financial emergency preparedness, their level of savings, and their ability to meet long-term goals when compared with their male counterparts. Using a sample of college students, Hayhoe, Leach, Turner, Bruin, and Lawrence (2000) found that gender differences existed in credit card purchasing behaviors, financial practices, and credit attitudes. Female students used their credit cards more to purchase clothing,

while males purchased more electronics, entertainment, and food away from home. In addition, female students were more likely than male students to use positive financial practices such as keeping a budget, shopping with a list, keeping bills and receipts, planning spending, and saving regularly.

Several studies have established the existence of gender differences in investing and risk-taking (Bajtelsmit & Bernasek, 1996; Eckel & Grossman, 2002; Grable, 2000). Strong gender-based risk preferences regarding financial decisions about business practices and investments have been observed with males showing a greater willingness to take risks (Miller & Stark, 2002). Since women tend to be more conservative investors, they may see a negative effect on their investment returns. Anthes and Most (2000) noted that a Charles Schwab study of clients' total investment portfolios found that 73% of women owned stocks compared to 86% of men. In addition, 26% of women owned low-risk certificates of deposit, versus just 18% of men. Based on a review of the literature, men and women engage in different financial behaviors and have different perceptions of financial issues. These differences may be accountable to their gender and their attitudes about the roles they accepted based on their gender.

Gender Role Attitudes

Gender roles are “shared expectations (about appropriate qualities and behaviors) that apply to individuals on the basis of their socially identified gender” (Eagly, 1987, p.12). The attitudes about these roles typically are considered as traditional or nontraditional, where traditional gender roles are those which meet the expectations of differing roles for men and women (Firestone, Harris, & Lambert, 1999). According to Eagly (1987), a division of labor exists between the sexes which leads to sex-typed social behavior. This division of labor is determined by the gender stereotypes in which people believe that women are more communal

and men are more agentic. Communal qualities refer to being selfless, having concern for others, and desiring to have relationships with others. Agentic qualities include self-assertion, self-expansion, and the urge to master (Bakan, 1966). The social-role interpretation perceives that this female stereotype is derived from the domestic role and the male stereotype from men's roles in society and the economy through employment. This division of labor shapes gender-role expectations for women to act communally and men agentially, which results in stereotypic behavior and furthermore, sex differences in social behavior.

This division of labor also manifests itself in sex-related beliefs and skills. Based on the specific roles occupied by men, they are considered to have higher status and authority than the roles occupied by women which is oftentimes not only apparent in the employment arena, but also in the household (Eagley, 1987). Men may be more systematic in decision making and concerned with goal setting. Also, they are more competitive within their work environment and are emotionally detached from their co-workers. Women, on the other hand, are "multi-taskers" with little regards for setting specific goals or requiring feedback on their achievements. They are also more cooperative within the family context. Therefore, along with gender-role expectations, sex-typed skills and beliefs are influenced by the division of labor between the sexes (Eagly).

When socialization theory is used in financial behavior research, financial socialization is described as "the process of acquiring and developing values, attitudes, standards, norms, knowledge, and behaviors that contribute to the financial viability and well-being of the individual" (Danes, 1994, p.128). Evidence supports that gender differences in financial management are because of differential gender socialization (Ozmete & Hira, 2011).

Further supporting gender role theory and that children are a product of socialization, the Dreyfus Gender Investment Comparison Survey (as reported by Anthes & Most, 2000) found that parents treat sons and daughters differently concerning money; sons are encouraged to start earning money at a younger age (13) than girls (16-18), and twice as many sons as daughters were encouraged by their parents to save. To further support this inequality, Newcomb and Rabow's (1999) study of gender and money found: (a) Parents' expectations regarding money for their sons and daughters differs dramatically, with sons expected to work and save, be introduced to family finances, and receive less support from families; (b) Men believe they have greater financial knowledge than females; (c) Men felt more positive about money and others that make money; (d) Men also indicated that those who earn money are rational, responsible, and attractive; (e) Money provides men with self-worth and control; (f) Men envy those who make a substantial amount of money, where women found them to be immoral and intimidating; (g) Women had a greater fear of finances and were more confused about investments; and (h) Males desire earnings more than women and desire financial dependence less. These differential expectations and behaviors establish different money tracks for sons and daughters. "Growing up on these different tracks leaves a legacy of attitudes, beliefs, and behaviors that differentiate men from women" (Newcomb & Rabow, 1999, p. 867). Furthermore, the authors stated that these differences may handicap women. The above data supports the implication that gender role attitudes do differ between men and women.

Socialization Characteristics

Several demographic factors known to influence financial behaviors include sex, age, race/ethnicity, income, and marital status. Utilizing their online financial self-assessment tool—the Financial Fitness Quiz—O'Neill and Xiao (2006) found that the five most often performed

financial practices involved having a checking account to pay bills, having enough money each month to pay household expenses, having insurance to cover big unexpected expenses, comparison shopping for major purchases, and keeping organized financial records. Not only did males have higher mean scores than females on the Financial Fitness Quiz, but older respondents reported having better financial practices than younger respondents. O'Neill and Xiao also determined that financial practices existed according to racial differences: Asian respondents had the highest average scores followed by Whites, Native Americans/Others, African-Americans, and Hispanics. In their study of college students, Grable and Joo (2006) also found that African-American students portrayed less desirable financial behaviors. Specifically, African-American students in their sample carried higher credit card balances and displayed less desirable financial behaviors than non-Hispanic White students.

According to Sunden and Surette (1998), marital status affects retirement investment decisions. They found that among single women, single men, married women, and married men, that married women were least likely to have a defined contribution/employee managed retirement plan. Past studies have shown how a woman's age, education, and income affect her financial behaviors. O'Neill and Xiao's (2006) Financial Fitness Quiz determined that respondents with higher levels of education and income reported better financial practices. An established relationship also exists between socioeconomic status and positive financial behaviors (Perry & Morris, 2005). Higher socioeconomic status, in addition to older age and contributing a higher proportion to household income, is associated with better perceptions of one's financial situation (Malone, Stewart, Wilson, & Korsching, 2010). However, such as with several other demographic characteristics, much of the research related to women specifically concentrates on the study of the relationship between these variables and risk tolerance and/or

retirement planning. According to Joo and Pauwels (2002), women with higher levels of education and higher income were more confident about their retirement. Women with lower levels of risk aversion also displayed more retirement confidence.

Bernasek and Bajtelsmit (2002) found that women's involvement in household financial decisions increases with their share of household income and their formal financial education, while involvement decreased when spouse's share of household income and formal financial education increases. Bernasek and Bajtelsmit's study considered household financial decisions regarding saving and investment decisions. The current study seeks to expand the understanding of attitudinal and socialization characteristics as determinants of financial behaviors related to everyday financial matters.

Specific hypotheses for the current study were based on the research regarding role and socialization theory. Utilizing this theoretical framework, the primary purpose of this study was to determine the influence of gender role attitudes, sex, age, race, income, and marital status on men and women's financial behaviors. The following hypotheses were used:

H₁: Nontraditional gender role attitudes have a statistically positive association with financial behaviors.

H₂: Socialization characteristics, including sex, age, race, income, and marital status will influence financial behaviors.

Methods

Respondent data were retrieved from the National Longitudinal Survey of Child/Young Adult (1986-2008) cohort. This sample consists of all children born to NLSY79 female respondents. The child survey, conducted biennially, provides comprehensive child data. In addition, longitudinal information on the family background on family characteristics is reported.

By providing extensive data related to the respondents' attitudes towards gender roles, responses to certain measurements of financial behaviors, and demographic characteristics, the NLSY79 Child/Young Adult survey is an ideal data set for this study.

Dependent Variables

The NLSY data captures three financial behaviors used in this study. The three behaviors are: (a) How often do you/does your household put off buying something you need, such as food, clothing, medical care, or housing because you don't have money?; (b) During the past 12 months, how much difficulty did you/did your household have paying bills?; and (c) Thinking about the end of each month over the past 12 months, how much money did you/did your household have left over?. The questions (a) and (b) above were coded 1 through 5 and question (c) was coded 1 through 4 with higher scores representing what are generally believed to be more negative financial behaviors. As these are self-reported scales, some difficulty of analysis is presented in that the ratios between different points on the scale are unlikely to be uniform for different respondents. Thus, they were recoded as dichotomous dependent variables with 1 representing very positive behaviors (including only reported responses of 1) and 0 representing negative behaviors (including all other reported responses).

Independent Variables

Gender Role Attitudes

Gender role attitudes were operationalized by responses to the following statements: (a) A woman's place is in the home, (b) A wife with family has no time for other employment, (c) A working wife feels more useful (reverse coded), (d) Employment of wives leads to juvenile delinquency, (e) Inflation necessitates employment of both parents (reverse coded), (f) Traditional husband/wife roles are best, (g) Men should share housework (reverse coded), and

(h) Women are happier in traditional roles. Each statement allows four response categories: (a) strongly disagree, (b) disagree, (c) agree, and (d) strongly agree. Responses were retrieved from the 2006 and 2008 administrations of the survey. Responses from both reporting years were combined because those who reported gender role attitudes in 2006, did not report again in 2008. This combination allowed for a more representative sample of the total amount of respondents to the gender role attitudes. Statement (d) was not reported in the 2006 survey, therefore, it was also eliminated in the 2008 data. After recoding, a scale with scores ranging from 7 to 28 resulted with higher scores representing more traditional gender role attitudes.

Demographic Characteristics

Age was measured continuously. Race was coded by combining the NLSY 1986-2008 cohort categories of Black and Hispanic to create two categories with non-Black, non-Hispanic respondents coded as 1 and Black and Hispanic respondents coded as 0. The data included five categories for marital status which were recoded as 1 = married and 0 = not married (never married, divorced, separated, or widowed). Respondents' income was measured continuously (divided by 1,000 for the regressions to allow ease of interpretation). Where,

*Financial Behavior*₁ = Delayed buying,

*Financial Behavior*₂ = Difficulty paying bills,

*Financial Behavior*₃ = Money left over,

β_{gra} = Gender role attitudes,

β_{age} = Age,

β_{race} = Race,

β_{inc} = Income,

$\beta_{marstat}$ = Marital status, and

β_{sex} = Sex.

Three logistic regression equations, assuming the following relationships, were estimated,

$$Financial\ Behavior_1 = f(\beta_{gra}, \beta_{age}, \beta_{race}, \beta_{inc}, \beta_{marstat}, \beta_{sex}) \quad (2)$$

$$Financial\ Behavior_2 = f(\beta_{gra}, \beta_{age}, \beta_{race}, \beta_{inc}, \beta_{marstat}, \beta_{sex}) \quad (3)$$

$$Financial\ Behavior_3 = f(\beta_{gra}, \beta_{age}, \beta_{race}, \beta_{inc}, \beta_{marstat}, \beta_{sex}) \quad (4)$$

Each financial behavior of the respondent was measured as a function of their gender role attitudes, age, race, respondent's income, marital status, and sex. The correlation matrix revealed no multicollinearity issues to be concerned about.

Results

Descriptive Statistics

Approximately 40% of respondents never put off buying necessary items such as food, clothing, medical care, or housing because they did not have enough money. For the second financial behavior, 37% of respondents reported having no difficulty at all paying their bills. Thirdly, only approximately 11% of respondents had more than enough money left over at the end of the month.

With a range from 14 years to 36 years old, the average age of respondents was approximately 26 years. Almost 75% of the sample was married, and 62% were non-Black, non-Hispanic. Mean income for respondents was \$21,418 (range = \$0 - \$119,116). Utilizing a range of scores from 11 to 26, the mean score for gender role attitudes was 20.23. The sample was comprised of an approximate 50% - 50% split between male and female respondents.

Table 3.1 Descriptive Statistics of the Sample Essay 2

Variable	%	
Financial Behavior 1 – Not Putting Off Buying Necessities (N = 2,020)		
1 = Never	860	42.57%
0 = Rarely/Occasionally/ Frequently/ All the time	1,160	57.43%
Financial Behavior 2 – No Difficulty Paying Bills (N = 2,011)		
1 = No difficulty at all	734	36.50%
0 = Little/Some/ Quite a bit/ A great deal	1,277	63.50%
Financial Behavior 3 – Having Money Left Over (N = 2,000)		
1 = More than enough money left over	221	11.05%
0 = Some/Just enough/Not enough	1,779	88.95%
Age		
Mean (Range)	25.77	(14 - 36)
Marital Status		
1 = Married		74.70%
0 = Not Married		25.30%
Race		
1 = Non-Black, Non-Hispanic		62.33%
0 = Black and Hispanics		37.67%
Sex		
1 = Male		50.40%
0 = Female		49.60%
Income		
Mean (Range)	\$21,418	(\$0 - \$119,116)
Gender Role Attitudes		
Mean (Range)	20.23	(11 - 26)

*Demographic and attitudinal statistics based on maximum regression size of N = 2,020.

Regression Analysis

Three logistic regression models were utilized in order to assess the probability of respondents engaging in positive or negative financial behaviors. Each model used a financial behavior question as the dependent variable. The outcome variable for regression model one was whether respondents put off buying necessities. The second model predicted if respondents reported having difficulty paying their bills. The third financial behavior determined in model three was if respondents have money left over at the end of the month. The Log Likelihood Ratio

was statistically significant for all three models at the $p < .001$ level (128.70, 86.00, and 51.74, respectively).

Results from the first logistic regression model indicated that age, race, sex, and respondents' income were statistically significant in predicting one's probability of not putting off buying necessities. Similar to model one, the second logistic regression model showed that age, race, sex, and income were predictors of not having difficulty paying bills; however, marital status was also considered statistically significant. According to the third model, only age and income were significant predictors of one having money left over at the end of the month. Each model is described in more detail below.

Regression 1: Not Putting Off Buying Necessities

As shown in Table 3.2, with a standardized beta estimate of -0.20, age was the largest contributor to the model, indicating that older respondents are more likely to put off buying necessary items (O. R. = 0.92, $p < .001$). Respondents' income was the second largest contributor to the model ($\beta = 0.18$). As one's income increased by \$1,000, they were 2% more likely to not put off buying necessary items (O. R. = 1.02, $p < .001$). Race and sex had the third and fourth largest contributions to the model ($\beta = 0.13$ and 0.09, respectively). Non-Black/Non-Hispanic respondents were 65% more likely to not put off buying necessary items than Black/Hispanic respondents ($p < .001$), and males were 36% more likely than females to engage in positive financial behavior by not putting off buying necessities ($p < .001$).

Table 3.2 Logistic Regression Model 1 Essay 2 – Do Not Put Off Buying Necessities*N* = 2,020

Variable	Coefficient p	Odds Ratio O. R.	Standardized beta estimate β
Intercept	1.51		
Age	-0.09***	0.92	-0.20
Married	-0.01	0.99	-0.00
Non-Black/Non-Hispanic	0.50***	1.65	0.13
Male	0.31***	1.36	0.09
Income by 1,000	0.02***	1.02	0.18
Sum of traditional gender role attitudes	-0.02	0.98	-0.02
<i>*p</i> < .05, <i>**p</i> < .01, <i>p</i> < .001			

Regression 2: No Difficulty Paying Bills

Using the same independent variables as the first model, the second regression model considered one's financial behaviors by responses to whether they had difficulty paying bills (Table 3.3). Age was the largest contributor to model one; however, in model two, this variable was only the second largest contributor ($\beta = -0.15$). Rather, respondents' income was the largest contributor to model two ($\beta = 0.20$). As one's income increased by \$1,000, respondents were 2% more likely to not have difficulty paying their bills ($p < .001$). Very similar to model one, as age increased by one year, one was more likely to have difficulty paying their bills (O. R. = 0.94, $p < .001$). Third, with a standardized beta estimate of 0.08, males were approximately 32% more likely than females to display positive financial behavior by not having difficulty paying their bills ($p < .01$). Marital status and race made equal contributions to the model with standardized beta estimates of -0.06 and 0.06, respectively. Respondents who were not married were more

likely than married respondents to not have difficulty paying their bills (O. R. = 0.78, $p < .05$) and non-Black, non-Hispanic respondents were more likely to not have difficulty paying their bills than Black/Hispanic respondents (O. R. = 1.25, $p < .05$).

Table 3.3 Logistic Regression Model 2 Essay 2 – No Difficulty Paying Bills

N = 2,011

Variable	Coefficient p	Odds Ratio O. R.	Standardized beta estimate β
Intercept	1.22		
Age	-0.06***	0.94	-0.15
Married	-0.25*	0.78	-0.06
Non-Black/Non-Hispanic	0.22*	1.25	0.06
Male	0.28**	1.32	0.08
Income by 1,000	0.02***	1.02	0.20
Sum of traditional gender role attitudes	-0.04	0.96	-0.04
<i>*p < .05, **p < .01, p < .001</i>			

Regression 3: Has Money Left Over

The third regression model (Table 3.4) used the same independent variables as model one and model two. However, model three used responses referring to if the respondent has money left over at the end of the month as the dependent variable. Only two variables were found to be predictors of this financial behavior. Age and respondents' income both contributed equally to the model ($\beta = -0.22$ and 0.22 , respectively). When age increased by one year, individuals were more likely to not have money left over at the end of the month (O. R. = 0.91, $p < .001$). Respondents were 2% more likely to have money left over at the end of the month when their income increased by \$1,000 ($p < .001$).

Table 3.4 Logistic Regression Model 3 Essay 2 – Has Money Left Over*N* = 2,000

Variable	Coefficient b	Odds Ratio O. R.	Standardized beta estimate β
Intercept	-0.82		
Age	-0.09***	0.91	-0.22
Married	0.08	1.08	0.02
Non-Black/Non-Hispanic	0.20	1.22	0.05
Male	0.27	1.32	0.08
Income by 1,000	0.02***	1.02	0.22
Sum of traditional gender role attitudes	0.02	1.02	0.02
<i>*p</i> < .05, <i>**p</i> < .01, <i>p</i> < .001			

Discussion

The current study hypothesized that financial behaviors are influenced by gender role attitudes and social characteristics, including sex, age, race, income, and marital status. Previous research has shown that a person's gender role attitudes, and social characteristics may impact financial behaviors (e.g., Grable & Joo, 2006; Malone et al., 2010; O'Neill & Xiao, 2006; Ozmete & Hira, 2011; Perry & Morris, 2005; Sunden & Surette, 1998). The following discussion focuses on the results of the three regression models that explored three distinct financial behaviors as an assessment of one's overall financial behavior.

The first regression model was used to determine if any of the above mentioned variables may predict putting off buying necessary items, such as food, clothing, medical care, or housing because of lack of enough money. Statistically significant predictors in this model were age, race, sex, and respondents' income. Hypothesis Two was confirmed (excluding marital status):

Respondents' socialization characteristics, including age, race, sex, income, and marital status will influence their financial behaviors as related to putting off buying necessary items. A demographic profile of individuals who reported having more positive financial behaviors, by not putting off buying necessities because they did not have money, included those who were younger, non-Black/non-Hispanic males, and those with higher incomes. Marital status was the only socialization characteristic that was not significant in this model. Hypothesis One was rejected since gender role attitudes were not found to be a predictor of one putting off buying necessary items.

Financial behavior as related to having difficulty paying bills anytime during the past 12 months was assessed in the second regression model. This model confirmed Hypothesis Two. Whereas four of the five socialization characteristics were found to be significant predictors in model one, all five of the variables were associated with difficulty paying bills. Similar to model one, younger respondents, non-Black/non-Hispanics, males, and those with higher incomes were less likely to have difficulty paying their bills. However, marital status was also statistically significant in predicting this particular behavior, with unmarried individuals exhibiting more positive financial behaviors. Once again, Hypothesis One was rejected. Gender role attitudes had no significance in determining whether respondents have difficulty paying their bills.

The third model assessed whether one generally has money left over at the end of the month as the financial behavior. Only two variables were found to be significant to support Hypothesis Two. Younger respondents and those with higher incomes were more likely to have money left over at the end of the month. Marital status, race, and sex did not contribute to the model. As with model one and model two, one's gender role attitudes were not significant in

predicting whether respondents displayed positive financial behaviors by having money left over at the end of the month.

The results of the combined regressions showed that all of the hypothesized socialization characteristics were predictors of one or more of the measured financial behaviors. Age and income were the only variables significant in all three models. These results suggest that one's age and income have the most influence on one's financial behaviors. The first indication is that the more money one has, the more financially responsible behaviors someone will exhibit. Income has been found to have a positive association with financial behaviors (O'Neill & Xiao, 2006). Surprisingly, in each model as age increased, respondents reported having more negative financial behaviors, suggesting that younger people are more financially responsible. This finding is contrary to O'Neill and Xiao's (2006) study which reported that older respondents have better financial behaviors than younger respondents. It is possible that a consistent relationship between age and financial behaviors does not exist. Perhaps financial behaviors by age are really a function of generational attitudes towards money. It is not unreasonable to suppose that common "coming of age" experiences such as the great depression, the relative affluence and security of the fifties, or perhaps this current financial crisis will have a lasting impact on the financial behaviors of those who experience these events at some point in their lives.

This study hypothesized that nontraditional gender role attitudes would have a positive association with financial behaviors. However, gender role attitudes were not significant in predicting any of the three financial behaviors. These results are contrary to previous studies (Hira & Mugenda, 2000; Ozmete & Hira, 2011), which when reviewed present a reasonable

supposition that gender role attitudes do impact the choices and actions that a person takes. However, gender role attitudes may not drive every measurable financial behavior.

Using a framework of Eagly's (1987) gender role theory, the current study hypothesized that one's financial behaviors are a function of socialization characteristics and gender role attitudes. Although gender role attitudes were not statistically significant, males were found to display more positive behaviors than females in two of the regression models. These findings suggest that gender role attitudes may not influence financial behaviors, but that gender does influence financial behaviors. Gender was found to be a determinant of various financial behaviors in previous studies (Anthes & Most, 2000; Bajtelsmit & Bernasek, 1996; Eckel & Grossman, 2002; Grable, 2000; Hayhoe et al., 2000; Hira & Mugenda, 2000). As Anthes and Most (2000) suggested, women are not as experienced as men in financial issues and, historically, women have been financially dependent on men. This study presented an issue that can arise in survey research. A fair assessment could be made that currently society paints less traditional female gender role attitudes more positively than traditional female gender role attitudes. Thus, when taking a survey the respondent may answer as they believe they "should" while their gender indicates the choices they actually make. Obviously, this is one of the issues related to self-reporting.

Implications

Financial planners are often challenged when they suggest that clients can change behaviors in which they have engaged in for several years. However, it is possible to alter clients' behaviors by integrating their practices with a financial therapist. Financial therapists are trained "to guide clients to adopt and sustain behavior changes that can make their financial plan come to life" (Maton, Maton, & Martin, 2008, p. 65). Collaboration of financial planners and

financial therapists helps clients to gain an understanding of their relationship with money and how it affects their lives, which, furthermore, aids planners in providing advice that clients will act on (Maton et al.).

The current study provides useful information for financial planner, counselors, and therapists by recognizing socialization characteristics that may influence financial behaviors. Social, psychological, and emotional issues and their impact on financial behavior are seriously lacking in the formal or continuing education of financial planners. To be effective, financial planning educators and advisors need to understand factors that underlie their clients' financial behaviors. Educational programs are needed that focus on gender differences in spending behaviors and their consequences and inconsistencies in an individual's perceptions of their financial situations (Hira & Mugenda, 2000).

As Anthes and Most (2000) found, the biggest challenge for the financial planning community is raising awareness about the difficult financial issues that women face, and the need to help women clients address their attitudes toward money. Their findings further suggest that financial planners need to motivate women to examine their own personal money history in order to overcome gender and cultural stereotyping. One other issue that financial planners and therapists should consider is that perhaps their female clients behave more traditionally than they will report they do. This should be taken into account when working with female clients.

Limitations and Recommendations

Future researchers should consider the limitations of this study. First, other data sets may provide more defined information to measure financial behaviors. The current study used responses to the following questions in order to assess financial behaviors: (a) How often do you/does your household put off buying something you need, such as food, clothing, medical

care, or housing because you don't have money?; (b) During the past 12 months, how much difficulty did you/did your household have paying bills?; and (c) Thinking about the end of each month over the past 12 months, how much money did you/did your household have left over?

Respondents who had missing data were not included in the regression models. Only those respondents who provided complete data were used. Therefore, different findings may have resulted if individuals who had missing data were also included in the analysis. This is a limitation that should be considered. In addition, data for the dependent variable was reduced to a binary variable since the original data were not in a ratio level scale.

While the issue has been raised of a difference in the gender role attitudes that women self-report and the actual behavior of the different genders, it certainly has not been conclusively proven by this study. Therefore, further research into the issue of the self-reported attitudes of women and the actual behaviors of women is a fruitful area for additional inquiry in future research.

The most interesting finding from this paper is that gender role attitudes were not significant indicators of financial behaviors, as predicted by gender role theory. However, gender was a significant predictor of two of the three financial behaviors. This may indicate a difference in self-reported gender role attitudes of women and their actual behaviors. Therefore, financial planners and therapists must be aware of a disconnect between client self-reported attitudes and client behaviors. This study also indicates that males, for whatever reason, do tend to exhibit more positive financial behaviors. Practitioners must be prepared to render additional assistance to female clients, and public policymakers attempting to improve financial behaviors, should focus on women as this is where improvement is of greatest need.

References

- Anthes, W. L., & Most, B. W. (2000). Frozen in the headlights: The dynamics of women and money. *Journal of Financial Planning*, 13(9), 130-142.
- Bakan, D. (1966). *The duality of human existence: An essay on psychology and religion*. Chicago: Rand McNally.
- Bajtelsmit, V. L., & Bernasek, A. (1996). Why do women invest differently than men? *Financial Counseling and Planning*, 7, 1-10.
- Bernasek, A., & Bajtelsmit, V. L. (2002). Predictors of women's involvement in household financial decision-making. *Financial Counseling and Planning*, 13(2), 39-48.
- Burgoyne, C. B. (1990). Money in marriage: How patterns of allocation both reflect and conceal power. *The Sociological Review*, 38, 634-665.
- Burgoyne, C. B., Clarke, V., Reibstein, J. R., & Edmunds, A. E. (2006). "All my worldly goods I share with you?" Managing money at the transition to heterosexual marriage. *The Sociological Review*, 54, 619-637.
- Danes, S. M. (1994). Parental perceptions of children's financial socialization. *Financial Counseling and Planning*, 5, 127-149.
- Deaux, K. (1976). *The behavior of men and women*. Monterey, CA: Brooks/Cole Publishing Company.
- Eagly, A. (1987). *Sex differences in social behavior: A social role interpretation*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Eckel, C. C., & Grossman, P. J. (2002). Sex differences and statistical stereotyping in attitudes toward financial risk. *Evolution and Human Behavior*, 23(4), 281-295.

- Firestone, J. M., Harris, R. J., & Lambert, L. C. (1999). Gender role ideology and the gender based differences in earnings. *Journal of Family and Economic Issues*, 20(2), 191-215.
- Grable, J. E. (2000). Financial risk tolerance and additional factors that affect risk taking in every day money matters. *Journal of Business and Psychology*, 14(4), 625-630.
- Grable, J. E., & Joo, S. H. (2006). Student racial differences in credit card debt and financial behaviors and stress. *College Student Journal*, 40(2), 400-408.
- Hayhoe, C. R., Leach, L. J., Turner, P. R., Bruin, M. J., & Lawrence, F. C. (2000). Differences in spending habits and credit use of college students. *The Journal of Consumer Affairs*, 34(1), 113-132.
- Henley, N. (1977). *Body politics: Power, sex and nonverbal communication*. Englewood Cliffs, NJ: Prentice-Hall.
- Hira, T. K. (1997). Financial attitudes, beliefs and behaviors: Differences by age. *Journal of Consumer Studies and Home Economics*, 21(3), 271-290.
- Hira, T. K., & Mugenda, O. (2000). Gender differences in financial perceptions, behaviors and satisfaction. *Journal of Financial Planning*, 13(2), 86-91.
- Joo, S. H., & Pauwels, V. W. (2002). Factors affecting workers' retirement confidence: A gender perspective. *Financial Counseling and Planning*, 13(2), 1-10.
- Klontz, B., Kahler, R., & Klontz, T. (2008). *Facilitating financial health: Tools for financial planners, coaches, and therapists*. Cincinnati, OH: The National Underwriter Company.
- Malone, K., Stewart, S. D., Wilson, J., & Korsching, P. F. (2010). Perceptions of financial well-being among American women in diverse families. *Journal of Family Economic Issues*, 31, 63-81.

- Maton, C. C., Maton, M., & Martin, W. M. (2010). Collaborating with a therapist: The why, who, what, and how. *Journal of Financial Planning*, 23(2), 62-70.
- Miller, A. S., & Stark, R. (2002). Gender and religiousness: Can socialization explanations be saved? *American Journal of Sociology*, 107(6), 1399-1423.
- Newcomb, M. D., & Rabow, J. (1999). Gender, socialization, and money. *Journal of Applied Social Psychology*, 29(4), 852-869.
- O'Neill, B., & Xiao, J. (2006). Financial fitness quiz findings: Strengths, weaknesses, and disconnects. *Journal of Extension*, 44(1).
- Ozmete, E., & Hira, T. (2011). Conceptual analysis of behavioral theories/models: Application to financial behavior. *European Journal of Social Sciences*, 18(3), 386-404.
- Pahl, J. (1980). Patterns of money management within marriage. *Journal of Social Policy*, 9, 313-335.
- Perry, V. G., & Morris, M. D. (2005). Who is in control? The role of self-perception, knowledge, and income in explaining consumer financial behavior. *The Journal of Consumer Affairs*, 39(2), 200-313.
- Sunden, A. E., & Surette, B. J. (1998). Gender differences in the allocation of assets in retirement savings plans. *American Economic Review*, 88, 207-211.
- Vogler, C., (1994). Money in the household. In M. Anderson, F. Bechhofer & J. Gershuny, (Eds.), *The Social and Political Economy of the Household* (pp. 225-266). Oxford: Oxford University Press.
- Vogler, C., Lyonette, C., & Wiggins, R. D. (2008). Money, power and spending decisions in intimate relationships. *The Sociological Review*, 56(1), 117-143.

Vogler, C., & Pahl, J. (1994). Social and economic change and the organization of money within marriage. *Work, Employment & Society*, 7, 71-95.

Women & Co. (2009). *Where women, wealth, and wisdom meet: Mission*, Retrieved from <https://www.citibank.com/womenandco/pages/misc/mission.jsp>

Chapter 4 - The Financial Behaviors of Children Based on Mother's Gender Role Attitudes and Human Capital Transfers

Introduction

The United States has recently faced recession, rising fuel and food prices, a mortgage and credit crises, increased bankruptcy filings, and a reduction in savings creating financial stressors for individuals and families (McCormick, 2009). The national personal savings rate is low, with Americans saving 4% of their disposable income (U. S. Department of Commerce, 2011). The total amount of consumer debt in the U.S. for 2010 was \$2.4 trillion (Federal Reserve, 2011). Based on 2010 U. S. Census statistics, this works out to be nearly \$7,800 in debt for every man, woman, and child in the United States (U. S. Census, 2010). In addition, consumers have more than \$886 billion in outstanding revolving credit; the average consumer has nine credit cards with an average balance of \$5,100 per person, which was forecasted to increase to \$6,500 per person by the end of 2011 (U. S. Census, 2010). Non-business bankruptcy filings in 2010 totaled 1,538,033, up 14.4 % from 2009. This was the highest number of non-business filings for a fiscal year since 2005, immediately prior to the implementation of the Bankruptcy Abuse Prevention and Consumer Act in October 2005 (U. S. Courts, 2011). To further combat these financial difficulties, the unemployment rate remains near 9.5% (Bureau of Labor Statistics, 2011). In 2008 (year data was used for this study), similar conditions also existed with a personal savings rate of 5.35%, consumer debt of \$2.56 trillion, and outstanding revolving credit of \$957 billion. However, the number of non-business bankruptcy filings was considerably less in 2008 (694,855). These conditions place severe economic strain on families and, ultimately, children (McCormick, 2009).

“The unwise financial patterns of some parents all too often emerge in the lives of their children” (Clarke, Heaton, Israelson, & Eggett, 2005, p. 322). Financial decisions made early in life have the potential of affecting one’s ability to becoming financially independent and secure in adulthood (Martin & Oliva, 2001; Neull & Drabman, 2001). Therefore, with the numerous financial challenges and decisions that face young people today, it is necessary to provide skills and attitudes to allow them to successfully navigate in a complex financial environment (Clarke et al., 2005; McCormick, 2009). Although this study does not look to directly explore financial behaviors, it does examine the transfer of general attitudes and financial characteristics from mothers to their children.

Children learn behaviors by modeling what they observe, are taught to practice, and then they process this information (Bandura, 1982). According to Jorgensen and Savia (2010), parents are the key influences in children’s lives, and the attitudes and knowledge they have about money are primarily influenced by their parents. Clarke et al. (2005) found that specifically when mothers modeled financial tasks, and adolescents practiced and performed those tasks more frequently, the adolescents felt more financially prepared. To further examine this specific intergenerational transfer, this study focuses on the mother’s influence on children’s financial behaviors.

This study has three objectives: (a) determine if a mother’s gender role attitudes are transferred to her children and, therefore, influence their financial behaviors; (b) determine if a mother’s human capital is transferred to her children, and, therefore, influences their financial behaviors; and (c) illustrate how these determinants may be beneficial to policymakers and practitioners. The first objective will be tested by examining whether a mother’s gender role attitudes are intergenerationally transmitted to her children, how they may differ for sons and

daughters, and whether this transmission has any effect on the financial behaviors of children. Although previous studies have researched the transfer of maternal human capital, the second objective expands on this topic by examining whether this transmission has any effect on the financial behaviors of children. Finally, understanding what factors influence the next generation's financial behaviors may provide better prescriptions for policymakers and help practitioners in improving their financial practices.

Theoretical Framework and Related Literature

According to Becker (1993), human capital is comprised of “expenditures on education, training, medical care, etc. However, these produce human, not physical or financial, capital because you cannot separate a person from his or her knowledge, skills, health or values the way it is possible to move financial and physical assets while the owner stays put” (p. 16). Furthermore, of these expenditures, education and training are the most important investments in human capital (Becker, 1993), and, as such, parents have a substantial influence on children's education, marital stability, and other dimensions of their lives. Becker's theory of human capital suggests that parents' endowed and attained human capital influences their children's endowed and attained human capital, and therefore, effects their economic production.

Vella (1994) combined the constructs of gender roles and human capital to examine the effects on labor market behavior. Using a model of human capital attainment, Vella found that women's gender role attitudes have a “dramatic impact upon the individual's education, labor supply, and rate of return to education” (p. 209). The findings also indicated some relationship between male education attainment and attitudes, but no relationship between attitudes and labor market behavior. Vella concluded that traditional attitudes of gender roles do affect labor market behavior. Furthermore, Fortin (2005) found that women's gender attitudes affect their

participation in higher education which is the main determinant of favorable labor market outcomes for women. Using an expanded theoretical framework of Becker's (1993) human capital, this study incorporates mothers' gender role attitudes, traditional versus non-traditional, into the model along with their own human capital attainments and endowments and the gender role attitudes and human capital attainments and endowments of their children, which further affects the children's financial behaviors (see Figure 4.1).

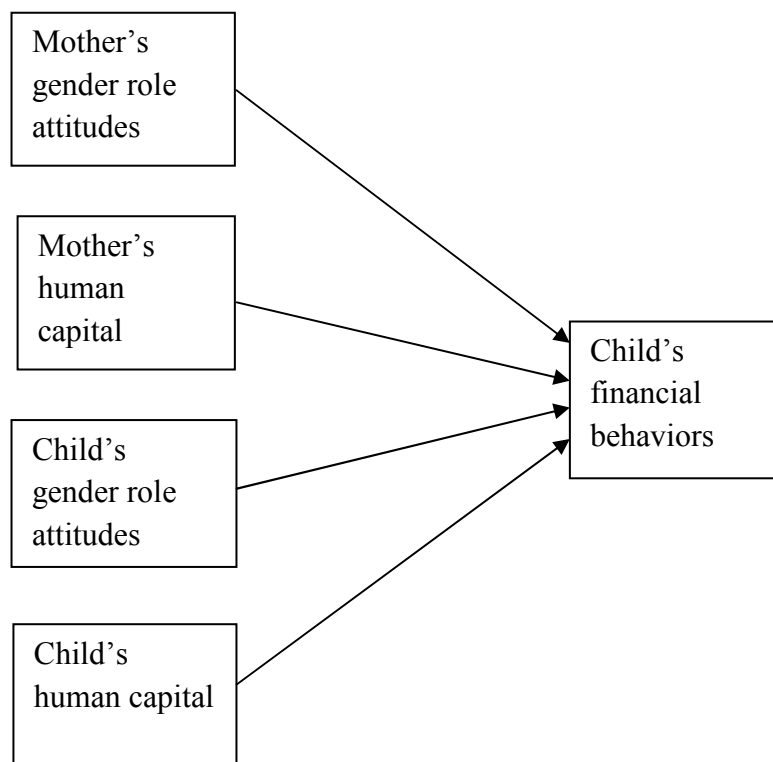


Figure 4.1 Conceptual Framework of Children's Financial Behaviors

Financial Behaviors

According to Jorgensen and Savia (2010), the recent downturn in the economy demonstrated how family life can be impacted when individuals and families are not financially capable. Families need to better understand the economy and adopt the skills and knowledge to

make better financial decisions. As Danes (1994) found, when children are young, family is the primary socialization unit for learning financial capability. According to Danes, financial socialization is “the process of acquiring and developing values, attitudes, standards, norms, knowledge, and behaviors that contribute to the financial viability and well-being of the individual” (p. 128). Using this perception of parental influence on the financial socialization of children, Jorgensen and Savia (2010) found that parents were perceived by young adults to have a direct and moderately significant influence on a child’s financial attitude and an indirect and moderately insignificant influence on financial behavior, which was mediated through financial attitudes. They also found that financial knowledge had a significant and large influence on financial attitudes, which had a meaningful and important influence on financial behaviors. Therefore, as financial knowledge increased, financial attitudes and behaviors of young adults improved, which, in turn, lead to better informed financial decisions. Jorgensen and Savia’s study suggested that these findings may be important to policymakers and educators in creating programs that focus on improving financial behaviors.

Danes and Haberman (2007) investigated gender differences in high school students in financial knowledge, self-efficacy, and behavior after completing a financial planning curriculum. Males had more knowledge about credit, auto insurance, and investments entering the program; however, females gained more knowledge throughout the program. Also, although males felt more confident about making money decisions, females thought that money management would affect their future more than males. In addition, males reported achieving financial goals more than their female counterparts, but females were more inclined to use budgets, compare prices, and discuss money matters with family.

The importance of understanding what influences financial behaviors is further evidenced in the fact that financial well-being is an outcome of financial behaviors: Financial well-being is comprised of individual characteristics, financial behaviors, and financial stressors (Kim, 2000). Increased financial stress from credit problems, for example, may not only cause lower financial well-being, but negative effects on one's mental health (Kim, 2003). Diminished financial well-being may cause social, physical, and emotional stress (Bagwell, 2000). Additionally, Kim found that people who practiced positive financial behaviors more often had higher levels of financial well-being.

Gender Roles/Attitudes

Previous research has indicated that differences exist between men and women's financial behaviors. These behaviors may be influenced by the different gender roles that men and women adhere to based on social expectations. Gender roles are prescriptions and beliefs that are socially and culturally defined about the behavior and emotions of men and women (Anselmi & Law, 1998). Consistent with these stereotypical roles, men have traditionally been considered financial providers, while women were seen as caretakers, creating a division of labor (Ozmete & Hira, 2011). Many social scientists have examined gender roles according to various socialization theories. Eagly (1987) developed the social-role theory of sex differences in social behavior, which emphasized that this division of labor between the sexes produces gender role expectations and sex-typed skills and beliefs that influence sex differences in social behavior. The division of labor is determined by the gender stereotypes held by people that women are more communal and men are more agentic. Communal qualities are considered to be selflessness, concern with others, and desire to be at one with others; agentic refers to self-assertion, self-expansion, and the urge to master (Bakan, 1966). When individuals form these

gender stereotypes and expectations, behavior is influenced by gender roles (Eagly). Studies suggest that men and women adopt different gender roles based on their perceptions of what factors might determine their financial situations and expectations (Ozmete & Hira, 2011). According to Hibbert, Beuthler, and Marin (2004), gender roles are closely aligned with the financial information that teens acquire through observation of their families' financial processes. These gender perceptions related to finances become normative attitudes over time as children approach their teens (West & Zimmerman, 1991). This internalization of norms further influences children's future expectations and behavior (Greene, 1990).

Anthes and Most (2000) suggested that although men and women share many similar basic money management concerns, they may often view them in different ways. For example, women tend to be more anxious about their financial future and how to secure it, women may also face more challenges than men. Some of these challenges include: (a) Women are more intimidated about financial issues than men; (b) Women earn less money than men; (c) Women are less prepared for retirement; (d) Women receive smaller retirement benefits; (e) Women live longer than men; (f) Women are poorer in retirement than men; and (g) Women are more conservative than men. As previously mentioned, women's gender role attitudes affect their human capital (i.e., educational attainment and income).

Human Capital

Becker's theory of human capital (1993) states that "education and training are the most important investments in human capital. High school and college education in the United States greatly raise a person's income, even netting out direct and indirect costs of schooling, and after adjusting for better family backgrounds and greater abilities of more educated people" (p. 17). Wilson (2001) incorporated Becker's human capital model in her study which supported the

model's implications. The study found evidence that educational attainment does encourage utility-maximizing individuals into choosing schooling levels based on economic returns and the utility that is derived from the schooling. Furthermore, using a variant of Becker's theory of human capital, Rosenzweig and Wolpin (1994) found that the educational attainment of mothers augments the production of children's human capital when unobserved human capital endowments and maternal behaviors that may affect human capital are not considered. To further support the relationship between parents' education levels and children's educational attainments, Becker and Tomes (1979) determined that parents with education levels far above the mean will have children who also attain high levels of schooling which, along with inherited endowments, translates into human capital and earnings when rented on the labor market.

Based on Becker's (1965) concept of human capital, Leibowitz (1974) presented an economic model of the process of children's attainments from endowed and attained human capital provided by their parents. Leibowitz (1974) stated, "Income, which is a rent on the stock of human capital, depends on the four major sources of capital: home investment (the quality and quantity of time inputs), measured ability, final schooling level, and postschool investment" (p. S113). In other words, Leibowitz's conclusion was that income is really a return based on the quality of human capital. Leibowitz empirically demonstrated that home investments in children are a positive and significant factor in determining children's ultimate labor market outcomes.

King, Peterson, Adioetomo, Domingo, and Syed (1986) found that education levels of children were impacted more by their mother's education than their father's education. Labor market productivity and income growth for men and women has been shown to be enhanced by education; however, increased education for women has beneficial effects on social well-being, which is not always measured by the market. Furthermore, increased levels of education for

women improve their productivity in the home, which has an impact on family health, child survival, and the investment in children's human capital (Hill & King, 1995). Using several studies from various countries, Behrman (1997) also found a significant positive relationship between women's educational attainment and their children's educational attainment.

As suggested by Cooksey, Menaghan, and Jekielek (1997), parents can, and generally do, provide financial capital, social capital, and human capital to their children. Financial capital consists of providing a conducive learning environment, whereas human capital is contributed through parents' abilities and educational attainments by being effective role models. In addition, parents provide social capital through their relations with their children. This transference of human capital (endowed and attained) may contribute to children's human capital and, therefore, influence their perceptions and attitudes towards financial issues.

Endowed and Attained Human Capital

According to Finke (2009), "There is strong empirical evidence that I.Q. is an accurate proxy of initial human capital endowment" (p. 2). Finke's study showed a strong relationship between I.Q. and financial decision making. The current study also uses I.Q. as a proxy for endowed human capital. In Haveman and Wolfe's (1995) review and critique of the empirical research on the links between investments in children and their attainments, they found that variables used to describe parental characteristics or choices were the most commonly used in the studies. The studies revealed that the most fundamental economic factor is the parents' human capital, which was most often measured by years of schooling attained. This variable was found to be "statistically significant and quantitatively important" (Haveman & Wolfe, 1995, p. 1855). These studies also considered family income to be the best measure of the level of economic resources that parents devote to the children, resulting in the children's educational

attainments. This variable was found to be positively associated with educational attainment and statistically significant in most studies. Therefore, as in previous studies, education and income will be used as proxies for attained human capital in the current study. In addition, this study conceptualizes children's financial behaviors as a form of attained human capital influenced by education and income.

Overall, the literature provides a background for the conceptualization of this study. Past research provides a rich collection of studies related to gender roles, human capital theory, and financial behaviors. Based on the research literature and the proposed theoretical framework, the following hypotheses are used as the focus of this study:

H₁: Mother's endowed and attained human capital has a statistically positive association with their children's financial behaviors.

H₂: Mother's nontraditional gender role attitudes have a statistically positive association with their children's financial behaviors.

H₃: Children's endowed and attained human capital has a statistically positive association with their own financial behaviors.

H₄: Children's nontraditional gender role attitudes have a statistically positive association with their own financial behaviors.

Methods

Data for the study were collected from two administrations of the National Longitudinal Survey of Youth (NLSY), sponsored by the Bureau of Labor Statistics. Mother's data was retrieved from the NLSY (1979-2008) administration. This sample is a nationally representative sample of 12,686 young men and women who were 14 to 22 years old when they were first surveyed in 1979. The respondents, and their spouses, if applicable, were interviewed annually

from 1979 through 1994 and are currently interviewed on a biennial basis. This study was interested in mother's attributes, therefore the sample was limited to females with children.

Respondent (i.e., child) data were retrieved from the NLSY79 Child/Young Adult (1986-2008) administration. This sample consists of all children born to NLSY79 female respondents. Conducted biennially, this child survey includes comprehensive child data. This data is coupled with longitudinal information on the family background, education, employment histories, and economic well-being of their NLSY79 mothers. Both administrations provide an expansive data set for this study.

This study attempts to address the issue of the intergenerational transmission of a mother's gender role attitudes and human capital to her children, and how this impacts a child's financial behaviors. Thus, a model using financial behaviors as a dependent variable and various indicators of gender role attitudes and both endowed and attained human capital is suggested. As will be explained below, logistic regression was used to develop appropriate models.

Dependent Variables

The NLSY data provides variables that may be used to measure financial behaviors.

There are three questions that address this issue: (a) How often do you/does your household put off buying something you need, such as food, clothing, medical care, or housing because you don't have money?; (b) During the past 12 months, how much difficulty did you/did your household have paying bills?; and (c) Thinking about the end of each month over the past 12 months, how much money did you/did your household have left over? These variables were coded with (a) and (b) above allowing five responses and (c) allowing four responses with higher scores representing more negative financial behaviors. By their very nature, Likert scales contain imprecision. The level of increase or decrease as one moves up and down the scale will not be

uniform from respondent to respondent. For this reason, the data was recoded as a dichotomous 0, 1 variable. Reported responses of 1 represent very positive behaviors and responses ranging from 2 to 5 on questions (a) and (b) and 2 to 4 on question (c) were recoded as 0, representing negative behaviors. Each financial behavior was assumed to be a function of the independent variables explained below.

Independent Variables

Gender Role Attitudes

The mother's gender role attitudes were operationalized by responses to the following statements: (a) A woman's place is in the home; (b) A wife with family has no time for other employment; (c) A working wife feels more useful (reverse coded); (d) Employment of wives leads to juvenile delinquency; (e) Inflation necessitates employment of both parents (reverse coded); (f) Traditional husband/wife roles are best; (g) Men should share housework (reverse coded); and (h) Women are happier in traditional roles. Each statement was assessed using four response categories: (a) strongly disagree, (b) disagree, (c) agree, and (d) strongly agree. Three of the items were recoded, resulting in a scale with scores ranging from 8 to 32 with higher scores indicating that the respondent possessed more traditional gender role attitudes. These responses were retrieved from the 2004 administration of the survey, which was the most current year that the gender role attitude questions were reported.

The children's gender role attitudes were also operationalized using responses to the above mentioned statements, excluding (d). Responses for the children were used from the 2006 and 2008 administration of the survey. These responses were combined because those who reported gender role attitudes in 2006 did not report again in 2008. Therefore, the combined sample is representative of the total number of respondents to the gender role attitudes.

Statement (d) was not reported in the 2006 data, and therefore it was also eliminated in the 2008 data for more accuracy. After recoding the same three responses as the mother's data, a scale with scores ranging from 7 to 28 resulted with higher scores representing more traditional gender role attitudes.

Endowed Human Capital

I.Q. was used to measure the mother's and child's endowed human capital. Mothers' I.Q. was assessed using the results from the NLSY 1981 administration of the Armed Forces Qualification Test (2006, revised), while children's I.Q. was determined from the results of the 1986 administration of the Peabody Picture Vocabulary Test-Revised. These tests are generally considered reliable and valid measurements of I.Q. (Rodgers, Cleveland, van den Oord, & Rowe, 2000). Both variables were measured on a continuous scale. Both I.Q. measurements were transformed to logarithms due to skewness in the data.

Attained Human Capital

Education and income were used as proxies to measure mother's and child's attained human capital. Both variables were measured on a continuous basis using data from the 2008 administration of the NLSY (1979-2008) survey for mothers and 2008 administration of the Child/Young Adult (1986-2008) survey for children. However, for the regressions, income was divided by 1,000 for ease of interpretation.

Empirical Model

Where,

*Financial Behavior*₁ = Delayed buying,

*Financial Behavior*₂ = Difficulty paying bills,

*Financial Behavior*₃ = Money left over,

β_{mgra} = Mother's gender role attitudes,

β_{mlq} = Mother's I.Q.,

β_{med} = Mother's education,

β_{minc} = Mother's income,

β_{cgra} = Child's gender role attitudes,

β_{clq} = Child's I.Q.,

β_{ced} = Child's education, and

β_{cinc} = Child's income.

Using the basic logistic regression equation,

$$\log \frac{P_i}{1-P_i} = \beta_1 + \beta_2 X_2 + \dots + \beta_i X_i$$

Three regression equations was estimated.

$$Financial\ Behavior_1 = f(\beta_{mgra}, \beta_{mlq}, \beta_{med}, \beta_{minc}, \beta_{cgra}, \beta_{clq}, \beta_{ced}, \beta_{cinc}) \quad (1)$$

$$Financial\ Behavior_2 = f(\beta_{mgra}, \beta_{mlq}, \beta_{med}, \beta_{minc}, \beta_{cgra}, \beta_{clq}, \beta_{ced}, \beta_{cinc}) \quad (2)$$

$$Financial\ Behavior_3 = f(\beta_{mgra}, \beta_{mlq}, \beta_{med}, \beta_{minc}, \beta_{cgra}, \beta_{clq}, \beta_{ced}, \beta_{cinc}) \quad (3)$$

Each financial behavior of the child was measured as a function of a summation of the mother's gender role attitudes, I.Q., education, income, and their children's own summation of gender role attitudes, I.Q., education, and income. The correlation matrix revealed that no multicollinearity issues exist.

Results

Descriptive Statistics

Approximately 40% of respondents never put off buying necessary items such as food, clothing, medical care, or housing because they did not have enough money. For the second financial behavior, approximately 35% had no difficulty at all paying their bills. Finally, assessing the third financial behavior, only approximately 10% of the respondents reported having more than enough money left over at the end of the month.

Based on a range from 13 to 32 with higher scores representing more traditional gender role attitudes, the mothers' mean score was 24.13. Mothers' mean I.Q. score was 30,289.20 (range = 172 - 98,645) and their educational level was approximately 13 years (range = 3 - 20 years). In addition, the average income for mothers was \$28,078.42 (range = \$100 - \$307,823).

Utilizing a range from 10 to 23, children's mean score for gender role attitudes was 17.12. Children's mean I.Q. score was 57.77 (range = 1 - 141). Similar to their mothers, children reported educational levels of approximately 13 years (range = 7 - 20 years), and a slightly lower average income of \$26,606.55 (range = \$45 - \$129,116). The sample included approximately a 50% - 50% split between males and females. Descriptive data is shown in Table 4.1.

Table 4.1 Descriptive Statistics of the Sample Essay 3*N* = 1,351

Variable	%	
Financial Behavior 1 – Not Putting Off Buying Necessities		
1 = Never	534	39.53%
0 = Rarely/Occasionally/ Frequently/ All the time	817	60.47%
Financial Behavior 2 – No Difficulty Paying Bills		
1 = No difficulty at all	468	34.64%
0 = Little/Some/ Quite a bit/ A great deal	883	65.36%
Financial Behavior 3 – Having Money Left Over		
1 = More than enough money left over	132	9.77%
0 = Some/Just enough/Not enough	1,219	90.23%
Mother’s Gender Role Attitudes		
Mean (Range)	24.13 (13 - 32)	
Mother’s Human Capital		
I.Q.		
Mean (Range)	30,289.20	(172 - 98,645)
Education		
Mean (Range)	12.70 years	(3 - 20)
Income		
Mean (Range)	\$28,078	(\$100 - \$307,823)
Child’s Gender Role Attitudes		
Mean (Range)	17.12	(10 - 23)
Child’s Human Capital		
I.Q.		
Mean (Range)	57.77	(1 -141)
Education		
Mean (Range)	12.98 years	(7 - 20)
Income		
Mean (Range)	\$26,607	(\$45 - \$129,116)
Sex		
1 = Male	671	49.67%
0 = Female	680	50.33%

Regression Analysis

Three logistic regressions were used to assess the likelihood of respondents displaying positive or negative financial behaviors. Each model incorporated one of the financial behavior questions as the dependent variable. The first model considered responses to the question of

whether respondents put off buying necessary items. Respondents in regression model two reported whether they have difficulty paying bills. Finally, regression model three included responses referring to if the respondents have money left over at the end of the month. The Log Likelihood Ratio was statistically significant for all three models at the $p < .001$ level (95.53, 78.68, and 56.70, respectively).

Results from the first logistic regression model showed that the mother's gender role attitudes, I.Q., and education, and the child's income were statistically significant predictors of a child's probability of not putting off buying necessary items. The second logistic regression model results also indicated that these variables, excluding mother's I.Q., but including child's I.Q., were predictive of the child's probability of not having difficulty paying their bills. According to the third logistic regression model, the mother's I.Q. and education and the child's income were found to be statistically significant predictors of the child having money left over at the end of the month.

Regression 1: Not Putting Off Buying Necessities

Mother's I.Q. was the largest contributor to the model with a standardized beta estimate of 0.17, indicating that the higher the mother's I.Q, the less likely their child would display negative financial behaviors by putting off buying necessary items (O. R. = 1.29, $p < .001$). The second largest contributor to the model was the child's income ($\beta = 0.16$). As a child's income increased by \$1,000, they were 1% more likely to not put off buying necessary items ($p < .001$). Results also indicated that mother's gender role attitudes ($\beta = -0.10$) and education ($\beta = 0.10$) made equal contributions to the model. As the mother's gender role attitudes increased by one unit (more traditional), her child was more likely to put off buying necessary items (O. R. = 0.94,

$p < .01$). For each additional year of a mother's education, children were more likely to not put off buying necessary items (O. R. = 1.08, $p < .01$). Results are shown in Table 4.2.

Table 4.2 Logistic Regression Model 1 Essay 3 – Do Not Put Off Buying Necessities

N = 1,351

Variable	Coefficient b	Odds Ratio O. R.	Standardized beta estimate β
Intercept	-3.01***		
Mother's sum of traditional gender role attitudes	-0.06**	0.94	-0.10
Mother's log I.Q.	0.26***	1.29	0.17
Mother's education	0.08**	1.08	0.10
Mother's income by 1.000	-0.00	1.00	-0.00
Child's sum of traditional gender role attitudes	0.01	1.01	0.01
Child's log I.Q.	-0.15	0.86	-0.06
Child's education	0.04	1.04	0.04
Child's income by 1,000	0.01***	1.01	0.16
* $p < .05$, ** $p < .01$, *** $p < .001$			

Regression 2: No Difficulty Paying Bills

The second regression model (Table 4.3) used the same independent variables as the first model; however, the dependent variable representing financial behaviors referred to responses to whether the child had difficulty paying bills. While mother's I.Q. was the largest contributor to the first regression model, this variable was not found to be statistically significant in the second regression model. With a standardized beta estimate of 0.23, child's income was the largest

contributor to the model. For every \$1,000 increase in child's income, they were 2% more likely to not have difficulty paying their bills ($p < .001$). Similar to the first model, mother's gender role attitudes were found to be statistically significant, whereas the more traditional her gender role attitude, her child was more likely to have difficulty paying bills (O. R. = 0.93, $p < .001$). This variable was the second largest contributor to the model ($\beta = -0.12$). As with the first model, mother's education was the third largest contributor to the model ($\beta = 0.09$). As a mother's level of education increased by one year, her child was more likely to report not having difficulty paying their bills (O. R. = 1.08, $p < .05$). Finally, child's I.Q. was found to be statistically significant in model three ($\beta = -0.07$). The higher the child's I.Q., the more difficulty they had paying their bills (O. R. = 0.84, $p < .05$).

Table 4.3 Logistic Regression Model 2 Essay 3 – No Difficulty Paying Bills*N= 1,351*

Variable	Coefficient	Odds Ratio	Standardized beta estimate
	b	O. R.	B
Intercept	-0.60		
Mother's sum of traditional gender role attitudes	-0.07***	0.93	-0.12
Mother's log I.Q.	0.07	1.07	0.05
Mother's education	0.07*	1.08	0.09
Mother's income by 1,000	-0.00	1.00	-0.05
Child's sum of traditional gender role attitudes	-0.00	1.00	-0.00
Child's log I.Q.	-0.17*	0.84	-0.07
Child's education	0.02	1.02	0.02
Child's income by 1,000	0.02***	1.02	0.23
*<i>p</i> < .05, **<i>p</i> < .01, ***<i>p</i> < .001			

Regression 3: Has Money Left Over

As with models one and two, the third regression model used the same independent variables. In order to capture financial behaviors, this model utilized responses to whether the child had money left over at the end of the month as the dependent variable. Although mother's gender role attitudes were found to be statistically significant in both model one and model two, this variable was not significant in predicting if respondents reported having money left over at the end of the month. Similar to the first two models, the child's income and mother's education were contributors to the model ($\beta = 0.23$ and 0.12 , respectively). As the largest contributor to model three, as child's income increased by \$1,000, they were 2% more likely to have money

left over at the end of the month (O. R. =1.02, $p < .001$). Found to be a predictor in model one, but not in model two, mother's I.Q. was statistically significant in this model ($p < .05$). With a standardized beta estimate of 0.15, this variable made the second largest contribution to the model. The higher the mother's I.Q., the more likely her child was to display more positive financial behaviors by having money left over at the end of the month (O.R. = 1.25). The child was also more likely to report having money left over as the mother's level of education increased (O. R. = 1.10, $p < .05$). Logistic results are shown in Table 4.4.

Table 4.4 Logistic Regression Model 3 Essay 3 – Has Money Left Over*N= 1,351*

Variable	Coefficient b	Odds Ratio O. R.	Standardized beta estimate β
Intercept	-6.87***		
Mother's sum of traditional gender role attitudes	-0.03	0.97	-0.05
Mother's log I.Q.	0.23*	1.25	0.15
Mother's education	0.10*	1.10	0.12
Mother's income by 1,000	-0.00	1.00	-0.02
Child's sum of traditional gender role attitudes	0.05	1.05	0.04
Child's log I.Q.	0.03	1.03	0.01
Child's education	0.02	1.02	0.03
Child's income by 1,000	0.02***	1.02	0.23
*<i>p</i> < .05, **<i>p</i> < .01, ***<i>p</i> < .001			

Discussion

The current study hypothesized that children's financial behaviors are influenced by their mother's gender role attitudes, human capital, and their own gender role attitudes and human capital. Past studies have shown that parents influence their children's lives and behaviors (Danes, 1994; Jorgensen & Savia, 2010). Specifically, mothers' behaviors have been found to impact their children's financial behaviors (Clarke et al., 2005). The following discussion focuses on the results of the three regression models that assessed three distinct financial behaviors of the children.

The first regression model was used to determine if any of the above mentioned variables have an impact on whether children reported putting off buying necessary items, such as food, clothing, medical care, or housing because they don't have enough money. A mother's gender role attitudes, endowed human capital, and attained human capital (education) were found to be statistically significant in predicting this financial behavior. Hypothesis One was confirmed: Mother's endowed and attained human capital has a statistically positive association with their children's financial behaviors related to putting off buying necessary items. As mother's I.Q. and level of education increased, her child is less likely to put off buying necessary items because they did not have enough money. As hypothesized (Hypothesis Two), a mother's nontraditional gender role attitudes were found to have a statistically positive association with her children's probability of not putting off buy necessities. Results from the model showed that the more traditional the mother's gender role attitudes, the more likely their children will display this negative financial behavior. In addition, children's income had a statistically positive association with their own financial behaviors. Children were less likely to put off buying necessities when they have larger incomes. This result partially confirmed Hypothesis Three: Children's endowed and attained human capital has a statistically positive association with their own financial behaviors. Children's endowed human capital (I.Q.) and level of education were not found to be predictors of this particular financial behavior. Children's gender role attitudes also did not influence whether they put off buying necessary items because they don't have enough money, therefore Hypothesis Four was rejected.

The children's possibility of having difficulty paying bills anytime during the past 12 months was assessed in the second regression model. Although the first model fully confirmed Hypothesis One, this model only partially confirmed this hypothesis. As with model one, the

mother's attained human capital (education) had a statistically positive association with her children not having difficulty paying their bills. The higher the level of the mother's education, the less likely her child will have difficulty paying bills. Also used as a measure of attained human capital, mother's income was not significant in predicting this behavior. Unlike model one, Mother's I.Q. was not significant in model two. However, similar to model one, Hypothesis Two was confirmed in this model: Mother's nontraditional gender role attitudes have a statistically positive association with their children having no difficulty paying their bills. Children's endowed and attained human capital was significant in predicting this behavior (Hypothesis Three). The children's income influenced their probability of having difficulty paying their bills. As in model one, as the child's income increased they are more likely to engage in positive financial behaviors. Additionally, children's I.Q. was found to be statistically significant in predicting children's difficulty paying their bills. Contrary to the hypothesis, this variable was found to have a negative association with this financial behavior. The higher the child's I.Q., they were more likely to have difficulty paying their bills.. This finding is both counterintuitive and inconsistent with the results of the other models. Children's nontraditional gender role attitudes had no influence on their own financial behaviors as related to having difficulty paying their bills, which rejects Hypothesis Four.

The third model used responses to whether the child generally has money left over at the end of the month as the financial behavior. Gender role attitudes of either the mother or child were not found to be statistically significant in this model, therefore rejecting Hypothesis Two and Four. Hypothesis One was confirmed: Mother's endowed and attained human capital had a statistically positive association with their children's financial behaviors related to having money left over at the end of the month. Specifically, the higher the mother's I.Q. and level of

education, the more likely her child was to display positive financial behaviors by having money left over at the end of the month. As in the previous two models, Hypothesis Three was partially confirmed: Children's endowed and attained human capital had a statistically significant association with their own financial behaviors by having money left over at the end of the month. As the child's income increased, they were more likely to have money left over. The child's level of education and I.Q. were not significant.

The results of the combined regressions showed that several of the hypothesized variables were predictors of one or more of the measured financial behaviors, excluding mother's income, child's education, and child's gender role attitudes. Children's income, a measurement of attained human capital, was the only variable significant in all three models. These results suggest that one's income has the most influence on one's financial behaviors, indicating that the more money one has, the more financially responsible they will behave. Income is dependent on educational attainment and measured ability, such as I.Q. (Becker, 1965; Leibowitz, 1974). Therefore, surprisingly, the child's I.Q. as a measurement of endowed human capital was found to have a negative impact on their financial behaviors. One possible explanation is that higher I.Q. may, in fact, not be universally associated with better financial behaviors. Perhaps on a statistically significant level, with higher I.Q. also comes a possible unwarranted confidence that there is no need to promptly pay bills because extensions and more income in the following months will always be forthcoming. The possibility exists that as one's I.Q. increases, one is more likely to be in a high status profession that causes one to be more likely to engage in conspicuous consumption and thus, actually have worse financial behaviors. In fact, Zagorsky (2007) found in his study using NLSY79 data that higher I.Q. scores sometimes increase the probability of individuals being in financial difficulty. In the future, this could be an area where

further inquiry would be productive. In addition, respondents' level of education as a partial measurement of endowed human capital was not a contributor to their financial behaviors.

Using a theoretical framework of human capital, the current study hypothesized that a mother's human capital and gender role attitudes transfer to her children in their portrayal of financial behaviors. As hypothesized, mother's attributes were found to influence children's financial behaviors. A mother's human capital, endowed and attained, impact her children to some degree and how they behaved related to their finances. Mother's I.Q. and level of education positively influence their children's financial behaviors; however, mother's income had no impact in any of the models.

Gender role attitudes of one generation, specifically mother's, appears to affect the financial behaviors of the next generation. Similar to Moen, Erickson, and Dempster-McClain (1997), using women's gender role attitudes, the current study has shown that mothers "do place their imprint on the next generation" (p. 292). Overall, children of more traditional mothers engaged in more negative financial behaviors. Results provided support that an intergenerational transmission of human capital and gender role attitudes from mothers to children does have an influence on their financial behaviors.

Implications

Prior research has focused on how human capital and gender role attitudes may affect one's behaviors. However, the purpose of this study was to determine the influence of these variables across a generation, and its impact specifically on financial behaviors. These findings suggest that individuals display certain behaviors not only based on their own attributes, but those that are inherited or attained from their mothers. According to Shim, Barber, Card, Xiao, and Serido (2009), financial habits formed as one transitions into adulthood may persist into and

throughout adulthood. Young adults are generally thought to be ill prepared for the financial marketplace and research is needed to understand how young people learn and practice good financial behaviors (Koonce, Mimura, Mauldin, Rupured, & Jordan, 2008). Therefore, exploring the root of certain behaviors early in life may aid in developing positive financial behaviors.

This study provides insight for financial planning professionals and educators to the existence of gender differences, and their effect on attitudes, beliefs, and behaviors surrounding money. As Hira and Mugenda (2000) suggest, financial professionals “can take an inward look and reflect upon their own behavior, examining not only their current methods of counseling their clients, in light of gender, but their personal financial practices, as well” (p. 91). According to Klontz, Kahler, and Klontz (2008), interior exploration of one’s own financial beliefs and behaviors may help many financial professionals use their exterior skills more effectively to help clients. Such an examination may allow planners to relate to individuals and their beliefs and behaviors and suggest courses of action to enhance their financial well-being. Understanding differences that are gender-based may provide guidance for financial counselors, planners, educators, therapists, and policymakers to better target programs to individuals. These links between gender attitudes and/or beliefs, and, ultimately, behaviors provide rich areas for future research.

Financial planners and financial counselors may utilize this information when working with clients by considering the link between their financial decision-making and their background. Financial therapy, as defined by the Financial Therapy Association (2011, p.1) is “the integration of cognitive, emotional, behavioral, relational, and economic aspects that promote financial health.” Financial therapists may benefit from these findings in order to

identify certain characteristics that prove to be problematic in relation to one's financial decision-making.

Limitations and Recommendations

The limitations of this study should be considered for future research related to children's financial behaviors. Other data sets may be more useful for measuring the outcome variable. For the current study, financial behavior was assessed by responses to the following three items: (a) How often do you/your household put off buying something you need-such as food, clothing, medical care, or housing-because you don't have money?; (b) During the past 12 months, how much difficulty did you/your household have paying bills?; and (c) Thinking about the end of each month over the past 12 months, did you/your household have enough money left over? Other characteristics found in other data sets may more accurately measure financial behavior. In addition, the responses to these financial behaviors and gender role attitudes are self-reported, which may have biased the sample.

Another consideration is the regressions in this study only used respondent data that was complete. Respondents who had any missing data were not included in the regression models. If all respondents had been used, including those with some missing data, the results of the study may not have been consistent with the findings of this study. In addition, data for the dependent variable was transformed to a binary variable since the original data were not in a ratio level scale.

One limitation of a study that examines gender differences and relies on Becker's work is that Becker's work treats gender differences as exogenous to the model. Becker was attempting to develop a mathematically rigorous framework where both spouses were jointly working to produce a particular output. In accomplishing this, the indifference curves of the parties are

aggregated. In aggregating the indifference curves, the summation take into account the different preferences of the two parties. In aggregating these indifference curves and transforming them into a production function framework, it is of no mathematical significance whether differing preferences are a function of gender, class, education, or simply taste. All that matters is that the preferences be accurately measured and that the human capital endowments of the parties be accurately accounted for. This process allows for the joint production of an output and places the root cause of differing preferences outside of the model.

Limitations of this study are outweighed by the insight provided to this body of research. This study is among the first to examine predictors of financial behaviors across generations. The recent state of the economy stresses the need to improve upon financial behaviors and individuals' financial situations. Financial planning, coupled with financial therapy, may contribute to the achievement of these goals.

References

- Anselmi, D., & Law, A. (1998). *Questions of gender: perspectives and paradoxes*. New York: McGraw Hill.
- Anthes, W. L., & Most, B. W. (2000). Frozen in the headlights: The dynamics of women and money. *Journal of Financial Planning*, 13(9), 130-142.
- Bagwell, D. C. (2000). *Work and personal financial outcomes of credit counseling clients*. Unpublished doctoral dissertation, Virginia Polytechnic Institute and State University: Blacksburg.
- Bakan, D. (1966). *The duality of human existence: An essay on psychology and religion*. Chicago: Rand McNally.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122-147.
- Becker, G. S. (1965). A theory of the allocation of time. *The Economic Journal*, 75(299), 493-517.
- Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis with special reference to education*, 3rd ed. Chicago and London: The University of Chicago Press.
- Becker, G. S., & Tomas, N. (1979). An equilibrium theory of the distribution of income and intergenerational mobility. *The Journal of Political Economics*, 87(6), 1153-1189.
- Behrman, J. R. (1990). *Handbook of population and family economics*, 1(1), 125-187. Pennsylvania: Elsevier B. V.
- Bureau of Labor Statistics (2011). Retrieved from www.bls.gov/bls/unemployment.htm

- Clarke, M. C., Heaton, M. B. Israelsen, C. L., & Eggett, D. L. (2005). The acquisition of family financial roles and responsibilities. *Family and Consumer Sciences Research Journal*, 33(4), 321-340.
- Cooksey, E. C., Menaghan, E. G., & Jekielek, S. M. (1997). Life-course effects of work and family circumstances on children. *Social Forces*, 76(2), 637-677.
- Danes, S. M. (1994). Parental perceptions of children's financial socialization. *Financial Counseling and Planning*, 5, 127-149.
- Danes, S. M., & Haberman, H. R. (2007). Teen financial knowledge, self-efficacy, and behaviors: A gendered view. *Financial Counseling and Planning*, 18(2), 48-60.
- Eagly, A. (1987). *Sex differences in social behavior: A social role interpretation*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Federal Reserve (2011). Retrieved from <http://www.federalreserve.gov>
- Finke, M. (2009). *Cognitive ability and financial decision making*. Retrieved from <http://www.ace.illinois.edu/pdfs/Cognitive%20Ability%20Financial%20DM%20Finke.pdf>
- Fortin, N. M. (2005). Gender role attitudes and the labor-market outcomes of women across OECD countries. *Oxford Review of Economic Policy*, 21(3), 416-438.
- Greene, A. L. (1990). Great expectations: Constructions of the life course during adolescence. *Journal of Youth and Adolescence*, 19(4) 289-306.
- Haveman, R., & Wolfe, B. (1995). The determinants of children's attainments: A review of methods and findings. *Journal of Economic Literature*, 33(4), 1829-1878.
- Hibbert, J. R., Beuthler, I. F., & Marin, T. M. (2004). Teacher versus parent influence of financial efficacy and behavior. In R. Travnicheck (Ed.), *Proceedings of the 2004 Annual*

- Conference of the Association of Financial Counseling and Planning* (pp. 51-59),
Denver, CO: Association for Financial Counseling and Planning.
- Hill, M. A., & King, E. M. (1995). Women's education and economic well-being. *Feminist Economics*, 1(2), 21-46.
- Hira, T. K., & Mugenda, O. (2000). Gender differences in financial perceptions, behaviors and satisfaction. *Journal of Financial Planning*, 13(2), 86-91.
- Jorgensen, B. L., & Savia, J. (2010). Financial literacy of young adults: The importance of parental socialization. *Family Relations*, 59(4), 465-478.
- Kim, J. (2000). *The effects of workplace financial education on personal finances and work outcomes. Unpublished doctoral dissertation*. Virginal Polytechnic Institute and State: Blacksburg.
- Kim, J. (2003). Relationships among credit counseling clients' financial well-being, financial behaviors, financial stressor events, and health. *Financial Counseling and Planning*, 14(2), 75-87.
- King, E. M., Peterson, J., Adioetomo, S. M., Domingo, L., & Syed, S. (1986). *Change in the status of women across generations in Asia*. Santa Monica, CA: The Rand Corporation.
- Klontz, B., Kahler, R., & Klontz, T. (2008). *Facilitating financial health: Tools for financial planners, coaches, and therapists*. Cincinnati, OH: The National Underwriter Company.
- Koonce, J. C., Mimura, Y., Mauldin, T. A., Rupured, A. M., & Jordan, J. (2008). Financial information: Is it related to savings and investing knowledge and financial behaviors of teenagers? *Journal of Financial Counseling and Planning*, 19(2), 19-28.
- Leibowitz, A. (1974). Home investments in children. *Journal of Political Economy*, 82(5), 111-135.

- Martin, A., & Oliva, J. C. (2001). Teaching children about money: Applications of social learning and cognitive learning developmental theories. *Journal of Family and Consumer Sciences: From Research to Practice*, 93(2), 26-29.
- McCormick, M. H. (2009). The effectiveness of youth financial education: A review of the literature. *Journal of Financial Counseling and Planning*, 20(1), 70-83.
- Moen, P., Erickson, M. A., & Dempster-McClain, D. (1997). Their mother's daughters? The intergenerational transmission of gender attitudes in a world of changing roles. *Journal of Marriage and Family*, 59(2), 281-293.
- Nuell, S. K. T., & Drabman, R. S. (2001). A practical procedure for instituting a chore and allowance program for grade school children: Specific guidelines for clinicians. *Child and Family Behavior Therapy*, 23(4), 37-45.
- Ozmete, E., & Hira, T. (2011). Conceptual analysis of behavioral theories/models: Application to financial behavior. *European Journal of Social Sciences*, 18(3), 386-404.
- Rodgers, J. L., Cleveland, H. H., van den Oord, E., & Rowe, D. C. (2000). Resolving the debate over birth order, family size, and intelligence. *American Psychologist*, 55(6), 599-612.
- Rosenzweig, M. R., & Wolpin, K. I., (1994). Are there increasing returns to the intergenerational production of human capital? Maternal schooling and child intellectual achievement. *The Journal of Human Resources*, 29(2), 670-693.
- Shim, S., Barber, B. L., Card, N. A., Xiao, J. J., & Serido, J. (2009). Financial socialization of first-year college students: The roles of parents, work, and education. *Journal of Youth and Adolescence*, 39(12), 1457-1470.
- U. S. Census. (2010). Retrieved from <http://census.gov/2010census>
- U. S. Courts. (2011). Retrieved from <http://www.bankruptcyaction.com/USbankstats.htm>

- U. S. Department of Commerce: Bureau of Economic Analysis. (2011). Retrieved from <http://research.stlouisfed.org/fred2/data/PSAVERT.txt>
- West, C., & Zimmerman, D. H. (1991). Doing gender. In J. Lorber and S. A. Farrell (Eds.), *The social construction of gender* (pp. 7-37). Newbury Park: Sage.
- Vella, F. (1994). Gender roles and human capital investments: The relationship between traditional attitudes and female labor market performance. *Economica*, 61(242), 191-211.
- Williams, R. (1985). *Keywords: a vocabulary of culture and society*. New York: Oxford University Press.
- Wilson, K. (2001). The determinants of educational attainment: Modeling and estimating the human capital model and education production function. *Southern Economic Journal*, 67(3), 518-551.
- Zagorsky, J. L. (2007). Do you have to be smart to be rich? The impact of I.Q. on wealth, income, and financial distress. *Intelligence*, 35, 489-501.

Chapter 5 - Conclusions

These three essays were designed to understand the determinants of financial behaviors. Much of the significance of this work is tied to a study of observable behaviors and self-reported attitudes. In financial planning and financial therapy and in the making of public policy related to financial behaviors, the planner, therapist or policymaker is attempting to influence behavior in the direction that tends to lead to more positive financial outcomes.

Essay 1

In the first paper, the current study addressed the determinants of marital arguments over money. It is self-evident that marital stress exhibited by money arguments is not conducive to maximizing the joint production function that marriage should optimally be. Utilizing Lundberg and Pollak's (1994) theory of non-cooperative game theory, this study conceptualized money arguments as a threat point in a marriage. The frequency of these money arguments were found to be influenced by financial behaviors, respondent's income, and birth order. As expected, those who exhibited more positive financial behaviors were less likely to engage in spousal money arguments. In contrast to public opinion, more money does not necessarily result in fewer arguments. According to the theoretical framework, people with higher educational attainment and income may have a preference for maximizing individual versus couple/joint utility.

The finding related to birth order was unexpected. Contrary to past research, laterborn individuals, in comparison to firstborns, were more likely to have spousal money arguments. This counterintuitive finding may be associated with the fact that data used in previous studies was much older when family sizes were generally larger and only children were rare, in comparison to families reporting in this study's more current data set. These findings support the idea that oftentimes couples may need to seek financial help from a financial planner in

collaboration with a financial therapist. Together, the two interrelated, but distinct, disciplines allow insight into what behaviors and characteristics may be the cause of dissension within a marriage, and how to change such behaviors, in order to accomplish a successful financial outcome.

This first essay contributes to theory by taking into consideration that money arguments, as threat points, may be used as an enforcement mechanism that stops short of divorce. Threats far short of divorce more accurately represent many marital relationships. Divorce is a very extreme sanction that is, as a general rule, costly to both partners and therefore probably not a credible threat for behaviors that are only moderately annoying. By developing a game theoretical perspective that incorporates threat points far short of the ultimate spousal sanction of divorce, real world marital relationships are more accurately modeled.

Theory is, by necessity, an abstraction from reality that requires simplifying assumptions; thus theory does not completely mirror reality. Therefore, any step that can be taken to model reality consistent with sound theory, where the assumptions more accurately represent the underlying reality, is an advance and a step worth taking. This first essay takes a step in more accurately modeling the framework surrounding money arguments within the marital relationship.

Essay 2

The second paper examined one generation's predictors of financial behaviors. Traditional economic theories typically do not sufficiently account for gender, therefore this study used a framework of Eagly's (1987) gender role theory. This study hypothesized that an individual's financial behaviors are influenced by certain socialization characteristics and their gender role attitudes (traditional versus nontraditional). Age, marital status, race, sex, and

income were all found to be significant in predicting at least one of three financial behaviors that were assessed. Age and income were the only two variables consistent across all the behaviors. As predicted, the higher the income, respondents engaged in more positive financial behaviors. Surprisingly, as age increased, more negative financial behaviors were displayed. Perhaps the most interesting finding to this study is that gender role attitudes were not statistically significant in predicting any of the financial behaviors, but gender itself was significant for two of the behaviors. Males were found to engage in more positive financial behaviors than women. These findings may suggest that a difference may exist between what women self-report as gender role attitudes and their actual behaviors. In light of this finding, practitioners, including financial planners, counselors, or therapists, should be privy to this differential and its impact on women's financial behaviors, and how to best assist their clients.

The primary contribution of the second paper demonstrated in an empirically rigorous way that when studying financial behavioral outcomes, gender matters. As a practitioner, this is significant. As a general rule, women exhibit less desirable financial behaviors than men. This finding highlights for a practitioner the need to pay special attention and put increased effort into assuring that females receive the financial education and training that they need in order to succeed financially. This could perhaps also indicate that current methods of imparting financial information are relatively successful with males and should not be discontinued, but other methods should be developed to more effectively reach females. Thus this research confirms as in so many other areas, gender matters.

Essay 3

The third paper explored the intergenerational transfer of attitudes and human capital across generations and their linkage to current financial behaviors of the respondents. Using a

theoretical framework of Becker's (1993) theory of human capital, this study conceptualized that a mother's human capital and gender role attitudes transfer to her children and influence their financial behaviors. In addition, the children's own human capital and gender role attitudes are considered to be predictive of their financial behaviors. Results showed that a mother's human capital, endowed and attained, impacts her children's financial behaviors to some degree. The mother's I.Q. and level of education have a statistically significant positive association with her children's financial behaviors. However, contrary to what was hypothesized, mother's income had no impact on all of the financial behaviors. Children's income was the only variable found to be predictive of all three financial behaviors. Perhaps the most compelling finding of this study is that a mother's gender role attitudes were found to influence two of the three financial behaviors of their children. Overall, this essay determined that a mother's human capital and gender role attitudes may transfer to the next generation and, ultimately, influence her children's financial behaviors. These findings suggest that individuals do not only act on their own attitudes and characteristics, but they may also be impacted by the attitudes and characteristics of the prior generation, specifically their mothers. Considering this linkage may prove to be beneficial to financial planners, counselors, and therapists when exploring the causes of some clients' financial behaviors.

This essay expands on a long accepted model (Becker's theory of human capital) by isolating the impact of the mother and also incorporating gender role attitudes. According to the U.S. Census (2010), there were 9.9 million single mothers living with children younger than 18, up from 3.4 million in 1970. In a country where households are increasingly headed by a single female, a thorough understanding of the mother's impact on the financial behavioral outcomes of children will allow the practitioner to more accurately focus on the needs of clients' from this

type of household unit. While this essay not only advances theory by including only mothers (in comparison to parents) and introducing gender role attitudes into a model of human capital theory, it also isolates the impact of the parental figure that in many instances will be the only parental figure in the client's life.

Summary

For a financial planner, counselor, or therapist, or for that matter, a public policymaker, these issues are all linked. If, for example, a policymaker was attempting to design legislation by improving the financial behaviors of the populous at large, looking at these studies, it would become apparent that a lasting impact on future generations could be achieved by influencing the gender role attitudes of the current generation of young mothers. This scenario suggests that the issue of financial behaviors and gender cannot be separated. In using limited governmental funds to achieve the maximum benefit, these studies provide some evidence that targeting females who tend to exhibit worse financial behaviors could perhaps have the greatest public policy impact. As the last two studies clearly indicate, gender matters.

When viewed together, the implications of the second and third papers in this series of essays is also quite interesting. The second paper suggests that a woman's gender role attitudes do not seem to impact her financial behaviors in a significant way; however, in the third paper it is demonstrated that a mother's gender role attitudes do seem to impact her children's financial behaviors. At first glance, these findings seem counterintuitive; however, these findings may point to something quite profound. A woman's self-reported beliefs concerning her gender role attitudes may actually not matter that much in determining her own financial behaviors, but they may be instrumental in influencing choices her children make that will ultimately influence their financial behaviors. Perhaps a young woman who accepts less traditional definitions of gender

roles will also be more likely to obtain a higher level of education and earn a higher income. Whatever the explanation for this finding, these studies do suggest that gender role attitudes within families tend to have an influence and interact with financial behaviors in a subtle, yet significant way, suggesting a potentially rich area for future inquiry.

These studies shed light on the factors that lead to positive financial behaviors. At this time, and under the current financial crisis, improving the ability of public policymakers to legislate, personal financial planners/counselors/therapists to modify financial behaviors, and financial educators to teach better financial practices is of critical national importance.

References

- Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis with special reference to education*, 3rd ed. Chicago and London: The University of Chicago Press.
- Eagly, A. (1987). *Sex differences in social behavior: A social role interpretation*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Lundberg, S., & Pollak, R. A. (1994). Noncooperative bargaining models of marriage. *The American Economic Review*, 84(2), 132-137.
- U. S. Census (2010). Retrieved from <http://www.census.gov/population/www/socdemo/hh-fam/cps2010.html>

Appendix A - Codebooks

Child Codebook

Table A.1 NLSY79 Child/Young Adult Codebook

CODEBOOK

NLSY79 Child/Young Adult (1986-2008)

Variable	Question	NLSY Question Number	Descriptive Statistics – Complete Data
Frequency of arguments about money 2008 HOW FREQUENTLY R AND PARTNER ARGUE ABOUT MONEY	How frequently do you and your [husband/wife/partner] have arguments about.... RESPONSE CHOICE: "....money?"	Y20170.02	254 1 Often 522 2 Sometimes 559 3 Hardly Ever 427 4 Never ----- 1762 Refusal(-1) 9 Don't Know(-2) 6 TOTAL =====> 1777 MISSING(-7) 9718 Min: 1 Max: 4 Mean: 2.66
Financial Behavior 1 2008 HOW OFTEN R OR R'S HOUSEHOLD PUTS OFF BUYING SOMETHING NECESSARY	How often [do you/does hour household] put off buying something you need - such as food, clothing, medical care, or housing - because you don't have money? Would you say...	Y22325.00	3054 1 Never 586 2 Rarely 980 3 Occasionally 340 4 Frequently 307 5 All the time ----- 6267 Refusal(-1) 5 Don't Know(-2) 33 TOTAL =====> 6305 MISSING(-7) 5190
Financial Behavior 2 2008 DIFFICULTY R OR R'S HOUSEHOLD HAS PAYING BILLS	During the past 12 months, how much difficulty [did you/did your household] have paying bills? Would you say...	Y22326.00	2394 1 no difficulty at all 1944 2 a little difficulty 1193 3 some difficulty 429 4 quite a bit of difficulty 227 5 a great deal of difficulty ----- 6187 Refusal(-1) 4 Don't Know(-2) 114 TOTAL =====> 6305 MISSING(-7) 5190

Financial Behavior 3 2008 MONEY LEFT OVER AT END OF MONTH	Thinking about the end of each month over the past 12 months, [did you/did your household] generally end up with...	Y23327.00	811 1 more than enough money left over 2841 2 some money left over 2052 3 just enough to make ends meet 398 4 not enough to make ends meet ----- 6102 Refusal(-1) 6 Don't Know(-2) 197 TOTAL =====> 6305 MISSING(-7) 5190
Gender Role Attitude 1 2006 FAMILY ATTITUDES - PLACE OF WOMAN IS IN THE HOME? 2008	A woman's place is in the home, not the office or shop. Do you....	Y19205.01 Y22365.00	2298 1 Strongly Disagree 2800 2 Disagree 576 3 Agree 122 4 Strongly Agree ----- 5796 Refusal(-1) 2 Don't Know(-2) 41 TOTAL =====> 5839 MISSING(-7) 5656 213 1 Strongly Disagree 541 2 Disagree 96 3 Agree 7 4 Strongly Agree ----- 857 Refusal(-1) 1 Don't Know(-2) 17 TOTAL =====> 875 MISSING(-7) 10620
Gender Role Attitude 2 2006 FAMILY ATTITUDES - WIFE WITH FAMILY HAS NO TIME FOR OTHER EMPLOYMENT? 2008	A wife who carries out her full family responsibilities doesn't have time for outside employment. Do you....	Y19205.02 Y22366.00	1489 1 Strongly Disagree 3528 2 Disagree 676 3 Agree 89 4 Strongly Agree ----- 5782 Refusal(-1) 2 Don't Know(-2) 56 TOTAL =====> 5840 MISSING(-7) 5655 213 1 Strongly Disagree 541 2 Disagree 96 3 Agree

			7 4 Strongly Agree ----- 857 Refusal(-1) 1 Don't Know(-2) 17 TOTAL =====> 875 MISSING(-7) 10620
Gender Role Attitude 3 2006 FAMILY ATTITUDES - WORKING WIFE FEELS MORE USEFUL?	A working wife feels more useful than one who doesn't hold a job. Do you....	19205.03 Y22367.00	487 1 Strongly Disagree 2075 2 Disagree 2596 3 Agree 475 4 Strongly Agree ----- 5633 Refusal(-1) 1 Don't Know(-2) 206 TOTAL =====> 5840 MISSING(-7) 5655 55 1 Strongly Disagree 298 2 Disagree 415 3 Agree 55 4 Strongly Agree ----- 823 Refusal(-1) 0 Don't Know(-2) 52 TOTAL =====> 875 MISSING(-7) 10620
Gender Role Attitude 4 2006 FAMILY ATTITUDES - INFLATION NECESSITATES EMPLOYMENT OF BOTH PARENTS?	Employment of both parents is necessary to keep up with the high cost of living. Do you....	Y19205.05 Y22369.00	124 1 Strongly Disagree 1207 2 Disagree 3283 3 Agree 1159 4 Strongly Agree ----- 5773 Refusal(-1) 2 Don't Know(-2) 65 TOTAL =====> 5840 MISSING(-7) 5655 18 1 Strongly Disagree 197 2 Disagree 518 3 Agree 125 4 Strongly Agree ----- 858 Refusal(-1) 0 Don't Know(-2) 17 TOTAL =====> 875 MISSING(-7) 10620

Gender Role Attitude 5 2006 FAMILY ATTITUDES - TRADITIONAL HUSBAND/WIFE ROLES BEST? 2008	It is much better for everyone concerned if the man is the achiever outside the home and the woman takes care of the home and family. Do you...	Y19205.06 Y22370.00	1035 1 Strongly Disagree 3276 2 Disagree 1286 3 Agree 153 4 Strongly Agree ----- 5750 Refusal(-1) 2 Don't Know(-2) 88 TOTAL =====> 5840 MISSING(-7) 5655 155 1 Strongly Disagree 457 2 Disagree 230 3 Agree 14 4 Strongly Agree ----- 856 Refusal(-1) 0 Don't Know(-2) 19 TOTAL =====> 875 MISSING(-7) 10620
Gender Role Attitude 6 2006 FAMILY ATTITUDES - MEN SHOULD SHARE HOUSEWORK? 2008	Men should share the work around the house with women, such as doing dishes, cleaning and so forth. Do you...	Y19205.07 Y22371.00	54 1 Strongly Disagree 240 2 Disagree 3469 3 Agree 2059 4 Strongly Agree ----- 5822 Refusal(-1) 1 Don't Know(-2) 17 TOTAL =====> 5840 MISSING(-7) 5655 6 1 Strongly Disagree 34 2 Disagree 575 3 Agree 253 4 Strongly Agree ----- 868 Refusal(-1) 0 Don't Know(-2) 7 TOTAL =====> 875 MISSING(-7) 10620

Gender Role Attitude 7 2006 FAMILY ATTITUDES - WOMEN ARE HAPPIER IN TRADITIONAL ROLES? 2008	Women are much happier if they stay at home and take care of their children. Do you...	Y19205.08 Y22372.00	648 1 Strongly Disagree 3339 2 Disagree 1398 3 Agree 123 4 Strongly Agree ----- 5508 Refusal(-1) 4 Don't Know(-2) 328 TOTAL =====> 5840 MISSING(-7) 5655 93 1 Strongly Disagree 490 2 Disagree 221 3 Agree 9 4 Strongly Agree ----- 813 Refusal(-1) 0 Don't Know(-2) 62 TOTAL =====> 875 MISSING(-7) 10620
Age of Respondent 2008 AGE OF YOUNG ADULT (IN YEARS) AT DATE OF INTERVIEW	COMMENT: AGE OF YOUNG ADULT AT DATE OF INTERVIEW	Y22671.00	171 14: 14 YEARS OLD 312 15: 15 YEARS OLD 311 16: 16 YEARS OLD 351 17: 17 YEARS OLD 481 18: 18 YEARS OLD 369 19: 19 YEARS OLD 399 20: 20 YEARS OLD 415 21: 21 YEARS OLD 424 22: 22 YEARS OLD 408 23: 23 YEARS OLD 414 24: 24 YEARS OLD 411 25: 25 YEARS OLD 387 26: 26 YEARS OLD 351 27: 27 YEARS OLD 320 28: 28 YEARS OLD 245 29: 29 YEARS OLD 192 30: 30 YEARS OLD 133 31: 31 YEARS OLD 103 32: 32 YEARS OLD 65 33: 33 YEARS OLD 26 34: 34 YEARS OLD 15 35: 35 YEARS OLD 1 36: 36 YEARS OLD 2 37: 37 YEARS OLD ----- 6306 Refusal(-1) 0 Don't Know(-2) 0 TOTAL =====> 6306

			MISSING(-7) 5189 Min: 14 Max: 37 Mean: 22.48
Sex of Respondent SEX OF CHILD Survey Year: XRND		C00054.00	5870 1 MALE 5624 2 FEMALE ----- 11494 Refusal(-1) 0 Don't Know(-2) 0 Invalid Skip(-3) 1 TOTAL =====> 11495 MISSING(-7) 0
Birth Order of Respondent BIRTH ORDER OF CHILD Survey Year: XRND		C00058.00	4925 1 3748 2 1785 3 656 4 224 5 87 6 38 7 16 8 8 9 4 10 2 11 ----- 11493 Refusal(-1) 0 Don't Know(-2) 0 Invalid Skip(-3) 2 TOTAL =====> 11495 MISSING(-7) 0 Min: 1 Max: 11 Mean: 1.96
Education of Respondent HIGHEST GRADE OF SCHOOL COMPLETED AS OF 2008	Highest Grade Completed by Respondent as of the 2008 Interview	Y22673.00	0 1 1ST GRADE 0 2 2ND GRADE 1 3 3RD GRADE 1 4 4TH GRADE 0 5 5TH GRADE 8 6 6TH GRADE 76 7 7TH GRADE 372 8 8TH GRADE 454 9 9TH GRADE 599 10 10TH GRADE 711 11 11TH GRADE 2089 12 12TH GRADE 644 13 1ST YEAR COLLEGE 586 14 2ND YEARCOLLEGE

			302 15 3RD YEARCOLLEGE 324 16 4TH YEAR COLLEGE 73 17 5TH YEARCOLLEGE 44 18 6TH YEARCOLLEGE 11 19 7TH YEARCOLLEGE 8 20 8TH YEARCOLLEGE OR MORE 1 95 UNGRADED 1 0 None ----- 6305 Refusal(-1) 0 Don't Know(-2) 0 Invalid Skip(-3) 1 TOTAL =====> 6306 MISSING(-7) 5189
Marital Status of Respondent 2008 OFFICIAL MARITAL STATUS	COMMENT: Official Marital Status - Constructed	Y22675.00	5078 0: NEVER MARRIED 888 1: MARRIED 146 2: SEPARATED 183 3: DIVORCED 10 6: WIDOWED ----- 6305 Refusal(-1) 0 Don't Know(-2) 0 Invalid Skip(-3) 1 TOTAL =====> 6306 MISSING(-7) 5189 Min: 0 Max: 6 Mean: .28
Race of Respondent 2008 RACE OF CHILD (MOTHER'S RACIAL/ETHNIC COHORT FROM SCREENER)	RACE OF CHILD (MOTHER'S RACIAL/ETHNIC COHORT FROM SCREENER) SEE YOUTH REFERENCE NUMBER R(2147.)	C00053.00	2209 1 HISPANIC 3187 2 BLACK 6099 3 NON-BLACK, NON-HISPANIC ----- 11495 Refusal(-1) 0 Don't Know(-2) 0 TOTAL =====> 11495 MISSING(-7) 0
Respondent Income from Wages Survey Year: 2008 TOTAL INCOME FROM WAGES AND SALARY IN 2007	During 2005, how much did you receive from wages, salary, commissions, or tips from all (other) jobs [- military or civilian-] before deductions for taxes or anything else?	Y22241.00	THIS VARIABLE HAS BEEN TOP- CODED. THE VALUE OF 119116 REPRESENTS THE MEAN OF THE TOP VALUES OF Q15-5 and Q15-9. 1218 0 425 1 TO 999 225 1000 TO 1999 224 2000 TO 2999 171 3000 TO 3999

			125 4000 TO 4999 162 5000 TO 5999 113 6000 TO 6999 115 7000 TO 7999 97 8000 TO 8999 75 9000 TO 9999 439 10000 TO 14999 381 15000 TO 19999 376 20000 TO 24999 1026 25000 TO 49999 260 50000 TO 99999999: 50000+ ----- 5432 Refusal(-1) 40 Don't Know(-2) 833 (Go To <u>Y22242.00</u>) TOTAL =====> 6305 MISSING(-7) 5190 Min: 0 Max: 119116 Mean: 14215.41
Respondent Income from Farm or Business Survey Year: 2008 TOTAL INCOME FROM FARM OR BUSINESS IN 2007	How much did you receive AFTER EXPENSES?	Y22245.00	THIS VARIABLE HAS BEEN TOP- CODED. THE VALUE OF 119116 REPRESENTS THE MEAN OF THE TOP VALUES OF Q15-5 and Q15-9. 7 0 55 1 TO 999 18 1000 TO 1999 13 2000 TO 2999 6 3000 TO 3999 8 4000 TO 4999 7 5000 TO 5999 5 6000 TO 6999 1 7000 TO 7999 2 8000 TO 8999 3 9000 TO 9999 14 10000 TO 14999 10 15000 TO 19999 4 20000 TO 24999 9 25000 TO 49999 4 50000 TO 99999999: 50000+ ----- 166 Refusal(-1) 2 Don't Know(-2) 15 TOTAL =====> 183 MISSING(-7) 11312 Min: 0 Max: 100000 Mean: 7248.34

I.Q. of Respondent	PEABODY PICTURE VOCABULARY TEST- REVISED FORM L (PPVT): TOTAL RAW SCORE 86 INT	C05809.00	2 0 84 1 TO 9 268 10 TO 19 228 20 TO 29 252 30 TO 39 322 40 TO 49 315 50 TO 59 309 60 TO 69 270 70 TO 79 275 80 TO 89 179 90 TO 99 294 100 TO 9999999: 100+ ----- 2798 Refusal(-1) 0 Don't Know(-2) 0 Invalid Skip(-3) 423 TOTAL =====> 3221 MISSING(-7) 8274 Min: 0 Max: 149 Mean: 58.16
--------------------	--	-----------	--

Mother Codebook

Table A.2 NLSY79 (1979-2010) Codebook

CODEBOOK
NLSY79(1979-2010)

Variable	Question	NLSY Question Number	Descriptive Statistics – Complete Data
Gender Role Attitude 1 2004 FAMILY ATTITUDES - WOMAN'S PLACE IS IN THE HOME?	We are interested in your opinion about the employment of wives. I will read a series of statements and after each one I would like to know whether you strongly agree, agree, disagree, or strongly disagree. RESPONSE CHOICE: "A woman's place is in the home, not in the office or shop."	R84185.00	164 1 Strongly agree 577 2 Agree 3516 3 Disagree 3226 4 Strongly Disagree 137 8 (DK) 25 9 (REFUSE) ----- 7645 Refusal(-1) 0 Don't Know(-2) 0 TOTAL =====> 7645 VALID SKIP(-4) 16 NON- INTERVIEW(-5) 5025 Min: 1 Max: 9 Mean: 3.41
Gender Role Attitude 2 2004 FAMILY ATTITUDES - WIFE WITH FAMILY HAS NO TIME FOR OTHER EMPLOYMENT?	We are interested in your opinion about the employment of wives. I will read a series of statements and after each one I would like to know whether you strongly agree, agree, disagree, or strongly disagree. RESPONSE CHOICE: "A wife who carries out her full family responsibilities doesn't have time for outside employment."	R84185.01	207 1 Strongly agree 1082 2 Agree 4111 3 Disagree 2066 4 Strongly Disagree 151 8 (DK) 28 9 (REFUSE) ----- 7645 Refusal(-1) 0 Don't Know(-2) 0 TOTAL =====> 7645 VALID SKIP(-4) 16 NON-INTERVIEW(-5) 5025 Min: 1 Max: 9 Mean: 3.2

Gender Role Attitude 3 2004 FAMILY ATTITUDES - WORKING WIFE FEELS MORE USEFUL?	We are interested in your opinion about the employment of wives. I will read a series of statements and after each one I would like to know whether you strongly agree, agree, disagree, or strongly disagree. RESPONSE CHOICE: "A working wife feels more useful than one who doesn't hold a job."	R84185.02	652 1 Strongly agree 2938 2 Agree 2805 3 Disagree 858 4 Strongly Disagree 348 8 (DK) 44 9 (REFUSE) ----- 7645 Refusal(-1) 0 Don't Know(-2) 0 TOTAL =====> 7645 VALID SKIP(-4) 16 NON-INTERVIEW(-5) 5025 Min: 1 Max: 9 Mean: 2.82
Gender Role Attitude 4 2004 FAMILY ATTITUDES - EMPLOYMENT OF WIVES LEADS TO JUVENILE DELINQUENCY?	We are interested in your opinion about the employment of wives. I will read a series of statements and after each one I would like to know whether you strongly agree, agree, disagree, or strongly disagree. RESPONSE CHOICE: "The employment of wives leads to more juvenile delinquency."	R84185.03	283 1 Strongly agree 1664 2 Agree 4051 3 Disagree 1364 4 Strongly Disagree 247 8 (DK) 36 9 (REFUSE) ----- 7645 Refusal(-1) 0 Don't Know(-2) 0 TOTAL =====> 7645 VALID SKIP(-4) 16 NON-INTERVIEW(-5) 5025 Min: 1 Max: 9 Mean: 3.08
Gender Role Attitude 5 2004 FAMILY ATTITUDES - INFLATION NECESSITATES EMPLOYMENT OF BOTH PARENTS?	We are interested in your opinion about the employment of wives. I will read a series of statements and after each one I would like to know whether you strongly agree, agree, disagree, or strongly disagree. RESPONSE CHOICE: "Employment of both parents is necessary to keep up with the high cost of living."	R84185.04	1898 1 Strongly agree 4122 2 Agree 1271 3 Disagree 205 4 Strongly Disagree 121 8 (DK) 28 9 (REFUSE) ----- 7645 Refusal(-1) 0 Don't Know(-2) 0 TOTAL =====> 7645 VALID SKIP(-4) 16 NON-INTERVIEW(-5) 5025 Min: 1 Max: 9 Mean: 2.09

Gender Role Attitude 6 2004 FAMILY ATTITUDES - TRADITIONAL HUSBAND/WIFE ROLES BEST?	We are interested in your opinion about the employment of wives. I will read a series of statements and after each one I would like to know whether you strongly agree, agree, disagree, or strongly disagree. RESPONSE CHOICE: "It is much better for everyone concerned if the man is the achiever outside the home and the woman takes care of the home and family."		271 1 Strongly agree 1660 2 Agree 4040 3 Disagree 1446 4 Strongly Disagree 195 8 (DK) 33 9 (REFUSE) ----- 7645 Refusal(-1) 0 Don't Know(-2) 0 TOTAL =====> 7645 VALID SKIP(-4) 16 NON-INTERVIEW(-5) 5025 Min: 1 Max: 9 Mean: 3.05
Gender Role Attitude 7 2004 FAMILY ATTITUDES - MEN SHOULD SHARE HOUSEWORK?	We are interested in your opinion about the employment of wives. I will read a series of statements and after each one I would like to know whether you strongly agree, agree, disagree, or strongly disagree. RESPONSE CHOICE: "Men should share the work around the house with women, such as doing dishes, cleaning, and so forth."	R84185.06	2778 1 Strongly agree 4440 2 Agree 278 3 Disagree 81 4 Strongly Disagree 49 8 (DK) 19 9 (REFUSE) ----- 7645 Refusal(-1) 0 Don't Know(-2) 0 TOTAL =====> 7645 VALID SKIP(-4) 16 NON-INTERVIEW(-5) 5025 Min: 1 Max: 9 Mean: 1.75
Gender Role Attitude 8 2004 FAMILY ATTITUDES - WOMEN ARE HAPPIER IN TRADITIONAL ROLES?	We are interested in your opinion about the employment of wives. I will read a series of statements and after each one I would like to know whether you strongly agree, agree, disagree, or strongly disagree. RESPONSE CHOICE: "Women are much happier if they stay at home and take care of their children."	R84185.07	242 1 Strongly agree 1929 2 Agree 3913 3 Disagree 917 4 Strongly Disagree 587 8 (DK) 57 9 (REFUSE) ----- 7645 Refusal(-1) 0 Don't Know(-2) 0 TOTAL =====> 7645 VALID SKIP(-4) 16 NON-INTERVIEW(-5) 5025 Min: 1 Max: 9 Mean: 3.23

<p>Education of Respondent 2008</p> <p>Highest Grade Completed as of May 1 Survey Year (Revised) 2008</p>	<p>COMMENT: Highest Grade Completed (Revised) DATA CORRECTION: 383 CASES WERE CORRECTED FROM A CODE OF "12" TO A CODE OF LESS THAN 12, ON 11/17/10. SEE ERRATA FOR 1979-2008 RELEASE, MAY 2010 FOR FURTHER DETAILS.</p>	<p>T22107.00</p>	<p>4 0 NONE 0 93 PRE-KINDERGARTEN 0 94 KINDERGARTEN 2 1 1ST GRADE 0 2 2ND GRADE 10 3 3RD GRADE 8 4 4TH GRADE 6 5 5TH GRADE 28 6 6TH GRADE 39 7 7TH GRADE 112 8 8TH GRADE 183 9 9TH GRADE 177 10 10TH GRADE 215 11 11TH GRADE 3337 12 12TH GRADE 691 13 1ST YEAR COLLEGE 818 14 2ND YEAR COLLEGE 406 15 3RD YEAR COLLEGE 912 16 4TH YEAR COLLEGE 224 17 5TH YEAR COLLEGE 299 18 6TH YEAR COLLEGE 122 19 7TH YEAR COLLEGE 164 20 8TH YEAR COLLEGE OR MORE 0 95 UNGRADED</p> <p>----- 7757</p> <p>Refusal(-1) 0 Don't Know(-2) 0 TOTAL =====> 7757 VALID SKIP(-4) 0 NON-INTERVIEW(-5) 4929</p>
<p>Respondent Income from Wages 2008</p> <p>TOTAL INCOME FROM WAGES AND SALARY IN PAST CALENDAR YEAR (TRUNCATED)</p>	<p>[During/(Not counting any money you received from your military service...) During] [calendar year prior to survey year], how much did you receive from wages, salary, commissions, or tips from all (other) jobs, before deductions for taxes or anything else?</p>	<p>T20767.00</p>	<p>1383 0 67 1 TO 999 68 1000 TO 1999 58 2000 TO 2999 63 3000 TO 3999 53 4000 TO 4999 63 5000 TO 5999 40 6000 TO 6999 48 7000 TO 7999 60 8000 TO 8999 37 9000 TO 9999 366 10000 TO 14999 370 15000 TO 19999 470 20000 TO 24999 2165 25000 TO 49999 2117 50000 TO 99999999: 50000+</p> <p>----- 7428</p> <p>Refusal(-1) 127 (Go To T20772.00) Don't Know(-2) 191 (Go To T20775.00) Invalid Skip(-3) 2 TOTAL =====> 7748</p>

			VALID SKIP(-4) 9 NON-INTERVIEW(-5) 4929 Min: 0 Max: 307823 Mean: 40172.11
Respondent Income from Farm or Business TOTAL INCOME FROM FARM OR BUSINESS IN PAST CALENDAR YEAR (TRUNCATED)	How much did you receive after expenses from [your (farm(s) and/or business(es)/professional practice(s))]?	T20788.00	18 0 20 1 TO 999 20 1000 TO 1999 19 2000 TO 2999 6 3000 TO 3999 7 4000 TO 4999 16 5000 TO 5999 7 6000 TO 6999 4 7000 TO 7999 5 8000 TO 8999 1 9000 TO 9999 33 10000 TO 14999 23 15000 TO 19999 21 20000 TO 24999 56 25000 TO 49999 60 50000 TO 99999999: 50000+ ----- 316 Refusal(-1) 2 (Go To <u>T20791.00</u>) Don't Know(-2) 13 (Go To <u>T20794.00</u>) TOTAL =====> 331 VALID SKIP(-4) 7426 NON-INTERVIEW(-5) 4929 Min: 0 Max: 315400 Mean: 30985.41
I.Q. of Respondent Survey Year: 1981 PROFILES, ARMED FORCES QUALIFICATION TEST (AFQT) %ILE SCORE - REVISED 2006	ORIGINAL QUESTION NAME: *CREATED SEE ATTACHMENT 106 ADDENDUM FOR DEFINITIONS NOTE: (SEE R(6182.)) 3 IMPLIED DECIMAL PLACES		ACTUAL %AGE UNIVERSE: All Refusal(-1) 0 Don't Know(-2) 0 TOTAL =====> 11914 VALID SKIP(-4) 281 NON-INTERVIEW(-5) 491 Min: 0 Max: 100000 Mean: 42395.61

Appendix B - Copy of Programming and Output Files

Child Rename

```
PROC SQL;
CREATE TABLE DISS.CHILD AS
SELECT C0000100 AS CID,

C0005700 AS CBIRTHDATE,
C0000200 AS CMOMID,
C0005300 AS CRACE,
C0005400 AS CSEX,
C0005800 AS CBIRTHORD,
C0580900 AS CPPVTRAW86,
C0581000 AS CPPVTSTD86,
C0581100 AS CPPVTPRCT86,
C3857600 AS CRELBAP08,
C3857601 AS CRELEPIS08,
C3857602 AS CRELLUT08,
C3857603 AS CRELMETH08,
C3857604 AS CRELPRES08,
C3857605 AS CRELCATH08,
C3857606 AS CRELJEW08,
C3857607 AS CRELMUS08,
C3857608 AS CRELMORM08,
C3857609 AS CRELOCHR08,
C3857610 AS CRELOPROS08,
C3857611 AS CRELOT08,
C3857612 AS CRELNONE08,
Y1638400 AS CWAGE04,
Y1638500 AS CWAGEEST04,
Y1639000 AS CFARM04,
Y1639700 AS CSWAGE04,
Y1640100 AS CSFARM04,
Y1644900 AS CCREDCRD04,
Y1645300 AS CFAMINC04,
Y1645400 AS CFAMINCE04,
Y1645500 AS CFB104,
Y1645600 AS CFB204,
Y1645700 AS CFB304,
Y1672700 AS CAGE04,
Y1672900 AS CED04,
Y1908700 AS CWAGE06,
Y1908800 AS CWAGEEST06,
Y1909300 AS CFARM06,
Y1910100 AS CSWAGE06,
Y1910600 AS CSFARM06,
Y1917200 AS CFB106,
Y1917300 AS CFB206,
Y1917400 AS CFB306,
Y1920501 AS CGRA106,
Y1920502 AS CGRA206,
Y1920503 AS CGRA306,
Y1920505 AS CGRA406,
```



```

Y1920506 AS CGRA506,
Y1920507 AS CGRA606,
Y1920508 AS CGRA706,
Y1948500 AS CAGE06,
Y1948700 AS CED06,
Y1948900 AS CMS06,
Y2017000 AS CCHORES08,
Y2017002 AS CMONEY08,
Y2018006 AS CHHFIN08,
Y2018106 AS CSHHFIN08,
Y2018300 AS CSEPACCT08,
Y2018301 AS CJOINTAC08,
Y2018302 AS CSEPCC08,
Y2018303 AS CJOINTCC08,
Y2018400 AS CSHAREEXP08,
Y2224100 AS CWAGE08,
Y2224200 AS CWAGEEST08,
Y2224500 AS CFARMA08,
Y2224600 AS CFARMB08,
Y2225400 AS CSWAGE08,
Y2225900 AS CSFARM08,
Y2232300 AS CFAMINC08,
Y2232400 AS CFAMINCE08,
Y2232500 AS CFB108,
Y2232600 AS CFB208,
Y2232700 AS CFB308,
Y2236500 AS CGRA108,
Y2236600 AS CGRA208,
Y2236700 AS CGRA308,
Y2236800 AS CGRA408,
Y2236900 AS CGRA508,
Y2237000 AS CGRA608,
Y2237100 AS CGRA708,
Y2237200 AS CGRA808,
Y2267100 AS CAGE08,
Y2267300 AS CED08,
Y2267500 AS CMS08,
Y2267800 AS CREGION08

```

```
FROM DISS.CHILD;
```

Adult Rename

```

PROC SQL;
CREATE TABLE DISS.ADULT AS
SELECT R0000100 AS ID,

```

```

R0214700 AS RACE,
R0214800 AS SEX,
R0216400 AS REGION79,
R0618301 AS AFQT06,
R8315800 AS MIL04,
R8316300 AS WAGE04,
R8318200 AS FARM04,
R8325100 AS SMIL04,
R8325800 AS SWAGE04,
R8328000 AS SFARM04,

```

R8418500 AS GRA104,
R8418501 AS GRA204,
R8418502 AS GRA304,
R8418503 AS GRA404,
R8418504 AS GRA504,
R8418505 AS GRA604,
R8418506 AS GRA704,
R8418507 AS GRA804,
R8496000 AS FAM04,
R8497000 AS ED04,
R8497200 AS AGE04,
T0911800 AS MIL06,
T0911900 AS MILLOW06,
T0912000 AS MILHI06,
T0912400 AS WAGE06,
T0912600 AS WAGELOW06,
T0912800 AS WAGEHI06,
T0913900 AS FARM06,
T0914100 AS FARMLOW06,
T0914300 AS FARMHI06,
T0920200 AS SMIL06,
T0920300 AS SMILLOW06,
T0920400 AS SMILHI06,
T0920800 AS SWAGE06,
T0920900 AS SWAGELOW06,
T0921100 AS SWAGEHI06,
T0922200 AS SFARM06,
T0922300 AS SFARMLOW06,
T0922400 AS SFARMHI06,
T0960500 AS RISK106,
T0960600 AS RISK1LOW06,
T0960700 AS RISK1HI06,
T0960800 AS RISK206,
T0960900 AS RISK2LOW06,
T0961000 AS RISK2HI06,
T0961100 AS RISK306,
T0961200 AS RISK3LOW06,
T0961300 AS RISK3HI06,
T0961400 AS RISK406,
T0961500 AS RISK4LOW06,
T0961600 AS RISK4HI06,
T0987600 AS FAM06,
T0988800 AS ED06,
T0989000 AS AGE06,
T1298000 AS OCC08,
T2050600 AS CHORES08,
T2050602 AS MONEY08,
T2076100 AS MIL08,
T2076400 AS MILLOW08,
T2076500 AS MILHIGH08,
T2076700 AS WAGE08,
T2076900 AS WAGELOW08,
T2077100 AS WAGEHI08,
T2078800 AS FARM08,
T2084900 AS SMIL08,
T2085000 AS SMILLOW08,
T2085100 AS SMILHI08,

```

T2085500 AS SWAGEA08,
T2085700 AS SWAGEB08,
T2209900 AS FAM08,
T2210300 AS REGION08,
T2210500 AS MS08,
T2210700 AS ED08,
T2210800 AS AGE08

FROM DISS.ADULT;
PROC SQL;
CREATE TABLE DISS.ADULT AS
SELECT R0000100 AS ID,

```

```

R0214700 AS RACE,
R0214800 AS SEX,
R0216400 AS REGION79,
R0618301 AS AFQT06,
R8315800 AS MIL04,
R8316300 AS WAGE04,
R8318200 AS FARM04,
R8325100 AS SMIL04,
R8325800 AS SWAGE04,
R8328000 AS SFARM04,
R8418500 AS GRA104,
R8418501 AS GRA204,
R8418502 AS GRA304,
R8418503 AS GRA404,
R8418504 AS GRA504,
R8418505 AS GRA604,
R8418506 AS GRA704,
R8418507 AS GRA804,
R8496000 AS FAM04,
R8497000 AS ED04,
R8497200 AS AGE04,
T0911800 AS MIL06,
T0911900 AS MILLOW06,
T0912000 AS MILHI06,
T0912400 AS WAGE06,
T0912600 AS WAGEL06,
T0912800 AS WAGEHI06,
T0913900 AS FARM06,
T0914100 AS FARML06,
T0914300 AS FARMHI06,
T0920200 AS SMIL06,
T0920300 AS SMILLOW06,
T0920400 AS SMILHI06,
T0920800 AS SWAGE06,
T0920900 AS SWAGEL06,
T0921100 AS SWAGEHI06,
T0922200 AS SFARM06,
T0922300 AS SFARML06,
T0922400 AS SFARMHI06,
T0960500 AS RISK106,
T0960600 AS RISK1LOW06,
T0960700 AS RISK1HI06,
T0960800 AS RISK206,
T0960900 AS RISK2LOW06,

```

```

T0961000 AS RISK2HI06,
T0961100 AS RISK306,
T0961200 AS RISK3LOW06,
T0961300 AS RISK3HI06,
T0961400 AS RISK406,
T0961500 AS RISK4LOW06,
T0961600 AS RISK4HI06,
T0987600 AS FAM06,
T0988800 AS ED06,
T0989000 AS AGE06,
T1298000 AS OCC08,
T2050600 AS CHORES08,
T2050602 AS MONEY08,
T2076100 AS MIL08,
T2076400 AS MILLOW08,
T2076500 AS MILHIGH08,
T2076700 AS WAGE08,
T2076900 AS WAGELOW08,
T2077100 AS WAGEHI08,
T2078800 AS FARM08,
T2084900 AS SMIL08,
T2085000 AS SMILLOW08,
T2085100 AS SMILHI08,
T2085500 AS SWAGEA08,
T2085700 AS SWAGEB08,
T2209900 AS FAM08,
T2210300 AS REGION08,
T2210500 AS MS08,
T2210700 AS ED08,
T2210800 AS AGE08

```

```
FROM DISS.ADULT;
```

Regression Editor Paper 1

```
DATA REGRESSION; SET DISS.FINAL;
```

```
IF CSEX=1 THEN CSEX=1;
ELSE IF CSEX=2 THEN CSEX=0; *1=MALE 0=FEMALE;
```

```
IF CBIRTHORD=1 THEN BO=1; ELSE IF CBIRTHORD IN (2 3 4 5 6 7 8 9 10 11) THEN
BO = 0; ELSE BO = .;
```

```
SUMCFB=CFB108 + CFB208 + CFB308;
CINCOME08=SUM(CWAGE08, CFARMB08);
IF CRACE=1 THEN CRACE1=1; ELSE CRACE1=0;
IF CRACE=2 THEN CRACE2=1; ELSE CRACE2=0;
IF CRACE=3 THEN CRACE3=1; ELSE CRACE3=0;
```

```
IF CREGION08=1 THEN CREGION1=1; ELSE CREGION1=0;
IF CREGION08=2 THEN CREGION2=1; ELSE CREGION2=0;
IF CREGION08=3 THEN CREGION3=1; ELSE CREGION3=0;
IF CREGION08=4 THEN CREGION4=1; ELSE CREGION4=0;
```

```
IF CMS08 = 1 THEN CMS08 = 1;
ELSE IF CMS08 = 0 THEN CMS08 = 0;
ELSE IF CMS08 = 2 THEN CMS08 = 0;
```

```

ELSE IF CMS08 = 3 THEN CMS08 = 0;
ELSE IF CMS08 = 6 THEN CMS08 = 0;

IF CMONEY08 = 1 THEN CMONEY08bi = 1;
ELSE IF CMONEY08 = 2 THEN CMONEY08bi = 1;
ELSE IF CMONEY08 = 3 THEN CMONEY08bi = 0;
ELSE IF CMONEY08 = 4 THEN CMONEY08bi = 0;
else if cmoney08=. then cmoney08bi=.;
else cmoney08=.;

proc freq; tables cmoney08 cmoney08bi;
RUN;

PROC FREQ; TABLES CSEX

CRACE1 CRACE2 CRACE3 CRACE CREGION08 CREGION1 CREGION2 CREGION3 CREGION4
CBIRTHORD CFB108
CFB208
CFB308 SUMCFB CBIRTHORD SUMGRA CMONEY08;
PROC MEANS MEAN MEDIAN MIN MAX N; VAR CSEX CPPVTRAW86 CAGE08 CED08 CWAGE08
CWAGEEST08 CFARMA08 CFARMB08 CINCOME08; RUN;

DATA REGRESSION2; SET REGRESSION;

IF CINCOME08 = . THEN CINCOME08_NOMISS=21836; ELSE
CINCOME08_NOMISS=CINCOME08;
LOGINC_NOMISS = LOG(CINCOME08_NOMISS);
IF CPPVTRAW86 LT 0 THEN CPPVTRAW86_NOMISS=58.77; ELSE
CPPVTRAW86_NOMISS=CPPVTRAW86;
LOGCPPVTRAW86_NOMISS = LOG(CPPVTRAW86_NOMISS);

CINCOME08_1000=CINCOME08/1000;
PROC LOGISTIC DESCENDING SIMPLE ;
MODEL CMONEY08bi = SUMCFB LOGCPPVTRAW86_NOMISS CED08 CINCOME08_1000 CSEX
CAGE08 BO /STB;RUN; QUIT;

DATA REGRESSION2; SET REGRESSION2;
IF CMONEY08BI IN (1 0);
IF SUMCFB;
PROC FREQ; TABLES CMONEY08 CMONEY08BI SUMCGRA SUMCFB BO CSEX;
PROC MEANS; VAR CMONEY08 SUMCFB LOGCPPVTRAW86_NOMISS CAGE08 CED08 CINCOME08
BO CSEX; RUN;
DATA REGRESSION; SET DISS.FINAL;

IF CSEX=1 THEN CSEX=1;
ELSE IF CSEX=2 THEN CSEX=0; *1=MALE 0=FEMALE;

IF CBIRTHORD=1 THEN BO=1; ELSE IF CBIRTHORD IN (2 3 4 5 6 7 8 9 10 11) THEN
BO = 0; ELSE BO = .;

SUMCFB=CFB108 + CFB208 + CFB308;

```

```

CINCOME08=SUM(CWAGE08, CFARMB08);
IF CRACE=1 THEN CRACE1=1; ELSE CRACE1=0;
IF CRACE=2 THEN CRACE2=1; ELSE CRACE2=0;
IF CRACE=3 THEN CRACE3=1; ELSE CRACE3=0;

IF CREGION08=1 THEN CREGION1=1; ELSE CREGION1=0;
IF CREGION08=2 THEN CREGION2=1; ELSE CREGION2=0;
IF CREGION08=3 THEN CREGION3=1; ELSE CREGION3=0;
IF CREGION08=4 THEN CREGION4=1; ELSE CREGION4=0;

IF CMS08 = 1 THEN CMS08 = 1;
ELSE IF CMS08 = 0 THEN CMS08 = 0;
ELSE IF CMS08 = 2 THEN CMS08 = 0;
ELSE IF CMS08 = 3 THEN CMS08 = 0;
ELSE IF CMS08 = 6 THEN CMS08 = 0;

IF CMONEY08 = 1 THEN CMONEY08bi = 1;
ELSE IF CMONEY08 = 2 THEN CMONEY08bi = 1;
ELSE IF CMONEY08 = 3 THEN CMONEY08bi = 0;
ELSE IF CMONEY08 = 4 THEN CMONEY08bi = 0;
else if cmoney08=. then cmoney08bi=.;
else cmoney08=.;

proc freq; tables cmoney08 cmoney08bi;
run;

PROC FREQ; TABLES CSEX

CRACE1 CRACE2 CRACE3 CRACE CREGION08 CREGION1 CREGION2 CREGION3 CREGION4
CBIRTHORD CFB108
CFB208
CFB308 SUMCFB CBIRTHORD SUMGRA CMONEY08;
PROC MEANS MEAN MEDIAN MIN MAX N; VAR CSEX CPPVTRAW86 CAGE08 CED08 CWAGE08
CWAGEEST08 CFARMA08 CFARMB08 CINCOME08; RUN;

DATA REGRESSION2; SET REGRESSION;

IF CINCOME08 = . THEN CINCOME08_NOMISS=21836; ELSE
CINCOME08_NOMISS=CINCOME08;
LOGINC_NOMISS = LOG(CINCOME08_NOMISS);
IF CPPVTRAW86 LT 0 THEN CPPVTRAW86_NOMISS=58.77; ELSE
CPPVTRAW86_NOMISS=CPPVTRAW86;
LOGCPPVTRAW86_NOMISS = LOG(CPPVTRAW86_NOMISS);

CINCOME08_1000=CINCOME08/1000;
PROC LOGISTIC DESCENDING SIMPLE ;
MODEL CMONEY08bi = SUMCFB LOGCPPVTRAW86_NOMISS CED08 CINCOME08_1000 CSEX
CAGE08 BO /STB;RUN; QUIT;

DATA REGRESSION2; SET REGRESSION2;
IF CMONEY08BI IN (1 0);

```

```

IF SUMCFB;
PROC FREQ; TABLES CMONEY08 CMONEY08BI SUMCGRA SUMCFB BO CSEX;
PROC MEANS; VAR CMONEY08 SUMCFB LOGCPPVTRAW86_NOMISS CAGE08 CED08 CINCOME08
BO CSEX; RUN;
DATA REGRESSION; SET DISS.FINAL;

IF CSEX=1 THEN CSEX=1;
ELSE IF CSEX=2 THEN CSEX=0; *1=MALE 0=FEMALE;

IF CBIRTHORD=1 THEN BO=1; ELSE IF CBIRTHORD IN (2 3 4 5 6 7 8 9 10 11) THEN
BO = 0; ELSE BO = .;

SUMCFB=CFB108 + CFB208 + CFB308;
CINCOME08=SUM(CWAGE08, CFARMB08);
IF CRACE=1 THEN CRACE1=1; ELSE CRACE1=0;
IF CRACE=2 THEN CRACE2=1; ELSE CRACE2=0;
IF CRACE=3 THEN CRACE3=1; ELSE CRACE3=0;

IF CREGION08=1 THEN CREGION1=1; ELSE CREGION1=0;
IF CREGION08=2 THEN CREGION2=1; ELSE CREGION2=0;
IF CREGION08=3 THEN CREGION3=1; ELSE CREGION3=0;
IF CREGION08=4 THEN CREGION4=1; ELSE CREGION4=0;

IF CMS08 = 1 THEN CMS08 = 1;
ELSE IF CMS08 = 0 THEN CMS08 = 0;
ELSE IF CMS08 = 2 THEN CMS08 = 0;
ELSE IF CMS08 = 3 THEN CMS08 = 0;
ELSE IF CMS08 = 6 THEN CMS08 = 0;

IF CMONEY08 = 1 THEN CMONEY08bi = 1;
ELSE IF CMONEY08 = 2 THEN CMONEY08bi = 1;
ELSE IF CMONEY08 = 3 THEN CMONEY08bi = 0;
ELSE IF CMONEY08 = 4 THEN CMONEY08bi = 0;
else if cmoney08=. then cmoney08bi=.;
else cmoney08=.;

proc freq; tables cmoney08 cmoney08bi;
RUN;

PROC FREQ; TABLES CSEX

CRACE1 CRACE2 CRACE3 CRACE CREGION08 CREGION1 CREGION2 CREGION3 CREGION4
CBIRTHORD CFB108
CFB208
CFB308 SUMCFB CBIRTHORD SUMGRA CMONEY08;
PROC MEANS MEAN MEDIAN MIN MAX N; VAR CSEX CPPVTRAW86 CAGE08 CED08 CWAGE08
CWAGEEST08 CFARMA08 CFARMB08 CINCOME08; RUN;

DATA REGRESSION2; SET REGRESSION;

IF CINCOME08 = . THEN CINCOME08_NOMISS=21836; ELSE
CINCOME08_NOMISS=CINCOME08;

```

```

LOGINC_NOMISS = LOG(CINCOME08_NOMISS);
IF CPPVTRAW86 LT 0 THEN CPPVTRAW86_NOMISS=58.77; ELSE
CPPVTRAW86_NOMISS=CPPVTRAW86;
LOGCPPVTRAW86_NOMISS = LOG(CPPVTRAW86_NOMISS);

CINCOME08_1000=CINCOME08/1000;
PROC LOGISTIC DESCENDING SIMPLE ;
MODEL CMONEY08bi = SUMCFB LOGCPPVTRAW86_NOMISS CED08 CINCOME08_1000 CSEX
CAGE08 BO /STB;RUN; QUIT;


DATA REGRESSION2; SET REGRESSION2;
IF CMONEY08BI IN (1 0);
IF SUMCFB;
PROC FREQ; TABLES CMONEY08 CMONEY08BI SUMCGRA SUMCFB BO CSEX;
PROC MEANS; VAR CMONEY08 SUMCFB LOGCPPVTRAW86_NOMISS CAGE08 CED08 CINCOME08
BO CSEX; RUN;
DATA REGRESSION; SET DISS.FINAL;

IF CSEX=1 THEN CSEX=1;
ELSE IF CSEX=2 THEN CSEX=0; *1=MALE 0=FEMALE;

IF CBIRTHORD=1 THEN BO=1; ELSE IF CBIRTHORD IN (2 3 4 5 6 7 8 9 10 11) THEN
BO = 0; ELSE BO = .;

SUMCFB=CFB108 + CFB208 + CFB308;
CINCOME08=SUM(CWAGE08, CFARM08);
IF CRACE=1 THEN CRACE1=1; ELSE CRACE1=0;
IF CRACE=2 THEN CRACE2=1; ELSE CRACE2=0;
IF CRACE=3 THEN CRACE3=1; ELSE CRACE3=0;

IF CREGION08=1 THEN CREGION1=1; ELSE CREGION1=0;
IF CREGION08=2 THEN CREGION2=1; ELSE CREGION2=0;
IF CREGION08=3 THEN CREGION3=1; ELSE CREGION3=0;
IF CREGION08=4 THEN CREGION4=1; ELSE CREGION4=0;

IF CMS08 = 1 THEN CMS08 = 1;
ELSE IF CMS08 = 0 THEN CMS08 = 0;
ELSE IF CMS08 = 2 THEN CMS08 = 0;
ELSE IF CMS08 = 3 THEN CMS08 = 0;
ELSE IF CMS08 = 6 THEN CMS08 = 0;

IF CMONEY08 = 1 THEN CMONEY08bi = 1;
ELSE IF CMONEY08 = 2 THEN CMONEY08bi = 1;
ELSE IF CMONEY08 = 3 THEN CMONEY08bi = 0;
ELSE IF CMONEY08 = 4 THEN CMONEY08bi = 0;
else if cmoney08=. then cmoney08bi=.;
else cmoney08=.;

proc freq; tables cmoney08 cmoney08bi;
RUN;

PROC FREQ; TABLES CSEX

CRACE1 CRACE2 CRACE3 CRACE CREGION08 CREGION1 CREGION2 CREGION3 CREGION4
CBIRTHORD CFB108

```



```

CFB208
CFB308 SUMCFB CBIRTHORD SUMGRA CMONEY08;
PROC MEANS MEAN MEDIAN MIN MAX N; VAR CSEX CPPVTRAW86 CAGE08 CED08 CWAGE08
CWAGEEST08 CFARMA08 CFARMB08 CINCOME08; RUN;

DATA REGRESSION2; SET REGRESSION;

IF CINCOME08 = . THEN CINCOME08_NOMISS=21836; ELSE
CINCOME08_NOMISS=CINCOME08;
LOGINC_NOMISS = LOG(CINCOME08_NOMISS);
IF CPPVTRAW86 LT 0 THEN CPPVTRAW86_NOMISS=58.77; ELSE
CPPVTRAW86_NOMISS=CPPVTRAW86;
LOGCPPVTRAW86_NOMISS = LOG(CPPVTRAW86_NOMISS);

CINCOME08_1000=CINCOME08/1000;
PROC LOGISTIC DESCENDING SIMPLE ;
MODEL CMONEY08bi = SUMCFB LOGCPPVTRAW86_NOMISS CED08 CINCOME08_1000 CSEX
CAGE08 BO /STB;RUN; QUIT;

DATA REGRESSION2; SET REGRESSION2;
IF CMONEY08BI IN (1 0);
IF SUMCFB;
PROC FREQ; TABLES CMONEY08 CMONEY08BI SUMCGRA SUMCFB BO CSEX;
PROC MEANS; VAR CMONEY08 SUMCFB LOGCPPVTRAW86_NOMISS CAGE08 CED08 CINCOME08
BO CSEX; RUN;
DATA REGRESSION; SET DISS.FINAL;

IF CSEX=1 THEN CSEX=1;
ELSE IF CSEX=2 THEN CSEX=0; *1=MALE 0=FEMALE;

IF CBIRTHORD=1 THEN BO=1; ELSE IF CBIRTHORD IN (2 3 4 5 6 7 8 9 10 11) THEN
BO = 0; ELSE BO = .;

SUMCFB=CFB108 + CFB208 + CFB308;
CINCOME08=SUM(CWAGE08, CFARMB08);
IF CRACE=1 THEN CRACE1=1; ELSE CRACE1=0;
IF CRACE=2 THEN CRACE2=1; ELSE CRACE2=0;
IF CRACE=3 THEN CRACE3=1; ELSE CRACE3=0;

IF CREGION08=1 THEN CREGION1=1; ELSE CREGION1=0;
IF CREGION08=2 THEN CREGION2=1; ELSE CREGION2=0;
IF CREGION08=3 THEN CREGION3=1; ELSE CREGION3=0;
IF CREGION08=4 THEN CREGION4=1; ELSE CREGION4=0;

IF CMS08 = 1 THEN CMS08 = 1;
ELSE IF CMS08 = 0 THEN CMS08 = 0;
ELSE IF CMS08 = 2 THEN CMS08 = 0;
ELSE IF CMS08 = 3 THEN CMS08 = 0;
ELSE IF CMS08 = 6 THEN CMS08 = 0;

IF CMONEY08 = 1 THEN CMONEY08bi = 1;
ELSE IF CMONEY08 = 2 THEN CMONEY08bi = 1;

```

```

ELSE IF CMONEY08 = 3 THEN CMONEY08bi = 0;
ELSE IF CMONEY08 = 4 THEN CMONEY08bi = 0;
else if cmoney08=. then cmoney08bi=.;
else cmoney08=.;

proc freq; tables cmoney08 cmoney08bi;
run;

PROC FREQ; TABLES CSEX

CRACE1 CRACE2 CRACE3 CRACE CREGION08 CREGION1 CREGION2 CREGION3 CREGION4
CBIRTHORD CFB108
CFB208
CFB308 SUMCFB CBIRTHORD SUMGRA CMONEY08;
PROC MEANS MEAN MEDIAN MIN MAX N; VAR CSEX CPPVTRAW86 CAGE08 CED08 CWAGE08
CWAGEEST08 CFARMA08 CFARMB08 CINCOME08; RUN;

DATA REGRESSION2; SET REGRESSION;

IF CINCOME08 = . THEN CINCOME08_NOMISS=21836; ELSE
CINCOME08_NOMISS=CINCOME08;
LOGINC_NOMISS = LOG(CINCOME08_NOMISS);
IF CPPVTRAW86 LT 0 THEN CPPVTRAW86_NOMISS=58.77; ELSE
CPPVTRAW86_NOMISS=CPPVTRAW86;
LOGCPPVTRAW86_NOMISS = LOG(CPPVTRAW86_NOMISS);

CINCOME08_1000=CINCOME08/1000;
PROC LOGISTIC DESCENDING SIMPLE ;
MODEL CMONEY08bi = SUMCFB LOGCPPVTRAW86_NOMISS CED08 CINCOME08_1000 CSEX
CAGE08 BO /STB;RUN; QUIT;

DATA REGRESSION2; SET REGRESSION2;
IF CMONEY08BI IN (1 0);
IF SUMCFB;
PROC FREQ; TABLES CMONEY08 CMONEY08BI SUMCGRA SUMCFB BO CSEX;
PROC MEANS; VAR CMONEY08 SUMCFB LOGCPPVTRAW86_NOMISS CAGE08 CED08 CINCOME08
BO CSEX; RUN;
DATA REGRESSION; SET DISS.FINAL;

IF CSEX=1 THEN CSEX=1;
ELSE IF CSEX=2 THEN CSEX=0; *1=MALE 0=FEMALE;

IF CBIRTHORD=1 THEN BO=1; ELSE IF CBIRTHORD IN (2 3 4 5 6 7 8 9 10 11) THEN
BO = 0; ELSE BO = .;

SUMCFB=CFB108 + CFB208 + CFB308;
CINCOME08=SUM(CWAGE08, CFARMB08);
IF CRACE=1 THEN CRACE1=1; ELSE CRACE1=0;
IF CRACE=2 THEN CRACE2=1; ELSE CRACE2=0;
IF CRACE=3 THEN CRACE3=1; ELSE CRACE3=0;

```

```

IF CREGION08=1 THEN CREGION1=1; ELSE CREGION1=0;
IF CREGION08=2 THEN CREGION2=1; ELSE CREGION2=0;
IF CREGION08=3 THEN CREGION3=1; ELSE CREGION3=0;
IF CREGION08=4 THEN CREGION4=1; ELSE CREGION4=0;

IF CMS08 = 1 THEN CMS08 = 1;
ELSE IF CMS08 = 0 THEN CMS08 = 0;
ELSE IF CMS08 = 2 THEN CMS08 = 0;
ELSE IF CMS08 = 3 THEN CMS08 = 0;
ELSE IF CMS08 = 6 THEN CMS08 = 0;

IF CMONEY08 = 1 THEN CMONEY08bi = 1;
ELSE IF CMONEY08 = 2 THEN CMONEY08bi = 1;
ELSE IF CMONEY08 = 3 THEN CMONEY08bi = 0;
ELSE IF CMONEY08 = 4 THEN CMONEY08bi = 0;
else if cmoney08=. then cmoney08bi=.;
else cmoney08=.;

proc freq; tables cmoney08 cmoney08bi;
run;

PROC FREQ; TABLES CSEX

CRACE1 CRACE2 CRACE3 CRACE CREGION08 CREGION1 CREGION2 CREGION3 CREGION4
CBIRTHORD CFB108
CFB208
CFB308 SUMCFB CBIRTHORD SUMGRA CMONEY08;
PROC MEANS MEAN MEDIAN MIN MAX N; VAR CSEX CPPVTRAW86 CAGE08 CED08 CWAGE08
CWAGEEST08 CFARMA08 CFARMB08 CINCOME08; RUN;

DATA REGRESSION2; SET REGRESSION;

IF CINCOME08 = . THEN CINCOME08_NOMISS=21836; ELSE
CINCOME08_NOMISS=CINCOME08;
LOGINC_NOMISS = LOG(CINCOME08_NOMISS);
IF CPPVTRAW86 LT 0 THEN CPPVTRAW86_NOMISS=58.77; ELSE
CPPVTRAW86_NOMISS=CPPVTRAW86;
LOGCPPVTRAW86_NOMISS = LOG(CPPVTRAW86_NOMISS);

CINCOME08_1000=CINCOME08/1000;
PROC LOGISTIC DESCENDING SIMPLE ;
MODEL CMONEY08bi = SUMCFB LOGCPPVTRAW86_NOMISS CED08 CINCOME08_1000 CSEX
CAGE08 BO /STB;RUN; QUIT;

DATA REGRESSION2; SET REGRESSION2;
IF CMONEY08BI IN (1 0);
IF SUMCFB;
PROC FREQ; TABLES CMONEY08 CMONEY08BI SUMCGRA SUMCFB BO CSEX;
PROC MEANS; VAR CMONEY08 SUMCFB LOGCPPVTRAW86_NOMISS CAGE08 CED08 CINCOME08
BO CSEX; RUN;

```

Regression Output Paper 1

The SAS System

17:13 Tuesday, May 15, 2012 1

The FREQ Procedure

HOW FREQ R & PTR ARGUE ABT MONEY 2008

CMONEY08	Frequency	%	Cumulative Frequency	Cumulative %
1	147	15.93	147	15.93
2	262	28.39	409	44.31
3	302	32.72	711	77.03
4	212	22.97	923	100.00

Frequency Missing = 1658

CMONEY08bi	Frequency	%	Cumulative Frequency	Cumulative %
0	514	55.69	514	55.69
1	409	44.31	923	100.00

Frequency Missing = 1658

The FREQ Procedure

SEX OF CHILD

CSEX	Frequency	%	Cumulative Frequency	Cumulative %
0	1252	48.51	1252	48.51
1	1329	51.49	2581	100.00

CRACE1	Frequency	%	Cumulative Frequency	Cumulative %
0	2077	80.47	2077	80.47
1	504	19.53	2581	100.00

CRACE2	Frequency	%	Cumulative Frequency	Cumulative %
0	1440	55.79	1440	55.79
1	1141	44.21	2581	100.00

CRACE3	Frequency	%	Cumulative Frequency	Cumulative %
0	1645	63.73	1645	63.73
1	936	36.27	2581	100.00

RACE OF CHILD (FROM MOTHERS SCREENER 79)

CRACE	Frequency	%	Cumulative Frequency	Cumulative %
1	504	19.53	504	19.53
2	1141	44.21	1645	63.73
3	936	36.27	2581	100.00

The FREQ Procedure

REGION OF RESIDENCE 2008

CREGION08	Frequency	%	Cumulative Frequency	Cumulative %
1	230	10.16	230	10.16
2	523	23.11	753	33.27
3	1189	52.54	1942	85.82
4	321	14.18	2263	100.00

Frequency Missing = 318

CREGION1	Frequency	%	Cumulative Frequency	Cumulative %
0	2351	91.09	2351	91.09
1	230	8.91	2581	100.00

CREGION2	Frequency	%	Cumulative Frequency	Cumulative %
0	2058	79.74	2058	79.74
1	523	20.26	2581	100.00

CREGION3	Frequency	%	Cumulative Frequency	Cumulative %
0	1392	53.93	1392	53.93
1	1189	46.07	2581	100.00

CREGION4	Frequency	%	Cumulative Frequency	Cumulative %
0	2260	87.56	2260	87.56
1	321	12.44	2581	100.00

The FREQ Procedure

BIRTH ORDER OF CHILD

CBIRTHORD	Frequency	%	Cumulative	
			Frequency	%
1	866	33.55	866	33.55
2	800	31.00	1666	64.55
3	531	20.57	2197	85.12
4	226	8.76	2423	93.88
5	93	3.60	2516	97.48
6	34	1.32	2550	98.80
7	14	0.54	2564	99.34
8	9	0.35	2573	99.69
9	6	0.23	2579	99.92
10	2	0.08	2581	100.00

HOW OFTEN PUTS OFF BUYING NECESSARY 2008

CFB108	Frequency	%	Cumulative	
			Frequency	%
ff				
1	946	41.84	946	41.84
2	640	28.31	1586	70.15
3	417	18.44	2003	88.59
4	129	5.71	2132	94.29
5	129	5.71	2261	100.00

Frequency Missing = 320

DIFFICULTY PAYING BILLS 2008

CFB208	Frequency	%	Cumulative	
			Frequency	%
ff			ffffffffffffffffffffffffffffffff	ffffffffffffffff
1	810	36.00	810	36.00
2	675	30.00	1485	66.00
3	461	20.49	1946	86.49
4	191	8.49	2137	94.98
5	113	5.02	2250	100.00

Frequency Missing = 331

The FREQ Procedure

MONEY LEFT OVER AT END OF MONTH 2008

CFB308	Frequency	%	Cumulative Frequency	Cumulative %
1	243	10.86	243	10.86
2	1024	45.78	1267	56.64
3	789	35.27	2056	91.91
4	181	8.09	2237	100.00

Frequency Missing = 344

SUMCFB	Frequency	%	Cumulative Frequency	Cumulative %
3	166	7.43	166	7.43
4	341	15.26	507	22.68
5	352	15.75	859	38.43
6	345	15.44	1204	53.87
7	295	13.20	1499	67.07
8	249	11.14	1748	78.21
9	164	7.34	1912	85.55
10	143	6.40	2055	91.95
11	72	3.22	2127	95.17
12	58	2.60	2185	97.76
13	27	1.21	2212	98.97
14	23	1.03	2235	100.00

Frequency Missing = 346

BIRTH ORDER OF CHILD

CBIRTHORD	Frequency	%	Cumulative Frequency	Cumulative %
1	866	33.55	866	33.55
2	800	31.00	1666	64.55
3	531	20.57	2197	85.12
4	226	8.76	2423	93.88
5	93	3.60	2516	97.48
6	34	1.32	2550	98.80
7	14	0.54	2564	99.34
8	9	0.35	2573	99.69
9	6	0.23	2579	99.92
10	2	0.08	2581	100.00

The FREQ Procedure

SUMGRA	Frequency	%	Cumulative Frequency	Cumulative %
13	7	0.27	7	0.27
14	21	0.81	28	1.08
15	8	0.31	36	1.39
16	6	0.23	42	1.63
17	15	0.58	57	2.21
18	36	1.39	93	3.60
19	68	2.63	161	6.24
20	90	3.49	251	9.72
21	156	6.04	407	15.77
22	240	9.30	647	25.07
23	421	16.31	1068	41.38
24	511	19.80	1579	61.18
25	249	9.65	1828	70.83
26	230	8.91	2058	79.74
27	204	7.90	2262	87.64
28	106	4.11	2368	91.75
29	123	4.77	2491	96.51
30	34	1.32	2525	97.83
31	19	0.74	2544	98.57
32	37	1.43	2581	100.00

HOW FREQ R & PTR ARGUE ABT MONEY 2008

CMONEY08	Frequency	%	Cumulative Frequency	Cumulative %
1	147	15.93	147	15.93
2	262	28.39	409	44.31
3	302	32.72	711	77.03
4	212	22.97	923	100.00

Frequency Missing = 1658

The MEANS Procedure

Variable	Label	Mean	Median	Minimum
CSEX	SEX OF CHILD	0.5149167	1.0000000	0
CPPVTRAW86	PPVT: TOTAL RAW SCORE 86	58.7745665	59.0000000	0
CAGE08	AGE OF YA IN YEARS AT DATE OF INTV 2008	25.5315395	26.0000000	14.0000000
CED08	HIGHEST GRADE COMPLETED AS OF 2008 2008	12.5011028	12.0000000	6.0000000
CWAGE08	INCOME FR WAGES/SALARY/TIPS/COMM 07 2008	21388.67	17083.50	0
CWAGEEST08	INCOM FR WGS/SLRY/TPS 07 - BEST EST 2008	2.0230415	2.0000000	1.0000000
CFARMA08	INCOME FROM OWN FARM/BUSINESS IN 07 2008	12796.20	6000.00	0
CFARMB08	INCOME FROM OWN FARM/BUSINESS IN 07 2008	13065.44	6000.00	0
CINCOME08		21836.20	18000.00	0

Variable	Label	Maximum	N
CSEX	SEX OF CHILD	1.0000000	2581
CPPVTRAW86	PPVT: TOTAL RAW SCORE 86	149.0000000	1557
CAGE08	AGE OF YA IN YEARS AT DATE OF INTV 2008	36.0000000	2267
CED08	HIGHEST GRADE COMPLETED AS OF 2008 2008	20.0000000	2267
CWAGE08	INCOME FR WAGES/SALARY/TIPS/COMM 07 2008	119116.00	2024
CWAGEEST08	INCOM FR WGS/SLRY/TPS 07 - BEST EST 2008	5.0000000	217
CFARMA08	INCOME FROM OWN FARM/BUSINESS IN 07 2008	100000.00	71
CFARMB08	INCOME FROM OWN FARM/BUSINESS IN 07 2008	119116.00	71
CINCOME08		129116.00	2025

The LOGISTIC Procedure

Model Information

Data Set	WORK.REGRESSION2
Response Variable	CMONEY08bi
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	2581
Number of Observations Used	851

Response Profile

Ordered Value	CMONEY08bi	Total Frequency
1	1	377
2	0	474

Probability modeled is CMONEY08bi=1.

NOTE: 1730 observations were deleted due to missing values for the response or explanatory variables.

Descriptive Statistics for Continuous Variables

Variable	CMONEY08bi	Mean	Standard Deviation	Minimum	Maximum
SUMCFB	1	7.405836	2.502609	3.000000	14.000000
	0	6.107595	2.431955	3.000000	14.000000
	Total	6.682726	2.545200	3.000000	14.000000
LOGCPPVTRAW86_NOMISS	1	3.960497	0.616463	1.609438	4.934474
	0	4.005803	0.617401	1.609438	4.948760
	Total	3.985732	0.617034	1.609438	4.948760
CED08	1	12.822281	2.071265	7.000000	19.000000
	0	13.004219	2.458102	8.000000	20.000000
	Total	12.923619	2.295273	7.000000	20.000000
CINCOME08_1000	1	28.588321	21.816365	0	119.116000
	0	28.182205	22.995819	0	125.000000
	Total	28.362118	22.468783	0	125.000000

The LOGISTIC Procedure

Descriptive Statistics for Continuous Variables

Variable	CMONEY08bi	Mean	Standard Deviation	Minimum	Maximum
CSEX	1	0.511936	0.500522	0	1.000000
	0	0.523207	0.499989	0	1.000000

	Total	0.518214	0.499962	0	1.000000
CAGE08	1	27.384615	2.895903	20.000000	35.000000
	0	27.213080	3.098618	18.000000	35.000000

	Total	27.289072	3.009962	18.000000	35.000000
BO	1	0.424403	0.494909	0	1.000000
	0	0.521097	0.500083	0	1.000000

	Total	0.478261	0.499821	0	1.000000

Descriptive Statistics for Continuous Variables

Variable
Label

HIGHEST GRADE COMPLETED AS OF 2008 2008

SEX OF CHILD

AGE OF YA IN YEARS AT DATE OF INTV 2008

The LOGISTIC Procedure

Descriptive Statistics for Continuous Variables

Variable
Label

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	1170.656	1103.716
SC	1175.402	1141.688
-2 Log L	1168.656	1087.716

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	80.9398	7	<.0001
Score	78.1148	7	<.0001
Wald	71.4531	7	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Standardized Estimate
Intercept	1	-2.5726	0.8867	8.4177	0.0037	
SUMCFB	1	0.2431	0.0322	57.1488	<.0001	0.3411
LOGCPPVTRAW86_NOMISS	1	-0.2121	0.1369	2.4015	0.1212	-0.0721
CED08	1	-0.00389	0.0357	0.0119	0.9132	-0.00492
CINCOME08_1000	1	0.0113	0.00376	9.0666	0.0026	0.1401
CSEX	1	-0.0646	0.1574	0.1682	0.6817	-0.0178

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Standardized Estimate
CAGE08	1	0.0591	0.0309	3.6575	0.0558	0.0980
BO	1	-0.6262	0.1689	13.7448	0.0002	-0.1725

Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
SUMCFB	1.275	1.197	1.358
LOGCPPVTRAW86_NOMISS	0.809	0.619	1.058
CED08	0.996	0.929	1.068
CINCOME08_1000	1.011	1.004	1.019
CSEX	0.937	0.689	1.276
CAGE08	1.061	0.999	1.127
BO	0.535	0.384	0.744

Association of Predicted Probabilities and Observed Responses

% Concordant	67.4	Somers' D	0.351
% Discordant	32.3	Gamma	0.352
% Tied	0.3	Tau-a	0.173
Pairs	178698	c	0.675

The CORR Procedure

8 Variables: CMONEY08 SUMCFB LOGCPPVTRAW86_NOMISS CAGE08
CED08 CINCOME08 BO CSEX

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
CMONEY08	920	2.62935	1.00413	2419	1.00000	4.00000
SUMCFB	920	6.75326	2.55962	6213	3.00000	14.00000
LOGCPPVTRAW86_NOMISS	920	3.96551	0.62426	3648	1.60944	4.94876
CAGE08	920	27.20652	3.00539	25030	18.00000	35.00000
CED08	920	12.85652	2.29658	11828	7.00000	20.00000
CINCOME08	851	28362	22469	24136162	0	125000
BO	920	0.47283	0.49953	435.00000	0	1.00000
CSEX	920	0.52717	0.49953	485.00000	0	1.00000

Simple Statistics

Variable	Label
CMONEY08	HOW FREQ R & PTR ARGUE ABT MONEY 2008
SUMCFB	
LOGCPPVTRAW86_NOMISS	
CAGE08	AGE OF YA IN YEARS AT DATE OF INTV 2008
CED08	HIGHEST GRADE COMPLETED AS OF 2008 2008
CINCOME08	
BO	
CSEX	SEX OF CHILD

Pearson Correlation Coefficients
 Prob > |r| under H0: Rho=0
 Number of Observations

	CMONEY08	SUMCFB	LOGCPPVTRAW86_ NOMISS	CAGE08
CMONEY08	1.00000	-0.30658	0.01421	-0.05177
HOW FREQ R & PTR ARGUE ABT MONEY 2008	<.0001	0.6668	0.1166	
	920	920	920	920
SUMCFB	-0.30658	1.00000	-0.01234	0.05614
	<.0001	0.7086	0.0888	
	920	920	920	920
LOGCPPVTRAW86_NOMISS	0.01421	-0.01234	1.00000	0.46974
	0.6668	0.7086	<.0001	
	920	920	920	920
The SAS System			15:19 Tuesday, June 26, 2012 16	

The CORR Procedure

Pearson Correlation Coefficients
 Prob > |r| under H0: Rho=0
 Number of Observations

	CMONEY08	SUMCFB	LOGCPPVTRAW86_ NOMISS	CAGE08
CAGE08	-0.05177	0.05614	0.46974	1.00000
AGE OF YA IN YEARS AT DATE OF INTV 2008	0.1166	0.0888	<.0001	
	920	920	920	920
CED08	-0.04668	-0.18040	0.17593	0.18765
HIGHEST GRADE COMPLETED AS OF 2008 2008	0.1572	<.0001	<.0001	<.0001
	920	920	920	920
CINCOME08	-0.01683	-0.30557	0.18451	0.21545
	0.6239	<.0001	<.0001	<.0001
	851	851	851	851
BO	0.04606	0.00369	0.26003	0.47921
	0.1627	0.9111	<.0001	<.0001
	920	920	920	920
CSEX	0.05590	-0.07858	-0.06803	-0.00882
SEX OF CHILD	0.0902	0.0171	0.0391	0.7894
	920	920	920	920

Pearson Correlation Coefficients
 Prob > |r| under H0: Rho=0
 Number of Observations

	CED08	CINCOME08	BO	CSEX
CMONEY08	-0.04668	-0.01683	0.04606	0.05590
HOW FREQ R & PTR ARGUE ABT MONEY 2008	0.1572	0.6239	0.1627	0.0902
	920	851	920	920
SUMCFB	-0.18040	-0.30557	0.00369	-0.07858
	<.0001	<.0001	0.9111	0.0171
	920	851	920	920
LOGCPPVTRAW86_NOMISS	0.17593	0.18451	0.26003	-0.06803
	<.0001	<.0001	<.0001	0.0391
	920	851	920	920
CAGE08	0.18765	0.21545	0.47921	-0.00882
AGE OF YA IN YEARS AT DATE OF INTV 2008	<.0001	<.0001	<.0001	0.7894

The CORR Procedure

Pearson Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	CED08	CINCOME08	B0	CSEX
CED08	1.00000	0.28734	0.21001	-0.21665
HIGHEST GRADE COMPLETED AS OF 2008 2008		<.0001	<.0001	<.0001
	920	851	920	920
CINCOME08	0.28734	1.00000	0.15173	0.22778
	<.0001		<.0001	<.0001
	851	851	851	851
B0	0.21001	0.15173	1.00000	0.02477
	<.0001	<.0001		0.4531
	920	851	920	920
CSEX	-0.21665	0.22778	0.02477	1.00000
SEX OF CHILD	<.0001	<.0001	0.4531	
	920	851	920	920

Regression Editor Paper 2

```
;DATA DISS.P2; SET DISS.FINAL;
```

```
IF CSEX = 1 THEN CSEX = 1; ELSE IF CSEX = 2 THEN CSEX = 0; * 1 = MALE 0 = FEMALE;
```

```
IF CRACE = 1 THEN CRACE = 0;  
ELSE IF CRACE = 2 THEN CRACE = 0;  
ELSE IF CRACE = 3 THEN CRACE =1;
```

```
CINCOME08 = SUM(CWAGE08, CFARM08);  
CINCOME08_1000=CINCOME08/1000;  
LOGCINCOME08 = LOG(CINCOME08);
```

```
IF CMS08 = 1 THEN CMS08 = 1;  
ELSE IF CMS08 = 0 THEN CMS08 = 0;  
ELSE IF CMS08 = 2 THEN CMS08 = 0;  
ELSE IF CMS08 = 3 THEN CMS08 = 0;  
ELSE IF CMS08 = 6 THEN CMS08 = 0;
```

```
IF SUMCFB GT 3 THEN HICFB=1;  
ELSE IF 3 LE SUMCFB LE 14 THEN HICFB=0;  
ELSE HICFB=.;
```

```
IF CFB108 = 1 THEN HICFB1 =1; ELSE IF 1 LT CFB108 LE 5 THEN HICFB1=0; ELSE  
HICFB1=.;  
IF CFB208 = 1 THEN HICFB2=1; ELSE IF 1 LT CFB208 LE 5 THEN HICFB2=0; ELSE  
HICFB2=.;  
IF CFB308 = 1 THEN HICFB3=1; ELSE IF 1 LT CFB308 LE 4 THEN HICFB3=0; ELSE  
HICFB3=.;
```

```
PROC FREQ; TABLES CFB108 HICFB1 CFB208 HICFB2 CFB308 HICFB3; RUN;  
PROC FREQ; TABLES
```



```

CAGE08
CED08
CMS08
CRACE
CSEX
CINCOME08
SUMCGRA
SUMCFB;
PROC MEANS MEDIAN MEAN STD MIN MAX N; VAR CAGE08 CED08 CINCOME08 SUMCGRA
SUMCFB CMS08 CRACE CSEX; RUN;

PROC LOGISTIC DESCENDING SIMPLE; MODEL HICFB1 = CAGE08 CMS08 CRACE CSEX
CINCOME08_1000 SUMCGRA / STB;
RUN;

PROC LOGISTIC DESCENDING SIMPLE; MODEL HICFB2 = CAGE08 CMS08 CRACE CSEX
CINCOME08_1000 SUMCGRA / STB;
RUN;

PROC LOGISTIC DESCENDING SIMPLE; MODEL HICFB3 = CAGE08 CMS08 CRACE CSEX
CINCOME08_1000 SUMCGRA / STB;
RUN;

```

Regression Output Paper 2

The SAS System

17:13 Tuesday, May 15, 2012 69

The FREQ Procedure

HOW OFTEN PUTS OFF BUYING NECESSARY 2008

CFB108	Frequency	%	Cumulative Frequency	Cumulative %
1	946	41.84	946	41.84
2	640	28.31	1586	70.15
3	417	18.44	2003	88.59
4	129	5.71	2132	94.29
5	129	5.71	2261	100.00

Frequency Missing = 320

HICFB1	Frequency	%	Cumulative Frequency	Cumulative %
0	1315	58.16	1315	58.16
1	946	41.84	2261	100.00

Frequency Missing = 320

DIFFICULTY PAYING BILLS 2008

CFB208	Frequency	%	Cumulative Frequency	Cumulative %
1	810	36.00	810	36.00
2	675	30.00	1485	66.00
3	461	20.49	1946	86.49
4	191	8.49	2137	94.98
5	113	5.02	2250	100.00

Frequency Missing = 331

HICFB2	Frequency	%	Cumulative Frequency	Cumulative %
0	1440	64.00	1440	64.00
1	810	36.00	2250	100.00

Frequency Missing = 331

The FREQ Procedure

MONEY LEFT OVER AT END OF MONTH 2008

CFB308	Frequency	%	Cumulative	
			Frequency	%
ff				
1	243	10.86	243	10.86
2	1024	45.78	1267	56.64
3	789	35.27	2056	91.91
4	181	8.09	2237	100.00

Frequency Missing = 344

HICFB3	Frequency	%	Cumulative	
			Frequency	%
0	1994	89.14	1994	89.14
1	243	10.86	2237	100.00

Frequency Missing = 344

The FREQ Procedure

AGE OF YA IN YEARS AT DATE OF INTV 2008

CAGE08	Frequency	%	Cumulative Frequency	Cumulative %
ff				
14	10	0.44	10	0.44
15	33	1.46	43	1.90
16	47	2.07	90	3.97
17	38	1.68	128	5.65
18	86	3.79	214	9.44
19	55	2.43	269	11.87
20	79	3.48	348	15.35
21	87	3.84	435	19.19
22	81	3.57	516	22.76
23	110	4.85	626	27.61
24	119	5.25	745	32.86
25	267	11.78	1012	44.64
26	250	11.03	1262	55.67
27	221	9.75	1483	65.42
28	199	8.78	1682	74.19
29	169	7.45	1851	81.65
30	141	6.22	1992	87.87
31	105	4.63	2097	92.50
32	88	3.88	2185	96.38
33	45	1.99	2230	98.37
34	20	0.88	2250	99.25
35	14	0.62	2264	99.87
36	3	0.13	2267	100.00

Frequency Missing = 314

The FREQ Procedure

HIGHEST GRADE COMPLETED AS OF 2008 2008

CED08	Frequency	%	Cumulative Frequency	Cumulative %
ff				
6	1	0.04	1	0.04
7	8	0.35	9	0.40
8	93	4.10	102	4.50
9	117	5.16	219	9.66
10	147	6.48	366	16.14
11	178	7.85	544	24.00
12	851	37.54	1395	61.54
13	199	8.78	1594	70.31
14	283	12.48	1877	82.80
15	104	4.59	1981	87.38
16	196	8.65	2177	96.03
17	42	1.85	2219	97.88
18	34	1.50	2253	99.38
19	10	0.44	2263	99.82
20	4	0.18	2267	100.00

Frequency Missing = 314

OFFICIAL MARITAL STATUS 2008

CMS08	Frequency	%	Cumulative Frequency	Cumulative %
ff				
0	1725	76.09	1725	76.09
1	542	23.91	2267	100.00

Frequency Missing = 314

RACE OF CHILD (FROM MOTHERS SCREENER 79)

CRACE	Frequency	%	Cumulative Frequency	Cumulative %
ff				
0	1645	63.73	1645	63.73
1	936	36.27	2581	100.00

The FREQ Procedure

SEX OF CHILD

CSEX	Frequency	%	Cumulative	
			Frequency	%
ff				
0	1252	48.51	1252	48.51
1	1329	51.49	2581	100.00

The FREQ Procedure

CINCOME08	Frequency	%	Cumulative Frequency	Cumulative %
0	228	11.26	228	11.26
30	1	0.05	229	11.31
45	1	0.05	230	11.36
50	1	0.05	231	11.41
60	1	0.05	232	11.46
100	3	0.15	235	11.61
108	1	0.05	236	11.66
112	2	0.10	238	11.76
120	2	0.10	240	11.86
150	1	0.05	241	11.91
154	1	0.05	242	11.96
200	13	0.64	255	12.60
240	1	0.05	256	12.65
300	8	0.40	264	13.04
445	1	0.05	265	13.09
454	1	0.05	266	13.14
455	1	0.05	267	13.19
500	9	0.44	276	13.64
550	1	0.05	277	13.69
600	4	0.20	281	13.88
700	3	0.15	284	14.03
720	1	0.05	285	14.08
750	1	0.05	286	14.13
780	1	0.05	287	14.18
800	5	0.25	292	14.43
844	1	0.05	293	14.48
900	2	0.10	295	14.58
1000	24	1.19	319	15.76
1040	2	0.10	321	15.86
1080	1	0.05	322	15.91
1100	2	0.10	324	16.01
1200	5	0.25	329	16.25
1300	2	0.10	331	16.35
1350	1	0.05	332	16.40
1500	11	0.54	343	16.95
1536	1	0.05	344	17.00
1577	1	0.05	345	17.05
1600	3	0.15	348	17.19
1800	3	0.15	351	17.34
1900	1	0.05	352	17.39
1971	2	0.10	354	17.49
2000	28	1.38	382	18.87
2159	2	0.10	384	18.97
2223	1	0.05	385	19.02
2366	1	0.05	386	19.07
2400	4	0.20	390	19.27
2500	8	0.40	398	19.66
2600	2	0.10	400	19.76

The FREQ Procedure

CINCOME08	Frequency	%	Cumulative Frequency	Cumulative %
2650	2	0.10	402	19.86
2700	1	0.05	403	19.91
2800	2	0.10	405	20.01
2900	1	0.05	406	20.06
3000	43	2.12	449	22.18
3074	1	0.05	450	22.23
3200	1	0.05	451	22.28
3429	1	0.05	452	22.33
3500	10	0.49	462	22.83
3588	2	0.10	464	22.92
3700	2	0.10	466	23.02
3770	3	0.15	469	23.17
3800	3	0.15	472	23.32
4000	21	1.04	493	24.36
4200	3	0.15	496	24.51
4300	3	0.15	499	24.65
4400	3	0.15	502	24.80
4500	4	0.20	506	25.00
4673	2	0.10	508	25.10
5000	42	2.08	550	27.17
5400	1	0.05	551	27.22
6000	27	1.33	578	28.56
6300	1	0.05	579	28.61
6337	1	0.05	580	28.66
6400	4	0.20	584	28.85
6500	7	0.35	591	29.20
6600	2	0.10	593	29.30
7000	31	1.53	624	30.83
7222	1	0.05	625	30.88
7400	2	0.10	627	30.98
7500	4	0.20	631	31.18
8000	30	1.48	661	32.66
8100	1	0.05	662	32.71
8500	2	0.10	664	32.81
8647	2	0.10	666	32.91
8700	1	0.05	667	32.95
8800	2	0.10	669	33.05
9000	16	0.79	685	33.84
9200	1	0.05	686	33.89
9400	3	0.15	689	34.04
9500	1	0.05	690	34.09
9600	1	0.05	691	34.14
9900	2	0.10	693	34.24
10000	67	3.31	760	37.55
10348	1	0.05	761	37.60
10500	1	0.05	762	37.65
10921	1	0.05	763	37.70
11000	16	0.79	779	38.49

The FREQ Procedure

CINCOME08	Frequency	%	Cumulative	
			Frequency	%
11500	3	0.15	782	38.64
11680	3	0.15	785	38.78
11700	1	0.05	786	38.83
12000	53	2.62	839	41.45
12240	2	0.10	841	41.55
12600	1	0.05	842	41.60
13000	32	1.58	874	43.18
14000	24	1.19	898	44.37
14500	1	0.05	899	44.42
14848	2	0.10	901	44.52
14880	3	0.15	904	44.66
15000	61	3.01	965	47.68
15500	1	0.05	966	47.73
16000	15	0.74	981	48.47
16254	2	0.10	983	48.57
16319	1	0.05	984	48.62
16800	2	0.10	986	48.72
16950	2	0.10	988	48.81
17000	24	1.19	1012	50.00
17167	1	0.05	1013	50.05
17500	2	0.10	1015	50.15
18000	28	1.38	1043	51.53
18467	1	0.05	1044	51.58
18900	2	0.10	1046	51.68
19000	14	0.69	1060	52.37
19070	1	0.05	1061	52.42
19500	3	0.15	1064	52.57
20000	64	3.16	1128	55.73
20192	3	0.15	1131	55.88
20800	5	0.25	1136	56.13
21000	11	0.54	1147	56.67
22000	37	1.83	1184	58.50
22281	1	0.05	1185	58.55
22500	1	0.05	1186	58.60
22600	1	0.05	1187	58.65
22700	2	0.10	1189	58.75
23000	22	1.09	1211	59.83
23240	2	0.10	1213	59.93
23453	2	0.10	1215	60.03
23747	2	0.10	1217	60.13
24000	29	1.43	1246	61.56
24939	1	0.05	1247	61.61
25000	56	2.77	1303	64.38
25500	2	0.10	1305	64.48
25800	1	0.05	1306	64.53
26000	26	1.28	1332	65.81
26133	2	0.10	1334	65.91
26500	1	0.05	1335	65.96

The FREQ Procedure

CINCOME08	Frequency	%	Cumulative Frequency	Cumulative %
26700	3	0.15	1338	66.11
27000	35	1.73	1373	67.84
27500	1	0.05	1374	67.89
28000	29	1.43	1403	69.32
28500	1	0.05	1404	69.37
28600	1	0.05	1405	69.42
28700	3	0.15	1408	69.57
29000	8	0.40	1416	69.96
30000	81	4.00	1497	73.96
30500	3	0.15	1500	74.11
30680	1	0.05	1501	74.16
31000	11	0.54	1512	74.70
31175	2	0.10	1514	74.80
31766	1	0.05	1515	74.85
32000	32	1.58	1547	76.43
32100	2	0.10	1549	76.53
33000	14	0.69	1563	77.22
34000	14	0.69	1577	77.92
35000	45	2.22	1622	80.14
35200	1	0.05	1623	80.19
36000	25	1.24	1648	81.42
37000	16	0.79	1664	82.21
37800	1	0.05	1665	82.26
38000	16	0.79	1681	83.05
38500	2	0.10	1683	83.15
39000	7	0.35	1690	83.50
39819	1	0.05	1691	83.55
40000	33	1.63	1724	85.18
41000	10	0.49	1734	85.67
41232	3	0.15	1737	85.82
41600	1	0.05	1738	85.87
42000	14	0.69	1752	86.56
43000	15	0.74	1767	87.30
43200	3	0.15	1770	87.45
43801	1	0.05	1771	87.50
44000	1	0.05	1772	87.55
45000	29	1.43	1801	88.98
46000	14	0.69	1815	89.67
47000	16	0.79	1831	90.46
47250	2	0.10	1833	90.56
48000	17	0.84	1850	91.40
49000	13	0.64	1863	92.05
50000	20	0.99	1883	93.03
51000	3	0.15	1886	93.18
52000	9	0.44	1895	93.63
52195	2	0.10	1897	93.73
53000	1	0.05	1898	93.77
54000	3	0.15	1901	93.92

The FREQ Procedure

CINCOME08	Frequency	%	Cumulative Frequency	Cumulative %
55000	8	0.40	1909	94.32
55200	1	0.05	1910	94.37
56000	3	0.15	1913	94.52
57000	5	0.25	1918	94.76
57500	1	0.05	1919	94.81
58000	3	0.15	1922	94.96
58240	1	0.05	1923	95.01
60000	6	0.30	1929	95.31
62000	2	0.10	1931	95.41
63223	2	0.10	1933	95.50
64500	1	0.05	1934	95.55
65000	16	0.79	1950	96.34
67000	2	0.10	1952	96.44
68000	6	0.30	1958	96.74
70000	16	0.79	1974	97.53
72000	4	0.20	1978	97.73
74500	2	0.10	1980	97.83
75000	8	0.40	1988	98.22
77000	2	0.10	1990	98.32
80000	3	0.15	1993	98.47
81000	2	0.10	1995	98.57
82000	2	0.10	1997	98.67
85000	2	0.10	1999	98.76
86000	1	0.05	2000	98.81
87000	2	0.10	2002	98.91
88000	2	0.10	2004	99.01
89000	1	0.05	2005	99.06
90000	3	0.15	2008	99.21
92000	2	0.10	2010	99.31
119116	14	0.69	2024	100.00

Frequency Missing = 557

The FREQ Procedure

SUMCGRA	Frequency	%	Cumulative	
			Frequency	%
ff			ff	ffffffffffffffffffffffffffffffff
11	2	0.08	2	0.08
12	5	0.19	7	0.27
13	3	0.12	10	0.39
14	9	0.35	19	0.74
15	27	1.05	46	1.78
16	29	1.12	75	2.91
17	87	3.37	162	6.28
18	168	6.51	330	12.79
19	434	16.82	764	29.60
20	683	26.46	1447	56.06
21	620	24.02	2067	80.09
22	316	12.24	2383	92.33
23	136	5.27	2519	97.60
24	47	1.82	2566	99.42
25	13	0.50	2579	99.92
26	2	0.08	2581	100.00

SUMCFB	Frequency	%	Cumulative	
			Frequency	%
fff				
3	157	6.08	157	6.08
4	413	16.00	570	22.08
5	409	15.85	979	37.93
6	391	15.15	1370	53.08
7	375	14.53	1745	67.61
8	280	10.85	2025	78.46
9	172	6.66	2197	85.12
10	178	6.90	2375	92.02
11	79	3.06	2454	95.08
12	57	2.21	2511	97.29
13	30	1.16	2541	98.45
14	40	1.55	2581	100.00

The MEANS Procedure

Variable	Label	Median	Mean	Std Dev
CAGE08	AGE OF YA IN YEARS AT DATE OF INTV 2008	26.0000000	25.5315395	4.4298242
CED08	HIGHEST GRADE COMPLETED AS OF 2008 2008	12.0000000	12.5011028	2.2426449
CINCOME08		17083.50	21388.67	20317.85
SUMCGRA		20.0000000	20.1975978	1.7759401
SUMCFB		6.0000000	6.6679582	2.5112491
CMS08	OFFICIAL MARITAL STATUS 2008	0	0.2390825	0.4266173
CRACE	RACE OF CHILD (FROM MOTHERS SCREENER 79)	0	0.3626501	0.4808582
CSEX	SEX OF CHILD	1.0000000	0.5149167	0.4998743

Variable	Label	Minimum	Maximum	N
CAGE08	AGE OF YA IN YEARS AT DATE OF INTV 2008	14.0000000	36.0000000	2267
CED08	HIGHEST GRADE COMPLETED AS OF 2008 2008	6.0000000	20.0000000	2267
CINCOME08		0	119116.00	2024
SUMCGRA		11.0000000	26.0000000	2581
SUMCFB		3.0000000	14.0000000	2581
CMS08	OFFICIAL MARITAL STATUS 2008	0	1.0000000	2267
CRACE	RACE OF CHILD (FROM MOTHERS SCREENER 79)	0	1.0000000	2581
CSEX	SEX OF CHILD	0	1.0000000	2581

The LOGISTIC Procedure

Model Information

Data Set	DISS.P2
Response Variable	HICFB1
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	2581
Number of Observations Used	2020

Response Profile

Ordered Value	HICFB1	Total Frequency
1	1	860
2	0	1160

Probability modeled is HICFB1=1.

NOTE: 561 observations were deleted due to missing values for the response or explanatory variables.

Descriptive Statistics for Continuous Variables

Variable	HICFB1	Mean	Standard Deviation	Minimum	Maximum
CAGE08	1	25.163953	4.236034	14.000000	35.000000
	0	26.220690	4.393845	14.000000	36.000000
	Total	25.770792	4.357756	14.000000	36.000000
CMS08	1	0.260465	0.439144	0	1.000000
	0	0.247414	0.431695	0	1.000000
	Total	0.252970	0.434822	0	1.000000
CRACE	1	0.460465	0.498725	0	1.000000
	0	0.314655	0.464579	0	1.000000
	Total	0.376733	0.484687	0	1.000000
CSEX	1	0.565116	0.496030	0	1.000000
	0	0.458621	0.498500	0	1.000000
	Total	0.503960	0.500108	0	1.000000

The LOGISTIC Procedure

Descriptive Statistics for Continuous Variables

Variable	HICFB1	Mean	Standard Deviation	Minimum	Maximum
CINCOME08_1000	1	24.002730	23.333821	0	119.116000
	0	19.502001	17.526713	0	119.116000

	Total	21.418153	20.320969	0	119.116000
SUMCGRA	1	20.190698	1.737997	11.000000	26.000000
	0	20.252586	1.800918	12.000000	25.000000

	Total	20.226238	1.774232	11.000000	26.000000

Descriptive Statistics for Continuous Variables

Variable
Label

AGE OF YA IN YEARS AT DATE OF INTV 2008

OFFICIAL MARITAL STATUS 2008

RACE OF CHILD (FROM MOTHERS SCREENER 79)

SEX OF CHILD

The LOGISTIC Procedure

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	2757.595	2640.890
SC	2763.206	2680.166
-2 Log L	2755.595	2626.890

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	128.7044	6	<.0001
Score	125.0280	6	<.0001
Wald	117.2028	6	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Standardized Estimate
Intercept	1	1.5057	0.6121	6.0519	0.0139	
CAGE08	1	-0.0850	0.0123	47.8638	<.0001	-0.2043
CMS08	1	-0.00596	0.1162	0.0026	0.9591	-0.00143
CRACE	1	0.5025	0.0980	26.2697	<.0001	0.1343
CSEX	1	0.3084	0.0940	10.7729	0.0010	0.0850
CINCOME08_1000	1	0.0160	0.00270	35.3067	<.0001	0.1797
SUMCGRA	1	-0.0158	0.0262	0.3621	0.5473	-0.0154

Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
CAGE08	0.918	0.897	0.941
CMS08	0.994	0.792	1.248
CRACE	1.653	1.364	2.003
CSEX	1.361	1.132	1.637
CINCOME08_1000	1.016	1.011	1.022
SUMCGRA	0.984	0.935	1.036

The LOGISTIC Procedure

Association of Predicted Probabilities and Observed Responses

% Concordant	63.5	Somers' D	0.275
% Discordant	36.0	Gamma	0.277
% Tied	0.4	Tau-a	0.135
Pairs	997600	c	0.638

The LOGISTIC Procedure

Model Information

Data Set	DISS.P2
Response Variable	HICFB2
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	2581
Number of Observations Used	2011

Response Profile

Ordered Value	HICFB2	Total Frequency
1	1	734
2	0	1277

Probability modeled is HICFB2=1.

NOTE: 570 observations were deleted due to missing values for the response or explanatory variables.

Descriptive Statistics for Continuous Variables

Variable	HICFB2	Mean	Standard Deviation	Minimum	Maximum
CAGE08	1	25.347411	4.102109	14.000000	34.000000
	0	26.021926	4.434068	14.000000	36.000000
	Total	25.775733	4.327044	14.000000	36.000000
CMS08	1	0.238420	0.426408	0	1.000000
	0	0.263117	0.440498	0	1.000000
	Total	0.254102	0.435464	0	1.000000
CRACE	1	0.425068	0.494690	0	1.000000
	0	0.350822	0.477414	0	1.000000
	Total	0.377921	0.484988	0	1.000000
CSEX	1	0.568120	0.495676	0	1.000000
	0	0.466719	0.499087	0	1.000000
	Total	0.503729	0.500110	0	1.000000

The LOGISTIC Procedure

Descriptive Statistics for Continuous Variables

Variable	HICFB2	Mean	Standard Deviation	Minimum	Maximum
CINCOME08_1000	1	24.788388	23.901296	0	119.116000
	0	19.623565	17.679208	0	119.116000

	Total	21.508687	20.320749	0	119.116000
SUMCGRA	1	20.138965	1.778999	11.000000	26.000000
	0	20.269381	1.773042	12.000000	25.000000

	Total	20.221780	1.775887	11.000000	26.000000

Descriptive Statistics for Continuous Variables

Variable
Label

AGE OF YA IN YEARS AT DATE OF INTV 2008

OFFICIAL MARITAL STATUS 2008

RACE OF CHILD (FROM MOTHERS SCREENER 79)

SEX OF CHILD

The LOGISTIC Procedure

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	2641.384	2567.385
SC	2646.991	2606.629
-2 Log L	2639.384	2553.385

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	85.9994	6	<.0001
Score	84.6992	6	<.0001
Wald	79.8113	6	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Standardized Estimate
Intercept	1	1.2177	0.6231	3.8185	0.0507	
CAGE08	1	-0.0622	0.0126	24.5674	<.0001	-0.1485
CMS08	1	-0.2451	0.1201	4.1664	0.0412	-0.0588
CRACE	1	0.2217	0.1002	4.8952	0.0269	0.0593
CSEX	1	0.2799	0.0960	8.5072	0.0035	0.0772
CINCOME08_1000	1	0.0177	0.00271	42.4722	<.0001	0.1980
SUMCGRA	1	-0.0362	0.0266	1.8587	0.1728	-0.0355

Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
CAGE08	0.940	0.917	0.963
CMS08	0.783	0.619	0.990
CRACE	1.248	1.026	1.519
CSEX	1.323	1.096	1.597
CINCOME08_1000	1.018	1.012	1.023
SUMCGRA	0.964	0.915	1.016

The LOGISTIC Procedure

Association of Predicted Probabilities and Observed Responses

% Concordant	60.4	Somers' D	0.213
% Discordant	39.1	Gamma	0.214
% Tied	0.6	Tau-a	0.099
Pairs	937318	c	0.606

The LOGISTIC Procedure

Model Information

Data Set	DISS.P2
Response Variable	HICFB3
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	2581
Number of Observations Used	2000

Response Profile

Ordered Value	HICFB3	Total Frequency
1	1	221
2	0	1779

Probability modeled is HICFB3=1.

NOTE: 581 observations were deleted due to missing values for the response or explanatory variables.

Descriptive Statistics for Continuous Variables

Variable	HICFB3	Mean	Standard Deviation	Minimum	Maximum
CAGE08	1	25.027149	4.477132	14.000000	33.000000
	0	25.897133	4.278953	14.000000	36.000000
	Total	25.801000	4.308791	14.000000	36.000000
CMS08	1	0.280543	0.450284	0	1.000000
	0	0.252389	0.434505	0	1.000000
	Total	0.255500	0.436251	0	1.000000
CRACE	1	0.461538	0.499650	0	1.000000
	0	0.369309	0.482753	0	1.000000
	Total	0.379500	0.485384	0	1.000000
CSEX	1	0.597285	0.491558	0	1.000000
	0	0.489601	0.500032	0	1.000000
	Total	0.501500	0.500123	0	1.000000

The LOGISTIC Procedure

Descriptive Statistics for Continuous Variables

Variable	HICFB3	Mean	Standard Deviation	Minimum	Maximum
CINCOME08_1000	1	27.648253	26.223498	0	119.116000
	0	20.836709	19.363907	0	119.116000
	Total	21.589385	20.340879	0	119.116000
SUMCGRA	1	20.253394	1.904313	11.000000	26.000000
	0	20.216414	1.761940	11.000000	25.000000
	Total	20.220500	1.777768	11.000000	26.000000

Descriptive Statistics for Continuous Variables

Variable
Label

AGE OF YA IN YEARS AT DATE OF INTV 2008

OFFICIAL MARITAL STATUS 2008

RACE OF CHILD (FROM MOTHERS SCREENER 79)

SEX OF CHILD

The LOGISTIC Procedure

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	1392.238	1352.500
SC	1397.839	1391.707
-2 Log L	1390.238	1338.500

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	51.7374	6	<.0001
Score	53.6333	6	<.0001
Wald	50.6327	6	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Standardized Estimate
Intercept	1	-0.8157	0.9707	0.7061	0.4008	
CAGE08	1	-0.0922	0.0197	21.8057	<.0001	-0.2191
CMS08	1	0.0777	0.1799	0.1865	0.6659	0.0187
CRACE	1	0.1954	0.1510	1.6740	0.1957	0.0523
CSEX	1	0.2740	0.1495	3.3606	0.0668	0.0756
CINCOME08_1000	1	0.0194	0.00361	28.7780	<.0001	0.2172
SUMCGRA	1	0.0179	0.0414	0.1872	0.6653	0.0175

Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
CAGE08	0.912	0.877	0.948
CMS08	1.081	0.760	1.538
CRACE	1.216	0.904	1.634
CSEX	1.315	0.981	1.763
CINCOME08_1000	1.020	1.012	1.027
SUMCGRA	1.018	0.939	1.104

The LOGISTIC Procedure

Association of Predicted Probabilities and Observed Responses

% Concordant	63.5	Somers' D	0.282
% Discordant	35.3	Gamma	0.286
% Tied	1.2	Tau-a	0.056
Pairs	393159	c	0.641

The CORR Procedure

9 Variables: HICFB1 HICFB2 HICFB3 CAGE08 CMS08
CRACE CSEX CINCOME08_1000 SUMCGRA

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
HICFB1	2261	0.41840	0.49341	946.00000	0	1.00000
HICFB2	2250	0.36000	0.48011	810.00000	0	1.00000
HICFB3	2237	0.10863	0.31124	243.00000	0	1.00000
CAGE08	2267	25.53154	4.42982	57880	14.00000	36.00000
CMS08	2267	0.23908	0.42662	542.00000	0	1.00000
CRACE	2581	0.36265	0.48086	936.00000	0	1.00000
CSEX	2581	0.51492	0.49987	1329	0	1.00000
CINCOME08_1000	2024	21.38867	20.31785	43291	0	119.11600
SUMCGRA	2581	20.19760	1.77594	52130	11.00000	26.00000

Simple Statistics

Variable	Label
HICFB1	
HICFB2	
HICFB3	
CAGE08	AGE OF YA IN YEARS AT DATE OF INTV 2008
CMS08	OFFICIAL MARITAL STATUS 2008
CRACE	RACE OF CHILD (FROM MOTHERS SCREENER 79)
CSEX	SEX OF CHILD
CINCOME08_1000	
SUMCGRA	

The CORR Procedure

Pearson Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	HICFB1	HICFB2	HICFB3	CAGE08	CMS08
HICFB1	1.00000	0.39496	0.22985	-0.10887	0.02027
		<.0001	<.0001	<.0001	0.3353
	2261	2249	2237	2261	2261
HICFB2	0.39496	1.00000	0.35942	-0.07169	-0.02981
	<.0001		<.0001	0.0007	0.1575
	2249	2250	2235	2250	2250
HICFB3	0.22985	0.35942	1.00000	-0.05957	0.03097
	<.0001	<.0001		0.0048	0.1430

	2237	2235	2237	2237	2237
CAGE08	-0.10887	-0.07169	-0.05957	1.00000	0.28066
AGE OF YA IN YEARS AT DATE OF INTV 2008	<.0001	0.0007	0.0048	<.0001	<.0001
	2261	2250	2237	2267	2267
CMS08	0.02027	-0.02981	0.03097	0.28066	1.00000
OFFICIAL MARITAL STATUS 2008	0.3353	0.1575	0.1430	<.0001	<.0001
	2261	2250	2237	2267	2267
CRACE	0.13982	0.07089	0.07192	-0.04241	0.19329
RACE OF CHILD (FROM MOTHERS SCREENER 79)	<.0001	0.0008	0.0007	0.0435	<.0001
	2261	2250	2237	2267	2267
CSEX	0.10569	0.09067	0.06456	-0.03930	-0.01023
SEX OF CHILD	<.0001	<.0001	0.0023	0.0614	0.6264
	2261	2250	2237	2267	2267
CINCOME08_1000	0.10954	0.12239	0.10501	0.39101	0.28062
	<.0001	<.0001	<.0001	<.0001	<.0001
	2020	2011	2000	2024	2024
SUMCGRA	-0.02293	-0.04056	0.00293	-0.00474	0.00768
	0.2757	0.0544	0.8899	0.8214	0.7147
	2261	2250	2237	2267	2267

The SAS System

15:19 Tuesday, June 26, 2012 44

The CORR Procedure

Pearson Correlation Coefficients

Prob > |r| under H0: Rho=0

Number of Observations

	CRACE	CSEX	CINCOME08_1000	SUMCGRA
HICFB1	0.13982	0.10569	0.10954	-0.02293
	<.0001	<.0001	<.0001	0.2757
	2261	2261	2020	2261
HICFB2	0.07089	0.09067	0.12239	-0.04056
	0.0008	<.0001	<.0001	0.0544
	2250	2250	2011	2250
HICFB3	0.07192	0.06456	0.10501	0.00293
	0.0007	0.0023	<.0001	0.8899
	2237	2237	2000	2237
CAGE08	-0.04241	-0.03930	0.39101	-0.00474
AGE OF YA IN YEARS AT DATE OF INTV 2008	0.0435	0.0614	<.0001	0.8214
	2267	2267	2024	2267
CMS08	0.19329	-0.01023	0.28062	0.00768
OFFICIAL MARITAL STATUS 2008	<.0001	0.6264	<.0001	0.7147
	2267	2267	2024	2267
CRACE	1.00000	0.02747	0.15249	0.02544
RACE OF CHILD (FROM MOTHERS SCREENER 79)		0.1629	<.0001	0.1964
	2581	2581	2024	2581
CSEX	0.02747	1.00000	0.13392	-0.04786
SEX OF CHILD	0.1629		<.0001	0.0150
	2581	2581	2024	2581
CINCOME08_1000	0.15249	0.13392	1.00000	-0.02047
	<.0001	<.0001		0.3574
	2024	2024	2024	2024

SUMCGRA	0.02544	-0.04786	-0.02047	1.00000
	0.1964	0.0150	0.3574	
	2581	2581	2024	2581

Regression Editor Paper 3

DATA DISS.P2; SET DISS.FINAL;

IF CSEX=1 THEN CSEX=1;
ELSE IF CSEX=2 THEN CSEX=0; *1=MALE 0=FEMALE;

SUMCFB=CFB108 + CFB208 + CFB308;

CINCOME08=SUM(CWAGE08, CFARMB08);

IF GRA104 IN (8 9) THEN DELETE; IF GRA204 IN (8 9) THEN DELETE; IF GRA304 IN (8 9) THEN DELETE; IF GRA404 IN (8 9) THEN DELETE; IF GRA504 IN (8 9) THEN DELETE;
IF GRA604 IN (8 9) THEN DELETE; IF GRA704 IN (8 9) THEN DELETE; IF GRA804 IN (8 9) THEN DELETE;
IF WAGE08 = . THEN WAGE08 = ((WAGELOW08 + WAGEHI08) / 2);
INCOME08 = SUM(MIL08, WAGE08, FARM08);
IF GRA304 = 1 THEN GRA304R = 4; ELSE IF GRA304 = 2 THEN GRA304R = 3; ELSE IF GRA304 = 3 THEN GRA304R = 2; ELSE IF GRA304 = 4 THEN GRA304R =1;ELSE GRA304R =.;
IF GRA504 = 1 THEN GRA504R = 4; ELSE IF GRA504 = 2 THEN GRA504R = 3; ELSE IF GRA504 = 3 THEN GRA504R = 2; ELSE IF GRA504 = 4 THEN GRA504R =1;ELSE GRA504R =.;
IF GRA704 = 1 THEN GRA704R = 4; ELSE IF GRA704 = 2 THEN GRA704R = 3; ELSE IF GRA704 = 3 THEN GRA704R = 2; ELSE IF GRA704 = 4 THEN GRA704R =1;ELSE GRA704R =.;
IF CGRA308 = 1 THEN CGRA308R = 4; ELSE IF CGRA308 = 2 THEN CGRA308R = 3; ELSE IF CGRA308 = 3 THEN CGRA308R = 2; ELSE IF CGRA308 = 4 THEN CGRA308R =1; ELSE CGRA308R=.;
IF CGRA508 = 1 THEN CGRA508R = 4; ELSE IF CGRA508 = 2 THEN CGRA508R = 3; ELSE IF CGRA508 = 3 THEN CGRA508R = 2; ELSE IF CGRA508 = 4 THEN CGRA508R =1; ELSE CGRA508R=.;
IF CGRA708 = 1 THEN CGRA708R = 4; ELSE IF CGRA708 = 2 THEN CGRA708R = 3; ELSE IF CGRA708 = 3 THEN CGRA708R = 2; ELSE IF CGRA708 = 4 THEN CGRA708R =1; ELSE CGRA708R=.;
IF CGRA306 = 1 THEN CGRA306R = 4; ELSE IF CGRA306 = 2 THEN CGRA306R = 3; ELSE IF CGRA306 = 3 THEN CGRA306R = 2; ELSE IF CGRA306 = 4 THEN CGRA306R =1; ELSE CGRA306R=.;
IF CGRA506 = 1 THEN CGRA506R = 4; ELSE IF CGRA506 = 2 THEN CGRA506R = 3; ELSE IF CGRA506 = 3 THEN CGRA506R = 2; ELSE IF CGRA506 = 4 THEN CGRA506R =1; ELSE CGRA506R=.;
IF CGRA706 = 1 THEN CGRA706R = 4; ELSE IF CGRA706 = 2 THEN CGRA706R = 3; ELSE IF CGRA706 = 3 THEN CGRA706R = 2; ELSE IF CGRA706 = 4 THEN CGRA706R =1; ELSE CGRA706R=.;
CGRA806 = 2;
SUMGRA = GRA104 + GRA204 + GRA304R + GRA404 + GRA504R + GRA604 + GRA704R + GRA804;SUMCGRA = CGRA108 + CGRA208 + CGRA308R + CGRA508R + CGRA608 + CGRA708R + CGRA808;

```

SUMCGRA06 = CGRA106 + CGRA206 + CGRA306R + CGRA506R + CGRA606 + CGRA706R +
CGRA806;
IF SUMCGRA = . THEN SUMCGRA = SUMCGRA06;
IF SUMGRA = . THEN SUMGRA = 24; IF AFQT06 = . THEN AFQT06 = 31928; else
afqt06=afqt06; LOGAFQT06 = LOG(AFQT06);
IF ED08 = . THEN ED08 = 12;
IF INCOME08 = . THEN INCOME08 = 20000; else income08=income08;
LOGINCOME08 = LOG(INCOME08);
INCOME08_1000=INCOME08/1000;
IF CPPVTRAW86 = . THEN CPPVTRAW86 = 57; else CPPVTRAW86=CPPVTRAW86;
LOGCPPVTRAW86 = LOG(CPPVTRAW86);
IF CED08 = . THEN CED08 = 12;
IF CINCOME08 = . THEN CINCOME08 = 7400; else cincome08=cincome08;
LOGCINCOME08 = LOG(CINCOME08); CINCOME08_1000=CINCOME08/1000;

IF SUMGRA;
IF AFQT06;
IF ED08;
IF INCOME08;
IF SUMCGRA;
IF CPPVTRAW86;
IF CED08;
IF CINCOME08;
IF SUMCFB;

IF SUMCFB GT 3 THEN HICFB=1;
ELSE IF 3 LE SUMCFB LE 14 THEN HICFB=0;
ELSE HICFB=.;

IF CFB108 = 1 THEN HICFB1=1; ELSE IF 1 LT CFB108 LE 5 THEN HICFB1=0; ELSE
HICFB1=.;
IF CFB208 = 1 THEN HICFB2=1; ELSE IF 1 LT CFB208 LE 5 THEN HICFB2=0; ELSE
HICFB2=.;
IF CFB308 = 1 THEN HICFB3=1; ELSE IF 1 LT CFB308 LE 4 THEN HICFB3=0; ELSE
HICFB3=.;

PROC FREQ; TABLES CFB108 HICFB1 CFB208 HICFB2 CFB308 HICFB3 CSEX; RUN;

PROC FREQ; TABLES
    GRA104
    GRA204
    GRA304R
        GRA404
    GRA504R
        GRA604
        GRA704R
    GRA804

    CGRA108
    CGRA208
    CGRA308R

    CGRA508R
    CGRA608
    CGRA708R

```

```

CGRA808

CFB108 CFB208 CFB308; RUN;

PROC MEANS; VAR CGRA106 CGRA206 CGRA306 CGRA406 CGRA506 CGRA606 CGRA706
CGRA108 CGRA208 CGRA308 CGRA508 CGRA608 CGRA708 CGRA808;
RUN;

PROC MEANS MEDIAN MEAN STD MIN MAX N; VAR
AFQT06
ED08
CPPVTRAW86
CED08
CINCOME08
SUMCFB
INCOME08
SUMGRA
SUMCGRA
SUMCFB;
RUN;

PROC LOGISTIC DESCENDING; MODEL HICFB1 = SUMGRA LOGAFQT06 ED08 INCOME08_1000
SUMCGRA LOGCPPVTRAW86 CED08 CINCOME08_1000 / STB;
RUN;

PROC LOGISTIC DESCENDING; MODEL HICFB2 = SUMGRA LOGAFQT06 ED08 INCOME08_1000
SUMCGRA LOGCPPVTRAW86 CED08 CINCOME08_1000 / STB;
RUN;

PROC LOGISTIC DESCENDING; MODEL HICFB3 = SUMGRA LOGAFQT06 ED08 INCOME08_1000
SUMCGRA LOGCPPVTRAW86 CED08 CINCOME08_1000 / STB;
RUN;

DATA DISS.P2; SET DISS.FINAL;

IF CSEX=1 THEN CSEX=1;
ELSE IF CSEX=2 THEN CSEX=0; *1=MALE 0=FEMALE;

SUMCFB=CFB108 + CFB208 + CFB308;

CINCOME08=SUM(CWAGE08, CFARMB08);

IF GRA104 IN (8 9) THEN DELETE; IF GRA204 IN (8 9) THEN DELETE; IF GRA304 IN
(8 9) THEN DELETE; IF GRA404 IN (8 9) THEN DELETE; IF GRA504 IN (8 9) THEN
DELETE;
IF GRA604 IN (8 9) THEN DELETE; IF GRA704 IN (8 9) THEN DELETE; IF GRA804 IN
(8 9) THEN DELETE;

```

```

IF WAGE08 = . THEN WAGE08 = ((WAGELOW08 + WAGEHI08) / 2);
INCOME08 = SUM(MIL08, WAGE08, FARM08);
IF GRA304 = 1 THEN GRA304R = 4; ELSE IF GRA304 = 2 THEN GRA304R = 3; ELSE IF
GRA304 = 3 THEN GRA304R = 2; ELSE IF GRA304 = 4 THEN GRA304R =1;ELSE GRA304R
=.;
IF GRA504 = 1 THEN GRA504R = 4; ELSE IF GRA504 = 2 THEN GRA504R = 3; ELSE IF
GRA504 = 3 THEN GRA504R = 2; ELSE IF GRA504 = 4 THEN GRA504R =1;ELSE GRA504R
=.;
IF GRA704 = 1 THEN GRA704R = 4; ELSE IF GRA704 = 2 THEN GRA704R = 3; ELSE IF
GRA704 = 3 THEN GRA704R = 2; ELSE IF GRA704 = 4 THEN GRA704R =1;ELSE GRA704R
=.;
IF CGRA308 = 1 THEN CGRA308R = 4; ELSE IF CGRA308 = 2 THEN CGRA308R = 3; ELSE
IF CGRA308 = 3 THEN CGRA308R = 2; ELSE IF CGRA308 = 4 THEN CGRA308R =1; ELSE
CGRA308R=.;
IF CGRA508 = 1 THEN CGRA508R = 4; ELSE IF CGRA508 = 2 THEN CGRA508R = 3; ELSE
IF CGRA508 = 3 THEN CGRA508R = 2; ELSE IF CGRA508 = 4 THEN CGRA508R =1; ELSE
CGRA508R=.;
IF CGRA708 = 1 THEN CGRA708R = 4; ELSE IF CGRA708 = 2 THEN CGRA708R = 3; ELSE
IF CGRA708 = 3 THEN CGRA708R = 2; ELSE IF CGRA708 = 4 THEN CGRA708R =1; ELSE
CGRA708R=.;
IF CGRA306 = 1 THEN CGRA306R = 4; ELSE IF CGRA306 = 2 THEN CGRA306R = 3; ELSE
IF CGRA306 = 3 THEN CGRA306R = 2; ELSE IF CGRA306 = 4 THEN CGRA306R =1; ELSE
CGRA306R=.;
IF CGRA506 = 1 THEN CGRA506R = 4; ELSE IF CGRA506 = 2 THEN CGRA506R = 3; ELSE
IF CGRA506 = 3 THEN CGRA506R = 2; ELSE IF CGRA506 = 4 THEN CGRA506R =1; ELSE
CGRA506R=.;
IF CGRA706 = 1 THEN CGRA706R = 4; ELSE IF CGRA706 = 2 THEN CGRA706R = 3; ELSE
IF CGRA706 = 3 THEN CGRA706R = 2; ELSE IF CGRA706 = 4 THEN CGRA706R =1; ELSE
CGRA706R=.;
CGRA806 = 2;
SUMGRA = GRA104 + GRA204 + GRA304R + GRA404 + GRA504R + GRA604 + GRA704R +
GRA804;SUMCGRA = CGRA108 + CGRA208 + CGRA308R + CGRA508R + CGRA608 +
CGRA708R + CGRA808;
SUMCGRA06 = CGRA106 + CGRA206 + CGRA306R + CGRA406 + CGRA506R + CGRA606 +
CGRA706R + CGRA806;
IF SUMCGRA = . THEN SUMCGRA = SUMCGRA06;
IF SUMGRA = . THEN SUMGRA = 24; IF AFQT06 = . THEN AFQT06 = 31928;LOGAFQT06 =
LOG(AFQT06); IF ED08 = . THEN ED08 = 12;
IF INCOME08 = . THEN INCOME08 = 20000;
LOGINCOME08 = LOG(INCOME08);
IF CPPVTRAW86 = . THEN CPPVTRAW86 = 57; else CPPVTRAW86=CPPVTRAW86;
logCPPVTRAW86 = LOG(CPPVTRAW86);
IF CED08 = . THEN CED08 = 12;
IF CINCOME08 = . THEN CINCOME08 = 7400; else cincome08=cincome08;
LOGCINCOME08 = LOG(CINCOME08);

IF SUMGRA;
IF AFQT06;
IF ED08;
IF INCOME08;
IF SUMCGRA;
IF CPPVTRAW86;
IF CED08;
IF CINCOME08;
IF SUMCFB;

```

```

IF SUMCFB GT 3 THEN HICFB=1;
ELSE IF 3 LE SUMCFB LE 14 THEN HICFB=0;
ELSE HICFB=.;

IF CFB108 = 1 THEN HICFB1=1; ELSE IF 1 LT CFB108 LE 5 THEN HICFB1=0; ELSE
HICFB1=.;
IF CFB208 = 1 THEN HICFB2=1; ELSE IF 1 LT CFB208 LE 5 THEN HICFB2=0; ELSE
HICFB2=.;
IF CFB308 = 1 THEN HICFB3=1; ELSE IF 1 LT CFB308 LE 4 THEN HICFB3=0; ELSE
HICFB3=.;

PROC FREQ; TABLES CFB108 HICFB1 CFB208 HICFB2 CFB308 HICFB3 CSEX; RUN;

PROC FREQ; TABLES
    GRA104
    GRA204
    GRA304R
        GRA404
    GRA504R
        GRA604
        GRA704R
    GRA804

    CGRA108
    CGRA208
    CGRA308R

    CGRA508R
    CGRA608
    CGRA708R
    CGRA808

    CFB108 CFB208 CFB308; RUN;

PROC MEANS; VAR CGRA106 CGRA206 CGRA306 CGRA406 CGRA506 CGRA606 CGRA706
CGRA108 CGRA208 CGRA308 CGRA508 CGRA608 CGRA708 CGRA808;
RUN;

PROC MEANS MEDIAN MEAN STD MIN MAX N; VAR
    AFQT06
    ED08
    CPPVTRAW86
    CED08
    CINCOME08
    SUMCFB
    INCOME08
    SUMGRA
    SUMCGRA
    HICFB1 HICFB2 HICFB3 CSEX;
RUN;

PROC LOGISTIC DESCENDING; MODEL HICFB1 = SUMGRA LOGAFQT06 ED08 LOGINCOME08
SUMCGRA LOGCPPVTRAW86 CED08 LOGCINCOME08 / STB;
RUN;

```

```

PROC LOGISTIC DESCENDING; MODEL HICFB2 = SUMGRA LOGAFQT06 ED08 LOGINCOME08
SUMCGRA LOGCPPVTRAW86 CED08 LOGCINCOME08 / STB;
RUN;

PROC LOGISTIC DESCENDING; MODEL HICFB3 = SUMGRA LOGAFQT06 ED08 LOGINCOME08
SUMCGRA LOGCPPVTRAW86 CED08 LOGCINCOME08 / STB;
RUN;

```

Regression Output Paper 3

The SAS System

17:13 Tuesday, May 15, 2012 39

The FREQ Procedure

HOW OFTEN PUTS OFF BUYING NECESSARY 2008

CFB108	Frequency	%	Cumulative	
			Frequency	%
ff				
1	534	39.53	534	39.53
2	392	29.02	926	68.54
3	277	20.50	1203	89.05
4	80	5.92	1283	94.97
5	68	5.03	1351	100.00

HICFB1	Frequency	%	Cumulative	
			Frequency	%
0	817	60.47	817	60.47
1	534	39.53	1351	100.00

DIFFICULTY PAYING BILLS 2008

CFB208	Frequency	%	Cumulative	
			Frequency	%
ff			ffffffffffffffffffffffffffffffff	ffffffffffffffff
1	468	34.64	468	34.64
2	400	29.61	868	64.25
3	288	21.32	1156	85.57
4	117	8.66	1273	94.23
5	78	5.77	1351	100.00

HICFB2	Frequency	%	Cumulative	
			Frequency	%
ff				
0	883	65.36	883	65.36
1	468	34.64	1351	100.00

MONEY LEFT OVER AT END OF MONTH 2008

CFB308	Frequency	%	Cumulative	
			Frequency	%
ff				
1	132	9.77	132	9.77
2	619	45.82	751	55.59
3	478	35.38	1229	90.97
4	122	9.03	1351	100.00

The FREQ Procedure

HICFB3	Frequency	%	Cumulative Frequency	Cumulative %
0	1219	90.23	1219	90.23
1	132	9.77	1351	100.00

SEX OF CHILD

CSEX	Frequency	%	Cumulative Frequency	Cumulative %
0	680	50.33	680	50.33
1	671	49.67	1351	100.00

The FREQ Procedure

FAMILY ATTITUDES - WOMAN'S PLACE IS IN THE HOME? 2004

GRA104	Frequency	%	Cumulative	
			Frequency	%
ff				
1	30	2.32	30	2.32
2	95	7.35	125	9.67
3	543	42.03	668	51.70
4	624	48.30	1292	100.00

Frequency Missing = 59

FAMILY ATTITUDES - WIFE HAS NOT TIME FOR OTHER EMP 2004

GRA204			Cumulative		Cumulative
	Frequency	%	Frequency	%	
ff					
1	53	4.10	53		4.10
2	129	9.98	182		14.09
3	674	52.17	856		66.25
4	436	33.75	1292		100.00

Frequency Missing = 59

GRA304R	Frequency	%	Cumulative	
			Frequency	%
ff				
1	212	16.41	212	16.41
2	546	42.26	758	58.67
3	404	31.27	1162	89.94
4	130	10.06	1292	100.00

Frequency Missing = 59

FAMILY ATTITUDES - EMP OF WIVES LEADS TO DELINQUEN 2004

GRA404	Frequency	%	Cumulative	
			Frequency	%
ff				
1	47	3.64	47	3.64
2	256	19.81	303	23.45
3	759	58.75	1062	82.20
4	230	17.80	1292	100.00

Frequency Missing = 59

The FREQ Procedure

GRA504R	Frequency	%	Cumulative	
			Frequency	%
ff				
1	23	1.78	23	1.78
2	149	11.53	172	13.31
3	699	54.10	871	67.41
4	421	32.59	1292	100.00

Frequency Missing = 59

FAMILY ATTITUDES - TRAD HUSBAND/WIFE ROLES BEST 2004

GRA604			Cumulative		Cumulative
	Frequency	%	Frequency	%	
ff					
1	49	3.79	49	3.79	
2	235	18.19	284	21.98	
3	696	53.87	980	75.85	
4	312	24.15	1292	100.00	

Frequency Missing = 59

GRA704R			Cumulative		Cumulative
	Frequency	%	Frequency	%	
ff					
1	13	1.01	13	1.01	
2	42	3.25	55	4.26	
3	669	51.78	724	56.04	
4	568	43.96	1292	100.00	

Frequency Missing = 59

FAMILY ATTITUDES - WOMEN ARE HAPPIER IN TRAD ROLES 2004

GRA804			Cumulative		Cumulative
	Frequency	%	Frequency	%	
ff					
1	67	5.19	67	5.19	
2	286	22.14	353	27.32	
3	762	58.98	1115	86.30	
4	177	13.70	1292	100.00	

Frequency Missing = 59

The FREQ Procedure

A WOMANS PLACE IS IN THE HOME 2008

CGRA108	Frequency	%	Cumulative	
			Frequency	%
1	17	36.96	17	36.96
2	21	45.65	38	82.61
3	7	15.22	45	97.83
4	1	2.17	46	100.00

Frequency Missing = 1305

A WIFE HAS NO TIME FOR OUTSIDE EMPL 2008

CGRA208	Frequency	%	Cumulative	
			Frequency	%
1	11	23.91	11	23.91
2	28	60.87	39	84.78
3	6	13.04	45	97.83
4	1	2.17	46	100.00

Frequency Missing = 1305

CGRA308R	Frequency	%	Cumulative	
			Frequency	%
1	4	8.70	4	8.70
2	23	50.00	27	58.70
3	14	30.43	41	89.13
4	5	10.87	46	100.00

Frequency Missing = 1305

CGRA508R	Frequency	%	Cumulative	
			Frequency	%
1	14	30.43	14	30.43
2	27	58.70	41	89.13
3	4	8.70	45	97.83
4	1	2.17	46	100.00

Frequency Missing = 1305

The FREQ Procedure

HUSBND SHOULD ACHIEVE, WIFE AT HOME 2008

CGRA608	Frequency		Cumulative	
		%	Frequency	%
1	4	8.70	4	8.70
2	30	65.22	34	73.91
3	12	26.09	46	100.00

Frequency Missing = 1305

CGRA708R	Frequency		Cumulative	
		%	Frequency	%
1	16	34.78	16	34.78
2	29	63.04	45	97.83
4	1	2.17	46	100.00

Frequency Missing = 1305

WOMEN HAPPIER STAYING HOME W KIDS 2008

CGRA808	Frequency		Cumulative	
		%	Frequency	%
1	2	4.35	2	4.35
2	29	63.04	31	67.39
3	15	32.61	46	100.00

Frequency Missing = 1305

HOW OFTEN PUTS OFF BUYING NECESSARY 2008

CFB108	Frequency		Cumulative	
		%	Frequency	%
1	534	39.53	534	39.53
2	392	29.02	926	68.54
3	277	20.50	1203	89.05
4	80	5.92	1283	94.97
5	68	5.03	1351	100.00

The FREQ Procedure

DIFFICULTY PAYING BILLS 2008

CFB208	Frequency	%	Cumulative Frequency	Cumulative %
ff				
1	468	34.64	468	34.64
2	400	29.61	868	64.25
3	288	21.32	1156	85.57
4	117	8.66	1273	94.23
5	78	5.77	1351	100.00

MONEY LEFT OVER AT END OF MONTH 2008

CFB308	Frequency	%	Cumulative Frequency	Cumulative %
ff				
1	132	9.77	132	9.77
2	619	45.82	751	55.59
3	478	35.38	1229	90.97
4	122	9.03	1351	100.00

The MEANS Procedure

Variable	Label	N	Mean	Std Dev	Minimum
CGRA106	A WOMANS PLACE IS IN THE HOME 2006	1305	1.7118774	0.6655789	1.0000000
CGRA206	A WIFE HAS NO TIME FOR OUTSIDE EMPL 2006	1305	1.8865900	0.6595310	1.0000000
CGRA306	A WORKING WIFE FEELS MORE USEFUL 2006	1305	2.5547893	0.7931516	1.0000000
CGRA406	EMPL OF BOTH PARENTS IS NECESSARY 2006	1304	3.1142638	0.7106118	1.0000000
CGRA506	HUSBND SHOULD ACHIEVE, WIFE AT HOME 2006	1305	2.0314176	0.6701981	1.0000000
CGRA606	MEN SHOULD SHARE WORK AROUND HOUSE 2006	1305	3.3425287	0.5860663	1.0000000
CGRA706	WOMEN HAPPIER STAYING HOME W KIDS 2006	1305	2.1325670	0.6917934	1.0000000
CGRA108	A WOMANS PLACE IS IN THE HOME 2008	46	1.8260870	0.7689632	1.0000000
CGRA208	A WIFE HAS NO TIME FOR OUTSIDE EMPL 2008	46	1.9347826	0.6799403	1.0000000
CGRA308	A WORKING WIFE FEELS MORE USEFUL 2008	46	2.5652174	0.8069744	1.0000000
CGRA508	EMPL OF BOTH PARENTS IS NECESSARY 2008	46	3.1739130	0.6767356	1.0000000
CGRA608	HUSBND SHOULD ACHIEVE, WIFE AT HOME 2008	46	2.1739130	0.5697698	1.0000000
CGRA708	MEN SHOULD SHARE WORK AROUND HOUSE 2008	46	3.3043478	0.5914038	1.0000000
CGRA808	WOMEN HAPPIER STAYING HOME W KIDS 2008	46	2.2826087	0.5441831	1.0000000

Variable	Label	Maximum
CGRA106	A WOMANS PLACE IS IN THE HOME 2006	4.0000000
CGRA206	A WIFE HAS NO TIME FOR OUTSIDE EMPL 2006	4.0000000
CGRA306	A WORKING WIFE FEELS MORE USEFUL 2006	4.0000000
CGRA406	EMPL OF BOTH PARENTS IS NECESSARY 2006	4.0000000
CGRA506	HUSBND SHOULD ACHIEVE, WIFE AT HOME 2006	4.0000000
CGRA606	MEN SHOULD SHARE WORK AROUND HOUSE 2006	4.0000000
CGRA706	WOMEN HAPPIER STAYING HOME W KIDS 2006	4.0000000
CGRA108	A WOMANS PLACE IS IN THE HOME 2008	4.0000000
CGRA208	A WIFE HAS NO TIME FOR OUTSIDE EMPL 2008	4.0000000
CGRA308	A WORKING WIFE FEELS MORE USEFUL 2008	4.0000000
CGRA508	EMPL OF BOTH PARENTS IS NECESSARY 2008	4.0000000
CGRA608	HUSBND SHOULD ACHIEVE, WIFE AT HOME 2008	3.0000000
CGRA708	MEN SHOULD SHARE WORK AROUND HOUSE 2008	4.0000000
CGRA808	WOMEN HAPPIER STAYING HOME W KIDS 2008	3.0000000

The MEANS Procedure

Variable	Label	Median	Mean	Std Dev
AFQT06	PROFILES AFQT PRCTILE 2006 (REV) 81	25589.00	30289.20	24150.97
ED08	HIGHEST GRADE COMPLTD (REV) 2008	12.000000	12.7017024	2.1954138
CPPVTRAW86	PPVT: TOTAL RAW SCORE 86	57.000000	57.7653590	30.4363406
CED08	HIGHEST GRADE COMPLETED AS OF 2008 2008	12.000000	12.9785344	2.2221740
CINCOME08		23453.00	26606.55	20411.22
SUMCFB		6.000000	6.7290896	2.5538420
INCOME08		24000.00	28078.42	21682.16
SUMGRA		24.000000	24.1273131	3.1449080
SUMCGRA		17.000000	17.1184308	1.6002433

Variable	Label	Minimum	Maximum	N
AFQT06	PROFILES AFQT PRCTILE 2006 (REV) 81	172.000000	98645.00	1351
ED08	HIGHEST GRADE COMPLTD (REV) 2008	3.000000	20.000000	1351
CPPVTRAW86	PPVT: TOTAL RAW SCORE 86	1.000000	141.000000	1351
CED08	HIGHEST GRADE COMPLETED AS OF 2008 2008	7.000000	20.000000	1351
CINCOME08		45.000000	129116.00	1351
SUMCFB		3.000000	14.000000	1351
INCOME08		100.000000	307823.00	1351
SUMGRA		13.000000	32.000000	1351
SUMCGRA		10.000000	23.000000	1351

The LOGISTIC Procedure

Model Information

Data Set	DISS.P2
Response Variable	HICFB1
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	1351
Number of Observations Used	1351

Response Profile

Ordered Value	HICFB1	Total Frequency
1	1	534
2	0	817

Probability modeled is HICFB1=1.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	1815.161	1735.630
SC	1820.370	1782.508
-2 Log L	1813.161	1717.630

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	95.5308	8	<.0001
Score	92.8475	8	<.0001
Wald	85.7801	8	<.0001

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Standardized Estimate
Intercept	1	-3.0057	0.8967	11.2356	0.0008	
SUMGRA	1	-0.0596	0.0190	9.8917	0.0017	-0.1034
LOGAFQT06	1	0.2555	0.0606	17.7587	<.0001	0.1659
ED08	1	0.0795	0.0303	6.8828	0.0087	0.0962
INCOME08_1000	1	-0.00028	0.00286	0.0099	0.9207	-0.00340
SUMCGRA	1	0.0126	0.0364	0.1194	0.7297	0.0111
LOGCPPVTRAW86	1	-0.1498	0.0837	3.1989	0.0737	-0.0585
CED08	1	0.0354	0.0284	1.5492	0.2132	0.0434
CINCOME08_1000	1	0.0142	0.00317	20.1618	<.0001	0.1601

Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
SUMGRA	0.942	0.908	0.978
LOGAFQT06	1.291	1.146	1.454
ED08	1.083	1.020	1.149
INCOME08_1000	1.000	0.994	1.005
SUMCGRA	1.013	0.943	1.087
LOGCPPVTRAW86	0.861	0.731	1.014
CED08	1.036	0.980	1.095
CINCOME08_1000	1.014	1.008	1.021

Association of Predicted Probabilities and Observed Responses

% Concordant	64.0	Somers' D	0.285
% Discordant	35.5	Gamma	0.286
% Tied	0.4	Tau-a	0.136
Pairs	436278	c	0.643

The LOGISTIC Procedure

Model Information

Data Set	DISS.P2
Response Variable	HICFB2
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	1351
Number of Observations Used	1351

Response Profile

Ordered Value	HICFB2	Total Frequency
1	1	468
2	0	883

Probability modeled is HICFB2=1.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	1745.319	1682.643
SC	1750.528	1729.520
-2 Log L	1743.319	1664.643

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	78.6766	8	<.0001
Score	78.7390	8	<.0001
Wald	71.0917	8	<.0001

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Standardized Estimate
Intercept	1	-0.5993	0.9028	0.4407	0.5068	
SUMGRA	1	-0.0711	0.0193	13.5866	0.0002	-0.1233
LOGAFQT06	1	0.0704	0.0589	1.4289	0.2319	0.0457
ED08	1	0.0720	0.0307	5.4870	0.0192	0.0871
INCOME08_1000	1	-0.00387	0.00305	1.6129	0.2041	-0.0462
SUMCGRA	1	0.00165	0.0371	0.0020	0.9645	0.00146
LOGCPPVTRAW86	1	-0.1699	0.0850	3.9953	0.0456	-0.0663
CED08	1	0.0180	0.0290	0.3830	0.5360	0.0220
CINCOME08_1000	1	0.0205	0.00327	39.4477	<.0001	0.2310

Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
SUMGRA	0.931	0.897	0.967
LOGAFQT06	1.073	0.956	1.204
ED08	1.075	1.012	1.141
INCOME08_1000	0.996	0.990	1.002
SUMCGRA	1.002	0.931	1.077
LOGCPPVTRAW86	0.844	0.714	0.997
CED08	1.018	0.962	1.078
CINCOME08_1000	1.021	1.014	1.027

Association of Predicted Probabilities and Observed Responses

% Concordant	62.7	Somers' D	0.259
% Discordant	36.8	Gamma	0.261
% Tied	0.5	Tau-a	0.118
Pairs	413244	c	0.630

The LOGISTIC Procedure

Model Information

Data Set	DISS.P2
Response Variable	HICFB3
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	1351
Number of Observations Used	1351

Response Profile

Ordered Value	HICFB3	Total Frequency
1	1	132
2	0	1219

Probability modeled is HICFB3=1.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	866.672	825.973
SC	871.880	872.850
-2 Log L	864.672	807.973

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	56.6991	8	<.0001
Score	64.1481	8	<.0001
Wald	56.0772	8	<.0001

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Standardized Estimate
Intercept	1	-6.8654	1.5926	18.5837	<.0001	
SUMGRA	1	-0.0290	0.0305	0.9050	0.3414	-0.0502
LOGAFQT06	1	0.2258	0.1078	4.3853	0.0362	0.1466
ED08	1	0.0964	0.0468	4.2350	0.0396	0.1167
INCOME08_1000	1	-0.00165	0.00461	0.1284	0.7201	-0.0197
SUMCGRA	1	0.0487	0.0603	0.6543	0.4186	0.0430
LOGCPPVTRAW86	1	0.0250	0.1443	0.0300	0.8624	0.00977
CED08	1	0.0232	0.0445	0.2718	0.6021	0.0284
CINCOME08_1000	1	0.0203	0.00403	25.3134	<.0001	0.2280

Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
SUMGRA	0.971	0.915	1.031
LOGAFQT06	1.253	1.015	1.548
ED08	1.101	1.005	1.207
INCOME08_1000	0.998	0.989	1.007
SUMCGRA	1.050	0.933	1.182
LOGCPPVTRAW86	1.025	0.773	1.361
CED08	1.023	0.938	1.117
CINCOME08_1000	1.020	1.012	1.029

Association of Predicted Probabilities and Observed Responses

% Concordant	67.7	Somers' D	0.366
% Discordant	31.2	Gamma	0.370
% Tied	1.1	Tau-a	0.065
Pairs	160908	c	0.683

The FREQ Procedure

HOW OFTEN PUTS OFF BUYING NECESSARY 2008

CFB108	Frequency	%	Cumulative Frequency	Cumulative %
1	533	39.48	533	39.48
2	392	29.04	925	68.52
3	277	20.52	1202	89.04
4	80	5.93	1282	94.96
5	68	5.04	1350	100.00

HICFB1	Frequency	%	Cumulative Frequency	Cumulative %
0	817	60.52	817	60.52
1	533	39.48	1350	100.00

DIFFICULTY PAYING BILLS 2008

CFB208	Frequency	%	Cumulative Frequency	Cumulative %
1	468	34.67	468	34.67
2	400	29.63	868	64.30
3	287	21.26	1155	85.56
4	117	8.67	1272	94.22
5	78	5.78	1350	100.00

HICFB2	Frequency	%	Cumulative Frequency	Cumulative %
0	882	65.33	882	65.33
1	468	34.67	1350	100.00

MONEY LEFT OVER AT END OF MONTH 2008

CFB308	Frequency	%	Cumulative Frequency	Cumulative %
1	132	9.78	132	9.78
2	618	45.78	750	55.56
3	478	35.41	1228	90.96
4	122	9.04	1350	100.00

The FREQ Procedure

HICFB3	Frequency	%	Cumulative Frequency	Cumulative %
0	1218	90.22	1218	90.22
1	132	9.78	1350	100.00

SEX OF CHILD

CSEX	Frequency	%	Cumulative Frequency	Cumulative %
0	679	50.30	679	50.30
1	671	49.70	1350	100.00

The FREQ Procedure

FAMILY ATTITUDES - WOMAN'S PLACE IS IN THE HOME? 2004

GRA104			Cumulative		Cumulative
	Frequency	%	Frequency	%	
ff					
1	30	2.32	30	2.32	
2	95	7.36	125	9.68	
3	542	41.98	667	51.67	
4	624	48.33	1291	100.00	

Frequency Missing = 59

FAMILY ATTITUDES - WIFE HAS NOT TIME FOR OTHER EMP 2004

GRA204			Cumulative		Cumulative
	Frequency	%	Frequency	%	
ff					
1	53	4.11	53	4.11	
2	129	9.99	182	14.10	
3	673	52.13	855	66.23	
4	436	33.77	1291	100.00	

Frequency Missing = 59

GRA304R	Frequency	%	Cumulative	
			Frequency	%
ff				
1	212	16.42	212	16.42
2	545	42.22	757	58.64
3	404	31.29	1161	89.93
4	130	10.07	1291	100.00

Frequency Missing = 59

FAMILY ATTITUDES - EMP OF WIVES LEADS TO DELINQUEN 2004

GRA404	Frequency	%	Cumulative	
			Frequency	%
ff				
1	47	3.64	47	3.64
2	256	19.83	303	23.47
3	758	58.71	1061	82.18
4	230	17.82	1291	100.00

Frequency Missing = 59

The FREQ Procedure

GRA504R	Frequency	%	Cumulative	
			Frequency	%
1	23	1.78	23	1.78
2	149	11.54	172	13.32
3	698	54.07	870	67.39
4	421	32.61	1291	100.00

Frequency Missing = 59

FAMILY ATTITUDES - TRAD HUSBAND/WIFE ROLES BEST 2004

GRA604	Frequency	%	Cumulative	
			Frequency	%
1	49	3.80	49	3.80
2	234	18.13	283	21.92
3	696	53.91	979	75.83
4	312	24.17	1291	100.00

Frequency Missing = 59

GRA704R	Frequency	%	Cumulative	
			Frequency	%
1	13	1.01	13	1.01
2	42	3.25	55	4.26
3	668	51.74	723	56.00
4	568	44.00	1291	100.00

Frequency Missing = 59

FAMILY ATTITUDES - WOMEN ARE HAPPIER IN TRAD ROLES 2004

GRA804	Frequency	%	Cumulative	
			Frequency	%
1	67	5.19	67	5.19
2	286	22.15	353	27.34
3	761	58.95	1114	86.29
4	177	13.71	1291	100.00

Frequency Missing = 59

The FREQ Procedure

A WOMANS PLACE IS IN THE HOME 2008

CGRA108	Frequency	%	Cumulative	
			Frequency	%
1	17	36.96	17	36.96
2	21	45.65	38	82.61
3	7	15.22	45	97.83
4	1	2.17	46	100.00

Frequency Missing = 1304

A WIFE HAS NO TIME FOR OUTSIDE EMPL 2008

CGRA208	Frequency	%	Cumulative	
			Frequency	%
1	11	23.91	11	23.91
2	28	60.87	39	84.78
3	6	13.04	45	97.83
4	1	2.17	46	100.00

Frequency Missing = 1304

CGRA308R	Frequency	%	Cumulative	
			Frequency	%
1	4	8.70	4	8.70
2	23	50.00	27	58.70
3	14	30.43	41	89.13
4	5	10.87	46	100.00

Frequency Missing = 1304

CGRA508R	Frequency	%	Cumulative	
			Frequency	%
1	14	30.43	14	30.43
2	27	58.70	41	89.13
3	4	8.70	45	97.83
4	1	2.17	46	100.00

Frequency Missing = 1304

The FREQ Procedure

HUSBND SHOULD ACHIEVE, WIFE AT HOME 2008

CGRA608	Frequency	%	Cumulative Frequency	Cumulative %
	~~~~~			
1	4	8.70	4	8.70
2	30	65.22	34	73.91
3	12	26.09	46	100.00

Frequency Missing = 1304

CGRA708R	Frequency	%	Cumulative Frequency	Cumulative %
	~~~~~			
1	16	34.78	16	34.78
2	29	63.04	45	97.83
4	1	2.17	46	100.00

Frequency Missing = 1304

WOMEN HAPPIER STAYING HOME W KIDS 2008

CGRA808	Frequency	%	Cumulative Frequency	Cumulative %
	~~~~~			
1	2	4.35	2	4.35
2	29	63.04	31	67.39
3	15	32.61	46	100.00

Frequency Missing = 1304

HOW OFTEN PUTS OFF BUYING NECESSARY 2008

CFB108	Frequency	%	Cumulative Frequency	Cumulative %
	~~~~~			
1	533	39.48	533	39.48
2	392	29.04	925	68.52
3	277	20.52	1202	89.04
4	80	5.93	1282	94.96
5	68	5.04	1350	100.00

The FREQ Procedure

DIFFICULTY PAYING BILLS 2008

CFB208	Frequency	%	Cumulative Frequency	Cumulative %
ff				
1	468	34.67	468	34.67
2	400	29.63	868	64.30
3	287	21.26	1155	85.56
4	117	8.67	1272	94.22
5	78	5.78	1350	100.00

MONEY LEFT OVER AT END OF MONTH 2008

CFB308	Frequency	%	Cumulative Frequency	Cumulative %
ff				
1	132	9.78	132	9.78
2	618	45.78	750	55.56
3	478	35.41	1228	90.96
4	122	9.04	1350	100.00

The MEANS Procedure

Variable	Label	N	Mean	Std Dev	Minimum
CGRA106	A WOMANS PLACE IS IN THE HOME 2006	1304	1.7124233	0.6655419	1.0000000
CGRA206	A WIFE HAS NO TIME FOR OUTSIDE EMPL 2006	1304	1.8865031	0.6597765	1.0000000
CGRA306	A WORKING WIFE FEELS MORE USEFUL 2006	1304	2.5552147	0.7933069	1.0000000
CGRA406	EMPL OF BOTH PARENTS IS NECESSARY 2006	1304	3.1142638	0.7106118	1.0000000
CGRA506	HUSBND SHOULD ACHIEVE, WIFE AT HOME 2006	1304	2.0314417	0.6704547	1.0000000
CGRA606	MEN SHOULD SHARE WORK AROUND HOUSE 2006	1304	3.3427914	0.5862143	1.0000000
CGRA706	WOMEN HAPPIER STAYING HOME W KIDS 2006	1304	2.1326687	0.6920491	1.0000000
CGRA108	A WOMANS PLACE IS IN THE HOME 2008	46	1.8260870	0.7689632	1.0000000
CGRA208	A WIFE HAS NO TIME FOR OUTSIDE EMPL 2008	46	1.9347826	0.6799403	1.0000000
CGRA308	A WORKING WIFE FEELS MORE USEFUL 2008	46	2.5652174	0.8069744	1.0000000
CGRA508	EMPL OF BOTH PARENTS IS NECESSARY 2008	46	3.1739130	0.6767356	1.0000000
CGRA608	HUSBND SHOULD ACHIEVE, WIFE AT HOME 2008	46	2.1739130	0.5697698	1.0000000
CGRA708	MEN SHOULD SHARE WORK AROUND HOUSE 2008	46	3.3043478	0.5914038	1.0000000
CGRA808	WOMEN HAPPIER STAYING HOME W KIDS 2008	46	2.2826087	0.5441831	1.0000000

Variable	Label	Maximum
CGRA106	A WOMANS PLACE IS IN THE HOME 2006	4.0000000
CGRA206	A WIFE HAS NO TIME FOR OUTSIDE EMPL 2006	4.0000000
CGRA306	A WORKING WIFE FEELS MORE USEFUL 2006	4.0000000
CGRA406	EMPL OF BOTH PARENTS IS NECESSARY 2006	4.0000000
CGRA506	HUSBND SHOULD ACHIEVE, WIFE AT HOME 2006	4.0000000
CGRA606	MEN SHOULD SHARE WORK AROUND HOUSE 2006	4.0000000
CGRA706	WOMEN HAPPIER STAYING HOME W KIDS 2006	4.0000000
CGRA108	A WOMANS PLACE IS IN THE HOME 2008	4.0000000
CGRA208	A WIFE HAS NO TIME FOR OUTSIDE EMPL 2008	4.0000000
CGRA308	A WORKING WIFE FEELS MORE USEFUL 2008	4.0000000
CGRA508	EMPL OF BOTH PARENTS IS NECESSARY 2008	4.0000000
CGRA608	HUSBND SHOULD ACHIEVE, WIFE AT HOME 2008	3.0000000
CGRA708	MEN SHOULD SHARE WORK AROUND HOUSE 2008	4.0000000
CGRA808	WOMEN HAPPIER STAYING HOME W KIDS 2008	3.0000000

The MEANS Procedure

Variable	Label	Median	Mean	Std Dev
AFQT06	PROFILES AFQT PRCTILE 2006 (REV) 81	25615.00	30303.25	24154.39
ED08	HIGHEST GRADE COMPLTD (REV) 2008	12.0000000	12.7022222	2.1961442
CPPVTRAW86	PPVT: TOTAL RAW SCORE 86	57.0000000	57.7666667	30.4475816
CED08	HIGHEST GRADE COMPLETED AS OF 2008 2008	12.0000000	12.9792593	2.2228377
CINCOME08		23453.00	26590.71	20410.47
SUMCFB		6.0000000	6.7296296	2.5547112
INCOME08		24000.00	28082.92	21689.57
SUMGRA		24.0000000	24.1288889	3.1455398
SUMCGRA		20.0000000	20.1266667	1.9327730
HICFB1		0	0.3948148	0.4889920
HICFB2		0	0.3466667	0.4760848
HICFB3		0	0.0977778	0.2971240
CSEX	SEX OF CHILD	0	0.4970370	0.5001765

Variable	Label	Minimum	Maximum	N
AFQT06	PROFILES AFQT PRCTILE 2006 (REV) 81	172.0000000	98645.00	1350
ED08	HIGHEST GRADE COMPLTD (REV) 2008	3.0000000	20.0000000	1350
CPPVTRAW86	PPVT: TOTAL RAW SCORE 86	1.0000000	141.0000000	1350
CED08	HIGHEST GRADE COMPLETED AS OF 2008 2008	7.0000000	20.0000000	1350
CINCOME08		45.0000000	129116.00	1350
SUMCFB		3.0000000	14.0000000	1350
INCOME08		100.0000000	307823.00	1350
SUMGRA		13.0000000	32.0000000	1350
SUMCGRA		10.0000000	25.0000000	1350
HICFB1		0	1.0000000	1350
HICFB2		0	1.0000000	1350
HICFB3		0	1.0000000	1350
CSEX	SEX OF CHILD	0	1.0000000	1350

The LOGISTIC Procedure

Model Information

Data Set	DISS.P2
Response Variable	HICFB1
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	1350
Number of Observations Used	1350

Response Profile

Ordered Value	HICFB1	Total Frequency
1	1	533
2	0	817

Probability modeled is HICFB1=1.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	1813.304	1744.432
SC	1818.511	1791.303
-2 Log L	1811.304	1726.432

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	84.8716	8	<.0001
Score	81.7895	8	<.0001
Wald	77.1101	8	<.0001

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Standardized Estimate
Intercept	1	-4.4051	1.0675	17.0285	<.0001	
SUMGRA	1	-0.0584	0.0189	9.5269	0.0020	-0.1013
LOGAFQT06	1	0.2797	0.0605	21.3930	<.0001	0.1817
ED08	1	0.0843	0.0300	7.8878	0.0050	0.1020
LOGINCOME08	1	-0.0563	0.0627	0.8061	0.3693	-0.0313
SUMCGRA	1	-0.0120	0.0298	0.1629	0.6865	-0.0128
logCPPVTRAW86	1	-0.1085	0.0830	1.7103	0.1909	-0.0424
CED08	1	0.0453	0.0285	2.5276	0.1119	0.0555
LOGCINCOME08	1	0.2197	0.0692	10.0931	0.0015	0.1157

Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
SUMGRA	0.943	0.909	0.979
LOGAFQT06	1.323	1.175	1.489
ED08	1.088	1.026	1.154
LOGINCOME08	0.945	0.836	1.069
SUMCGRA	0.988	0.932	1.047
logCPPVTRAW86	0.897	0.762	1.056
CED08	1.046	0.990	1.106
LOGCINCOME08	1.246	1.088	1.427

Association of Predicted Probabilities and Observed Responses

% Concordant	63.6	Somers' D	0.276
% Discordant	36.0	Gamma	0.277
% Tied	0.5	Tau-a	0.132
Pairs	435461	c	0.638

The LOGISTIC Procedure

Model Information

Data Set	DISS.P2
Response Variable	HICFB2
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	1350
Number of Observations Used	1350

Response Profile

Ordered Value	HICFB2	Total Frequency
1	1	468
2	0	882

Probability modeled is HICFB2=1.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	1744.469	1692.472
SC	1749.676	1739.342
-2 Log L	1742.469	1674.472

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	67.9970	8	<.0001
Score	65.2713	8	<.0001
Wald	61.8271	8	<.0001

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Standardized Estimate
Intercept	1	-1.8667	1.0815	2.9789	0.0844	
SUMGRA	1	-0.0683	0.0193	12.5575	0.0004	-0.1184
LOGAFQT06	1	0.0976	0.0586	2.7707	0.0960	0.0634
ED08	1	0.0775	0.0303	6.5464	0.0105	0.0938
LOGINCOME08	1	-0.1406	0.0633	4.9349	0.0263	-0.0782
SUMCGRA	1	-0.0607	0.0302	4.0309	0.0447	-0.0647
logCPPVTRAW86	1	-0.1113	0.0845	1.7322	0.1881	-0.0435
CED08	1	0.0286	0.0290	0.9717	0.3242	0.0351
LOGCINCOME08	1	0.3624	0.0748	23.4888	<.0001	0.1908

Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
SUMGRA	0.934	0.899	0.970
LOGAFQT06	1.102	0.983	1.237
ED08	1.081	1.018	1.147
LOGINCOME08	0.869	0.767	0.984
SUMCGRA	0.941	0.887	0.999
logCPPVTRAW86	0.895	0.758	1.056
CED08	1.029	0.972	1.089
LOGCINCOME08	1.437	1.241	1.664

Association of Predicted Probabilities and Observed Responses

% Concordant	63.2	Somers' D	0.270
% Discordant	36.3	Gamma	0.271
% Tied	0.5	Tau-a	0.122
Pairs	412776	c	0.635

The LOGISTIC Procedure

Model Information

Data Set	DISS.P2
Response Variable	HICFB3
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	1350
Number of Observations Used	1350

Response Profile

Ordered Value	HICFB3	Total Frequency
1	1	132
2	0	1218

Probability modeled is HICFB3=1.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	866.466	822.200
SC	871.674	869.071
-2 Log L	864.466	804.200

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	60.2660	8	<.0001
Score	53.6718	8	<.0001
Wald	51.8642	8	<.0001

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Standardized Estimate
Intercept	1	-11.2985	1.9586	33.2772	<.0001	
SUMGRA	1	-0.0242	0.0304	0.6364	0.4250	-0.0420
LOGAFQT06	1	0.2507	0.1062	5.5747	0.0182	0.1628
ED08	1	0.1189	0.0466	6.5151	0.0107	0.1439
LOGINCOME08	1	-0.1873	0.0988	3.5914	0.0581	-0.1042
SUMCGRA	1	0.0109	0.0492	0.0492	0.8244	0.0116
logCPPVTRAW86	1	0.0552	0.1445	0.1461	0.7023	0.0216
CED08	1	0.0143	0.0444	0.1038	0.7473	0.0176
LOGCINCOME08	1	0.6787	0.1390	23.8455	<.0001	0.3573

Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
SUMGRA	0.976	0.920	1.036
LOGAFQT06	1.285	1.044	1.582
ED08	1.126	1.028	1.234
LOGINCOME08	0.829	0.683	1.006
SUMCGRA	1.011	0.918	1.113
logCPPVTRAW86	1.057	0.796	1.403
CED08	1.014	0.930	1.107
LOGCINCOME08	1.971	1.501	2.588

Association of Predicted Probabilities and Observed Responses

% Concordant	68.5	Somers' D	0.377
% Discordant	30.7	Gamma	0.380
% Tied	0.8	Tau-a	0.067
Pairs	160776	c	0.689

The FREQ Procedure

HOW FREQ R & PTR ARGUE ABT MONEY 2008

CMONEY08	Frequency	%	Cumulative Frequency	Cumulative %
ff				
1	145	15.76	145	15.76
2	262	28.48	407	44.24
3	302	32.83	709	77.07
4	211	22.93	920	100.00

CMONEY08bi	Frequency	%	Cumulative Frequency	Cumulative %
ff				
0	513	55.76	513	55.76
1	407	44.24	920	100.00

SUMCGRA	Frequency	%	Cumulative Frequency	Cumulative %
ff				
11	1	0.11	1	0.11
12	1	0.11	2	0.22
13	1	0.11	3	0.33
15	12	1.30	15	1.63
16	12	1.30	27	2.93
17	32	3.48	59	6.41
18	61	6.63	120	13.04
19	143	15.54	263	28.59
20	244	26.52	507	55.11
21	230	25.00	737	80.11
22	107	11.63	844	91.74
23	53	5.76	897	97.50
24	18	1.96	915	99.46
25	4	0.43	919	99.89
26	1	0.11	920	100.00

The FREQ Procedure

SUMCFB	Frequency	%	Cumulative Frequency	Cumulative %
ff				
3	60	6.52	60	6.52
4	135	14.67	195	21.20
5	143	15.54	338	36.74
6	159	17.28	497	54.02
7	100	10.87	597	64.89
8	99	10.76	696	75.65
9	73	7.93	769	83.59
10	72	7.83	841	91.41
11	28	3.04	869	94.46
12	28	3.04	897	97.50
13	11	1.20	908	98.70
14	12	1.30	920	100.00

B0	Frequency	%	Cumulative Frequency	Cumulative %
ff				
0	485	52.72	485	52.72
1	435	47.28	920	100.00

SEX OF CHILD

CSEX	Frequency	%	Cumulative Frequency	Cumulative %
ff				
0	435	47.28	435	47.28
1	485	52.72	920	100.00

The MEANS Procedure

Variable	Label	N	Mean	Std Dev
CMONEY08	HOW FREQ R & PTR ARGUE ABT MONEY 2008	920	2.6293478	1.0041305
SUMCFB		920	6.7532609	2.5596242
LOGCPPVTRAW86_NOMISS		920	3.9655060	0.6242552
CAGE08	AGE OF YA IN YEARS AT DATE OF INTV 2008	920	27.2065217	3.0053925
CED08	HIGHEST GRADE COMPLETED AS OF 2008 2008	920	12.8565217	2.2965795
CINCOME08		851	28362.12	22468.78
BO		920	0.4728261	0.4995326
CSEX	SEX OF CHILD	920	0.5271739	0.4995326

Variable	Label	Minimum	Maximum
CMONEY08	HOW FREQ R & PTR ARGUE ABT MONEY 2008	1.0000000	4.0000000
SUMCFB		3.0000000	14.0000000
LOGCPPVTRAW86_NOMISS		1.6094379	4.9487599
CAGE08	AGE OF YA IN YEARS AT DATE OF INTV 2008	18.0000000	35.0000000
CED08	HIGHEST GRADE COMPLETED AS OF 2008 2008	7.0000000	20.0000000
CINCOME08		0	125000.00
BO		0	1.0000000
CSEX	SEX OF CHILD	0	1.0000000

The CORR Procedure

11 Variables:	HICFB1	HICFB2	HICFB3	SUMGRA	LOGAFQT06	ED08
	LOGINCOME08	SUMCGRA	logCPPVTRAW86	CED08	LOGCINCOME08	

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
HICFB1	1350	0.39481	0.48899	533.00000	0	1.00000
HICFB2	1350	0.34667	0.47608	468.00000	0	1.00000
HICFB3	1350	0.09778	0.29712	132.00000	0	1.00000
SUMGRA	1350	24.12889	3.14554	32574	13.00000	32.00000
LOGAFQT06	1350	9.84181	1.17809	13286	5.14749	11.49928
ED08	1350	12.70222	2.19614	17148	3.00000	20.00000
LOGINCOME08	1350	9.88531	1.00878	13345	4.60517	12.63728
SUMCGRA	1350	20.12667	1.93277	27171	10.00000	25.00000
logCPPVTRAW86	1350	3.85983	0.70857	5211	0	4.94876
CED08	1350	12.97926	2.22284	17522	7.00000	20.00000
LOGCINCOME08	1350	9.84504	0.95499	13291	3.80666	11.76847

Simple Statistics

Variable	Label
HICFB1	
HICFB2	
HICFB3	
SUMGRA	
LOGAFQT06	
ED08	HIGHEST GRADE COMPLTD (REV) 2008
LOGINCOME08	
SUMCGRA	
logCPPVTRAW86	
CED08	HIGHEST GRADE COMPLETED AS OF 2008 2008
LOGCINCOME08	

The CORR Procedure

Pearson Correlation Coefficients, N = 1350
 Prob > |r| under H0: Rho=0

	HICFB1	HICFB2	HICFB3	SUMGRA
HICFB1	1.00000	0.41149 <.0001	0.19839 <.0001	-0.05094 0.0613
HICFB2	0.41149 <.0001	1.00000	0.33140 <.0001	-0.09322 0.0006
HICFB3	0.19839 <.0001	0.33140 <.0001	1.00000	-0.01270 0.6410
SUMGRA	-0.05094 0.0613	-0.09322 0.0006	-0.01270 0.6410	1.00000
LOGAFQT06	0.17995 <.0001	0.07349 0.0069	0.11439 <.0001	0.19678 <.0001
ED08 HIGHEST GRADE COMPLTD (REV) 2008	0.15098 <.0001	0.09101 0.0008	0.11054 <.0001	0.12757 <.0001
LOGINCOME08	0.05847 0.0317	-0.00200 0.9414	0.03153 0.2471	0.12359 <.0001
SUMCGRA	-0.01687 0.5356	-0.06629 0.0149	-0.00093 0.9728	0.08230 0.0025
logCPPVTRAW86	0.00002 0.9993	-0.01216 0.6554	0.04852 0.0747	0.07518 0.0057
CED08 HIGHEST GRADE COMPLETED AS OF 2008 2008	0.12689 <.0001	0.08735 0.0013	0.09062 0.0009	0.05721 0.0356
LOGCINCOME08	0.12753 <.0001	0.14809 <.0001	0.15362 <.0001	-0.00267 0.9219

Pearson Correlation Coefficients, N = 1350
 Prob > |r| under H0: Rho=0

	LOGAFQT06	ED08	LOGINCOME08	SUMCGRA
HICFB1	0.17995 <.0001	0.15098 <.0001	0.05847 0.0317	-0.01687 0.5356
HICFB2	0.07349 0.0069	0.09101 0.0008	-0.00200 0.9414	-0.06629 0.0149

The CORR Procedure

Pearson Correlation Coefficients, N = 1350
 Prob > |r| under H0: Rho=0

	LOGAFQT06	ED08	LOGINCOME08	SUMCGRA
HICFB3	0.11439 <.0001	0.11054 <.0001	0.03153 0.2471	-0.00093 0.9728
SUMGRA	0.19678 <.0001	0.12757 <.0001	0.12359 <.0001	0.08230 0.0025
LOGAFQT06	1.00000	0.40657 <.0001	0.30138 <.0001	0.00787 0.7728
ED08 HIGHEST GRADE COMPLTD (REV) 2008	0.40657 <.0001	1.00000	0.24488 <.0001	0.02286 0.4012
LOGINCOME08	0.30138 <.0001	0.24488 <.0001	1.00000	0.04671 0.0862
SUMCGRA	0.00787 0.7728	0.02286 0.4012	0.04671 0.0862	1.00000
logCPPVTRAW86	0.12307 <.0001	0.04801 0.0778	0.11688 <.0001	0.03637 0.1817
CED08 HIGHEST GRADE COMPLETED AS OF 2008 2008	0.26169 <.0001	0.29166 <.0001	0.17687 <.0001	0.06135 0.0242
LOGCINCOME08	0.16158 <.0001	0.09190 0.0007	0.26429 <.0001	-0.02463 0.3659

Pearson Correlation Coefficients, N = 1350
 Prob > |r| under H0: Rho=0

	log CPPVTRAW86	CED08	LOGCINCOME08
HICFB1	0.00002 0.9993	0.12689 <.0001	0.12753 <.0001
HICFB2	-0.01216 0.6554	0.08735 0.0013	0.14809 <.0001
HICFB3	0.04852 0.0747	0.09062 0.0009	0.15362 <.0001
SUMGRA	0.07518 0.0057	0.05721 0.0356	-0.00267 0.9219

The CORR Procedure

Pearson Correlation Coefficients, N = 1350
 Prob > |r| under H0: Rho=0

	log CPPVTRAW86	CED08	LOGCINCOME08
LOGAFQT06	0.12307 <.0001	0.26169 <.0001	0.16158 <.0001
ED08 HIGHEST GRADE COMPLTD (REV) 2008	0.04801 0.0778	0.29166 <.0001	0.09190 0.0007
LOGINCOME08	0.11688 <.0001	0.17687 <.0001	0.26429 <.0001
SUMCGRA	0.03637 0.1817	0.06135 0.0242	-0.02463 0.3659
logCPPVTRAW86	1.00000	0.13209 <.0001	0.16129 <.0001
CED08 HIGHEST GRADE COMPLETED AS OF 2008 2008	0.13209 <.0001	1.00000	0.30946 <.0001
LOGCINCOME08	0.16129 <.0001	0.30946 <.0001	1.00000

Appendix C - Curriculum Vita

Ms. Julie Cumbie
University of Central Oklahoma
Finance
(405) 974-5332
Email: jcumbie@uco.edu

Education

MBA, University of Central Oklahoma, 1983.
Major: Finance

PhD Candidate, Kansas State University.
Major: Personal Financial Planning

Professional Positions

Academic

Instructor, University of Central Oklahoma. (1990 - Present).

Professional Memberships

American Council on Consumer Interests.

Financial Planning Association.

Financial Therapy Association.

Development Activities Attended

"Faculty Enhancement Presentations," University of Central Oklahoma. (August 2010 - Present).

Conference Attendance, "Southwest Business Symposium," College of Business, UCO. (March 2001 - Present).

University Development, "Share Fair 2008," University of Central Oklahoma. (February 25, 2008).

Faculty Enhancement Presentations, University of Central Oklahoma. (August 2007).

TEACHING

Teaching Experience

University of Central Oklahoma
FIN 2313, Personal Finance, 3 courses.
FIN 3563, Fundamentals of Business Finance, 2 courses.

FIN 4413, Financial Institutions, 3 courses.

Awards and Honors

Vanderford Distinguished Teacher Award. (August 2007).

RESEARCH

Published Intellectual Contributions

Refereed Journal Articles

- Britt, S., Grable, J., Cumbie, J., Cupples, S., Henegar, J., Schindler, K., Archuleta, K. (2011). Student financial counseling: An analysis of a clinical and non-clinical sample. *Journal of Personal Finance*, 10(2). www.JournalofPersonalFinance.com
- MacDonald, S., Tilker, K. R., Cumbie, J. (2011). An Empirical Examination of the Securities Act of 1933 and its Application to the Oil and Gas Industry: The Case for an Industry Money Exception. *To appear in Oil Gas and Energy Quarterly*, 59(3).
- MacDonald, S., Cumbie, J., MacDonald, J. (2010). The 1934 Federal Credit Union Act and Effective, Ethical, and Accountable Board Governance. *Ethics and Critical Thinking*, 2010(2).
- Black, S., Cumbie, J., Arnold, A., MacDonald, S. (2009). The Impact of Personal Finance Courses on Students' Financial Decisions. *Global Education Journal*, 2009(1), 83-95. Franklinpublishing.net

Journal Articles

- MacDonald, S., Cumbie, J., MacDonald, J. (2010). American Bankers Association's Fleeting Victory in First National Bank and Trust vs. NCUA, and How This Case Can Inform Understanding Pending Financial Regulatory Reform. *Franklin Business and Law Review*, 2010(2).

Presentations Given

- Cumbie, J. (Presenter & Author), Grable, J., Coffman, B., Cupples, S., Henegar, J., American Council on Consumer Interests 2010 Annual Conference, "A Test of the Association Between Perceived and Objective Income Adequacy Measures," American Council on Consumer Interests, Federal Reserve Bank, Atlanta, GA.
- Cumbie, J. (Presenter & Author), Cupples, S. (Presenter & Author), Henegar, J. (Author Only), Schindler, K.. (Author Only), Archuleta, K.. (Author Only), Britt, S. (Author Only), Grable, J. (Author Only), American Council on Consumer Interests 2011 Annual Conference, "Student Financial Counseling: An Analysis of a Clinical and Non-Clinical Sample," American Council on Consumer Interests, Washington, D. C.
- Cumbie, J. (Presenter & Author), Britt, S. L. (Presenter & Author), Bell, M. M. (Presenter & Author), American Council on Consumer Interests 2012 Annual Conference, "The Influence of Locus of Control on Student Financial Behavior," American Council on Consumer Interests, Memphis, TN. (April 11, 2012).
- Cumbie, J. (Presenter & Author), Sages, R. (Presenter & Author), Britt, S. (Author Only), Financial Therapy Association 2011 Annual Conference, "Does Mental Health Really Influence Financial Behavior?," Financial Therapy Association, Athens, GA. (September 2011).

Cumbie, J. (Presenter & Author), MacDonald, S (Presenter & Author)., Southwest Business Symposium, "Does Litigation Impact Share Price? An Event Study of the UNOCAL 393 Patent Litigation and its Progeny," University of Central Oklahoma College of Business, University of Central Oklahoma, Edmond, OK. (March 2011).

Black, S. (Presenter & Author), Cumbie, J. (Presenter & Author), Ellis, R. (Presenter & Author), Southwest Business Symposium, "Critical Thinking in a Financial Institutions Course: Applying Anderson's Revised Taxonomy," UCO, Edmond, OK. (March 2009).

Black, S.(Author Only), Arnold, A. (Presenter & Author), Cumbie, J.(Presenter & Author), SWDSI 2009, "The Impact of Personal Finance Courses on Students' Financial Decisions," Decision Sciences Institute, Southwest Region, Federation of Business Disciplines, Oklahoma City, OK. (February 2009).

Black, S., Arnold, A., Cumbie, J., Oklahoma Research Day Poster, "The Impact of Personal Finance Courses on Students' Financial Decisions," Northeastern State University. (November 14, 2008).

Black, S. (Author Only), Cumbie, J. (Author Only), Arnold, A. (Presenter & Author), Southwest Business Symposium, "Do Personal Finance Courses Impact Students' Financial Decisions?," University of Central Oklahoma, Edmond, OK. (March 2008).

Research in Progress

"The Correlation between Anxiety and Money Management" (On-Going)

SERVICE

Department Service

Faculty Advisor, Finance Club.

Committee Member, Business Finance Articulation Review Committee. (January 1, 2012 - Present).

Committee Member, Dept. of Finance Textbook Committee. (January 15, 2008 - Present).

Committee Member, Dept. of Finance Faculty Screening Committee. (May 2006 - Present).

Committee Member, Dept. of Finance Assessment Committee. (January 2006 - Present).

Committee Member, Dept. of Finance Promotion and Tenure Committee. (January 2006 - 2009).

Committee Member, Dept. of Finance Textbook Selection Committee. (January 2006 - December 2006).

Committee Chair, Dept of Finance Self Study for Continuous Improvement. (January 2005 - January 2006).

College Service

Committee Member, Delta Mu Delta. (January 2010 - Present).

Committee Member, Southwest Business Symposium Committee. (August 2009 - July 2010).

Committee Member, CBA Honors and Scholarship Committee. (January 2001 - December 2009).

Committee Member, CBA Undergraduate Curriculum Committee. (January 2004 - September 2007).

Consulting

Academic, Art Keown / Pearson Prentice Hall, Textbook. (February 1, 2008 - June 1, 2008).