

**Delivery methods of financial information and sources of financial education as  
indicators of perceived financial well-being in South Dakota**

by

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A dissertation submitted to the graduate faculty  
in partial fulfillment of the requirements for the degree of

**DOCTOR OF PHILOSOPHY**

Major: Family and Consumer Sciences Education

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2009

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## ABSTRACT

The purpose of this research was to identify factors that are related to the perceived financial well-being of adults in South Dakota, specifically delivery methods of financial information and sources of financial education. This quantitative study used the eight-question *Personal Financial Wellness Scale* (PFW scale, also known as the *InCharge Financial Distress/Financial Well-Being Scale*) to measure perceived financial well-being. A random sample of 3,000 individuals was mailed a survey that elicited 814 completed questionnaires. The survey consisted of the PFW Scale, demographics, delivery methods of financial information, and sources of informal and formal financial education.

The PFW scale scores were calculated for all individuals, and the mean score was used as the dependent variable in all analysis. Independent variables included: demographic factors, delivery methods of financial information, sources of informal financial education, sources of formal financial education, and having formal or informal financial education. A block regression of the total sample was used with financial well-being as the dependent variable and all other items as independent variables to test for possible linear relationships. Reliability statistics of the sample were acceptable, and assumptions for the model were tested. An analysis of variance (ANOVA) with Bonferroni post-hoc test was used to identify pair-wise differences between mean perceived financial well-being for individual significant variables and for the variable of having formal or informal financial education. Data were analyzed using SPSS statistical software.

The mean perceived financial well-being for adult South Dakotans in the study was 6.24 (SD=2.18) on a ten-point scale. Demographic variables as a group did have a significant association with perceived financial well-being, and five individual demographic

variables emerged as being related to perceived financial well-being. Delivery methods of financial information as a group significantly impact the variance of perceived financial well-being, and one individual delivery method, television, was found to have a significant negative impact. Sources of informal or formal financial education variables as a group were not significant in explaining the variance in perceived financial well-being. However, individuals having neither informal nor formal financial education ( $M=6.06$ ,  $SD=2.31$ ) had significantly lower perceived financial well-being than individuals having both informal and formal financial education ( $M=6.67$ ,  $SD=2.15$ ).

This study shows that there may be a positive relationship between individuals receiving financial education in both the informal and formal setting and PFW scale scores. The delivery method used to deliver financial information may have a significant impact on financial well-being and should be considered. Future research may consider including delivery methods of financial information into a conceptual model of financial well-being. Financial planners, counselors, educators, psychologists, and extension educators can use the information to better serve their clients by targeting those individuals that may have low perceived financial well being: female, younger age, with dependent children in the home, working, or lower income. Targeting financial education resources using appropriate delivery methods as described is especially true for South Dakota, to which these results are most appropriate.



## CHAPTER 1. OVERVIEW

### Introduction

Average household incomes in the United States are becoming increasingly unequal, and the average consumer expenditures are not following the same trend. The ratio of consumer debt to personal income was about 108 % in 2004 (Weinberg, 2006).

Much research has been conducted on the construct of financial well-being. Objective measures, such as the consumption to income ratio, are often used to study overspending and financial well-being, and in recent decades, numerous models have identified various concepts, objective and subjective, associated with financial well-being. The *Personal Financial Wellness Scale* (PFW scale, also known as the *InCharge Financial Distress/Financial Well-Being Scale*) has been developed to measure the latent construct of financial well-being, and norms of the general population of adults in the United States have been documented (Prawitz, Garman, Sorhaindo, O'Neill, Kim, & Drentea, 2006).

Research indicates that objective measures, such as consumption to income, may vary by demographic factors and that objective attributes, personal attributes, evaluated attributes, personal characteristics, and standards of comparison are all important parts of the measure of financial well-being. *Objective attributes*, defined as quantitative indicators of the financial situation, include income, stage of the financial life cycle, marital status, number of children, and certain financial management behaviors (Porter & Garman, 1992). *Perceived attributes* are value-related indicators of objective attributes, and *evaluated attributes* are an individual's assessment of financial attributes when compared to *standards of comparison* such as aspirations, past financial experiences, peer financial reference groups, and future financial expectations (Porter & Garman, 1992). An individual's personal characteristics,

values, goals, and disposition, represent an overall outlook on life and affect all attributes of financial well-being, objective, perceived, and evaluated (Porter & Garman, 1992). Further investigation into perceived financial well-being by demographic factors is needed.

Financial literacy programs are in place across the country, and correlations have been found between financial knowledge and behavior. However, to date, research measuring the construct of financial well-being in the state of South Dakota is lacking, and the perceived financial well-being of adults in South Dakota is unknown. South Dakota high school students are required to complete 0.5 units of economics or personal finance courses to graduate. The rationale behind this requirement was to reverse national negative trends in this area (South Dakota Board of Education, 2004). However, state trends were not documented as a motivation. This may be because data on South Dakota financial well-being and sources of financial education are lacking. Students graduating in spring 2010 will be the first group affected. Therefore, effectiveness has not yet been determined.

Though research on the effectiveness of delivery methods of financial information is limited, literature on the diffusion of information is vast in the area of cooperative extension. Richardson (1993) reviewed numerous studies looking at clientele preferences and effectiveness of individual methods in delivering extension information. He stated "... that no single delivery method is suitable for everyone" (Richardson, 1993, p. 3). Also, mass media methods were seldom identified as valuable in receiving specific information (Richardson).

Little is still known about whether financial education efforts across the country are improving consumers' overall financial well-being (Lyons, Palmer, Jayaratne, & Scherpf, 2006). However, recent findings conclude that many approaches to financial education are

effective (Martin, 2007). Yet, the relationship between delivery methods of financial information or informal or formal sources of financial education and financial well-being in South Dakota has not been measured.

Porter and Garman (1992) identified evaluated attributes, an individual's assessment of financial attributes when judged against standards of comparison, including past financial experiences, as significant in the explanation of the variance in financial well-being. "These evaluated attributes of cash management, credit management, capital accumulation, risk management, retirement/estate planning, and general management corresponded to the six conceptual areas of personal finance utilized in the objective attribute group of the conceptual model" (Porter and Garman, 1992, p. 141). The Porter Conceptual Model of Financial Well-being includes demographic and financial management behavior indicators, but it does not include delivery methods of financial information or sources of financial education in the model (Porter & Garman, 1992).

For this study, the model will be adapted to include delivery methods of financial information and sources of financial education. The rationale behind this is that previous financial education may be considered a financial experience, and thus financial education as an indicator of perceived financial well-being should be tested. Previous studies have looked at the relationship between demographic factors and financial well-being, but relationships between delivery methods of financial information or sources of financial education and financial well-being have not been explored.

### **Purpose and Significance**

This research intends to identify factors that are related to the perceived financial well-being of adults in South Dakota, specifically delivery methods of financial information

and sources of financial education, to determine if these factors are associated with perceived financial well-being. Six research questions have been identified.

1. What is the perceived financial well-being of adults in South Dakota?
2. What demographic variables are related to perceived financial well-being?
3. What delivery methods of financial information are related to perceived financial well-being?
4. Is there a difference in perceived financial well-being between: individuals with informal financial education and individuals without informal financial education, individuals with formal financial education and individuals without formal financial education, and individuals with informal financial education and individuals with formal financial education?
5. What sources of formal financial education are related to perceived financial well-being?
6. What sources of informal financial education are related to perceived financial well-being?

The following seven hypothesis statements have been derived from the research questions, the review of literature, and the Porter Conceptual Model of Financial Well-being.

H<sub>1</sub>: There is a relationship between demographic variables and perceived financial well-being. Previous research by Porter and Garman (1992) found objective indicators as a group do explain variance in financial well-being, and Loibl & Hira (2005) concluded that the socio-demographic situation of an individual may influence financial satisfaction.

H<sub>2</sub>: There is a relationship between delivery methods of financial information and perceived financial well-being. Richardson (1993) conducted research looking at diffusion of information and found clientele preferences in delivery methods of information, noting that no single delivery method is appropriate for everyone.

Porter and Garman (1992) identified evaluated attributes, an individual's assessment of financial attributes when judged against standards of comparison, including past financial experiences, as significant in the explanation of the variance in financial well-being. Though delivery methods were not included in the Porter Conceptual Model of Financial Well-being, they may be considered previous financial experience and should be tested.

H<sub>3</sub>: There is a significant difference in perceived financial well-being between individuals with informal financial education and individuals without informal financial education.

H<sub>4</sub>: There is a significant difference in perceived financial well-being between individuals with formal financial education and individuals without formal financial education. Sources of financial education were not included in the original conceptual model, but, for this study, it will be adapted to include delivery methods of financial information and sources of financial education.

Also, preliminary findings by Courchane and Zorn (2005) discovered a positive association between financial knowledge and presence of financial education, and a connection between increases in financial knowledge and financial behavior has been found (Martin, 2007).

H<sub>5</sub>: There is a significant difference in perceived financial well-being between individuals with informal financial education and individuals with formal financial

education. In a study by Hogarth & Hilgert (2002), subjects were asked how much they had learned about financial topics from various sources. Even though high school or college courses were one of the choices, personal experience was the most important source of learning, friends and family were second, and media followed (Hogarth & Hilgert).

Research by Hilgert, Hogarth, and Beverly (2003) found that people preferred to learn from sources that were “on demand” and available when their time allowed. The top three preferred sources to get future financial information were media, brochures, and home videos, whereas internet, courses, and seminars were preferred less (Hilgert, Hogarth, & Beverly).

H<sub>6</sub>: There is a relationship between sources of informal financial education and perceived financial well-being. Johnson and Sherraden (2007) suggest that access to resources may affect skills learned in financial courses. Also, previous studies have shown individuals report learning more from and wanting to receive future information from some sources of financial information over others (Hogarth & Hilgert, 2002).

H<sub>7</sub>: There is a relationship between sources of formal financial education and perceived financial well-being. Again, individuals report learning more from some sources over others and also prefer getting future financial information from some sources more often than others (Hogarth & Hilgert, 2002).

The significance of this research to consumers, educators, counselors, and policy makers should be emphasized. Public policy on financial literacy and state and local efforts to educate consumers about important financial practices is critical, and knowing appropriate sources to disseminate this information is crucial to improving financial well-being in the United States. Educators in math, business, advertising, economics, financial planning, and

family and consumer sciences can use this research to help determine the most appropriate delivery methods and sources to reach their students. Financial planners, counselors, psychologists, and extension educators can use this information to better serve their clients. Finally, South Dakota, and other states with similar demographics, may use the results to more appropriately target their financial education resources in their communities.

### **Glossary of Terms**

- Consumption inequality: dispersion in the consumption of households (Hatcher, 2002)
- Debt: dissaving (Bryant, 1990 in Baek & Hong, 2004))
- Delivery methods: the way in which information is distributed to learners; delivery methods should (1) provide desired experiential opportunities for the learner, (2) reinforce the learner, and (3) provide opportunities for the learner to integrate new information with existing knowledge and skills (Richardson, Jenkins, & Crickenberger, n.d., p. 1)
- Evaluated attributes: an individual's assessment of financial attributes when judged against standards of comparison, such as an individual's assessment of the amount of money currently being saved and invested as compared to the amount saved and invested two years ago (Porter & Garman, 1992)
- Financial literacy: 1) being knowledgeable, educated, and informed on the issues of managing money and assets, banking, investments, credit, insurance, and taxes; 2) understanding the basic concepts underlying the management of money and assets (e.g. the time value of money in investments and the pooling of risks in insurance); and 3) using that knowledge and understanding to plan and implement financial decisions

(Hogarth, 2002); the ability to read, analyze, manage and communicate about the personal financial conditions that affect material well-being (Vitt, Anderson, Kent, Lyter, Siegenthaler, & Ward, 2001, p. xii)

- Formal (financial) education: classroom-based, provided by trained teachers (Corporation for Public Broadcasting, 2002); formal learning consists of learning that occurs within an organized and structured context and may lead to formal recognition (Colardyn & Bjornavold, 2004); programs sponsored by established education institutions, such as universities, high schools, and trade schools (Knowles, 1950)
- Income: components of income are wages and salaries; self-employment income; Social Security and private and government retirement income; interest, dividends, and rental and other property income; unemployment and workers' compensation and veterans' benefits; public assistance, Supplemental Security Income, and Food Stamps; rent or meals or both as pay; and regular contributions for support, such as alimony and child-support payments (U.S. Department of Labor, 2005)
- Income inequality: distribution of income among households or persons (Jesuit & Smeeding, 2003); dispersion in the incomes of households, both for the aged and the non-aged (Hatcher, 2002)
- Informal (financial) education: happens outside the classroom, in after-school programs, community-based organizations, museums, libraries, or at home (Corporation for Public Broadcasting, 2002); for the purpose of this study, will include non-formal learning and informal learning - *Non-formal learning* consists of learning embedded in planned activities that are not explicitly designated as learning, but which contain an important



learning element, *Informal learning* is learning resulting from daily life activities related to work, family, or leisure, and typically, it does not lead to certification (Colardyn & Bjornavold, 2004)

- Objective attributes: quantitative indicators of the financial situation, which include income, stage of the financial life cycle, marital status, number of children, and certain financial management behaviors (Porter & Garman, 1992)
- Overspending: a consumption to income ratio greater than 1.0 measured by the ratio of annual spending to annual income (Bae, Hanna, & Lindamood, 1993)
- Perceived attributes: value-related indicators of objective attributes, such as satisfaction with standard of living or satisfaction with savings and investments (Porter & Garman, 1992)
- Perceived economic (financial) well-being: a person's financial quality of life, perception of one's economic situation in light of what is required and desired (Hayhoe & Wilhelm, 1998)
- Perceived income adequacy: an individual's perception about the extent that income will meet financial demands (Danes & Rettig, 1993)
- Personal characteristics: the sum total of an individual's values, goals, and personal disposition, which reflect a global sense of well-being (Porter & Garman, 1992)
- Standards of comparison: aspirations, expectations, reference group levels, and past financial experiences (Porter & Garman, 1992)

- Total expenditures: The transaction costs, including excise and sales taxes, of goods and services acquired during a given time period, including gifts, and contributions and payments for pensions and personal insurance (U.S. Department of Labor, 2005)
- Urban: population at least 2,500 (U.S. Census Bureau, 1994)

## CHAPTER 2. REVIEW OF LITERATURE

The first section, on the financial condition of American households, will describe key objective indicators of financial well-being, income inequality, and overspending and debt, to describe the overall current financial context in the United States. A state specific perspective is provided by comparing the South Dakota economic climate and the United States, followed by a review of the demographic factors to consider when looking at indicators of financial well-being. Next, is a summary of current national financial education initiatives and personal finance graduation requirements and content standards in the state of South Dakota. Preferences and effectiveness of delivery methods of financial information are described, leading into the impact of financial education and knowledge on behavior and financial well-being. Finally, an analysis of objective and subjective measures of the construct of financial well-being, including conceptual models, provide a conceptual basis for the current research.

### Financial Condition of American Households

#### *Inequality*

In 1974 the richest 5% of American families earned 14.8% of total U.S. income, but by 1998 the richest 5% earned 20.7% of total U.S. income (Wolff, 2001). Many studies in recent decades have focused on inequality as a measure of well-being using only income (Johnson & Shipp, 1995). Johnson, Smeeding, and Torrey (2005) state this is partly because of history and partly because of habit. In the study by Johnson and Shipp (1995), and recently in other studies, consumption and income have been used as a measure of inequality. There are strengths and weaknesses of both income and consumption measures (Johnson, Smeeding, & Torrey, 2005). Johnson and Smeeding (1998) and Borooah and McGregor

(1992) suggested using income and consumption as measures of well-being. Alan Greenspan spoke at a symposium in 1998 and stated that there is a need to examine the distribution of wealth, the ability of households to consume and the distribution of consumption (Greenspan, 1998).

Johnson and Shipp (1995) found that inequality widened considerably during the 1980s and fell in the early 90s. They also found that most inequality is found within an income group rather than between income groups. This inequality first rose in the 1970s, grew even larger in the 80s, and fell slightly in the early 90s (Johnson & Shipp).

Using the U.S. Bureau of Labor Statistics Consumer Expenditure Survey, Krueger and Perri (2005) found that in the U.S., over the last 25 years, the increase in income inequality has not been matched by an increase in consumption inequality. Krueger and Perri also found that income inequality continued to rise at a slower rate in the 90s than the 80s. However, consumption inequality remained flat in the 90s (Krueger & Perri). Alan Greenspan (1998, ¶ 8) stated, “Using data from the Consumer Expenditure Survey that the U.S. Bureau of Labor Statistics conducts, researchers have found that inequality in *consumption*, when measured by current outlays, is less than inequality in income.”

Income and consumption inequality are measured using the Gini coefficient. It measures the extent that a society deviates from absolute equality. “The Gini coefficient is calculated by taking the differences between the incomes of every household (this would be  $n$  times  $(n-1)$  differences for a sample of  $n$  households), averaging them, and dividing by two times the average household income” (Hatcher, 2002, p. 395). It is a ratio between zero and one. A low Gini coefficient indicates more equal income distribution, while a high Gini coefficient indicates more unequal income distribution. When calculating income inequality,

0 would mean that everyone has an equal income and 1 would mean that one person has all of the income and everyone else has zero. The Gini index is simply a percentage found by taking the Gini coefficient multiplied by 100. According to the U.S. Census Bureau (2006), the Gini coefficient for income inequality was 0.396 in 1990, 0.421 in 1995, 0.433 in 2000, and 0.440 for 2005. The Gini index for 2007 was reported at 0.4689 (U.S. Census Bureau, 2007).

### *Spending*

It is known that debt has increased in recent years. In 1996, Jayathirtha and Fox found that over forty percent of households spent more than their take-home income, and the ratio of consumer debt to personal income was about 108 % in 2004 according to Weinberg (2006). The largest portion of this debt is mortgage, and in the 1990s, the median value of privately owned homes grew faster than median income (Weinberg).

In recent years, comments about American consumers and the financial condition of households today are about low savings rates and historically high rates of debt and bankruptcy (Weinberg, 2006). However, debt and savings represent an individual's preference for present versus future consumption (Baek & Hong, 2004). As Weinberg (p. 181) stated, "household financial decisions are driven not so much by how people feel about having a big savings account or being more in debt as they are by how people feel about having more consumption today versus more consumption in the future." Most people will save during higher income earning years and spend during their lower income earning years (Johnson, Smeeding & Torrey, 2005). Consumers prefer a smooth consumer path even though their incomes may vary over time (Weinberg). This reflects the life-cycle model that explains how consumption and income needs are unequal at various points in the life-cycle.

It also means that if a household expects their future income to grow, it will borrow against that income to even out consumption expenditures (Weinberg, 2006). Those who expect income to grow more quickly are willing to take on more debt (Weinberg). By evening out expenditures over time, households are trying to maintain a particular level of well-being. Garner, Stinson, and Shipp (1996, p. 1) discussed economic well-being in terms of affordability and income adequacy by saying, “While affordability generally can be defined as the ability to purchase some commodity or to achieve some particular level of living, income adequacy is likely to reflect one’s ability to meet some basic need or to reflect some belief about some basic income or other resource necessary to achieve a particular level of living.” But, at what cost are Americans achieving what they consider to be economic well-being?

According to DeVaney (2002, p. 272), “A person’s life-cycle stage is usually regarded as the most important predictor of consumption.” However, Bae, Hanna, and Lindamood (1993) found overspending to be common among U.S. households, but overspending does not seem to vary by age (Bae, Hanna, and Lindamood, 1993; Danziger, Van Der Gaag, Smolensky and Taussig, 1982-83), nor does overspending seem to be closely tied to stages in the life cycle (Bae, Hanna, and Lindamood). Bae, Hanna, and Lindamood did find low income to be the most important factor related to overspending. Bae, Hanna, and Lindamood (p. 25) concluded, “Predicted overspending increases with age for one person households and decreases with age for households with five or more people. Contrary to the predictions of the simple life-cycle model, there is no bivariate relationship between age and overspending.”

### **Financial Condition of South Dakota Households**

Differences in consumption and income can be found by location. According to the U.S. Census Bureau (2009), South Dakota's median household income was \$43,507 compared to \$50,740 nationally. The mean household income for the state was \$53,083 with a Gini coefficient of 0.4340 in 2007, while the mean household income for the United States was \$67,626 with a Gini coefficient of 0.4689 (U.S. Census Bureau, 2007). The percentage of people in poverty in 2006 was 13.6 for South Dakota and 13.3 nationally. The percentages were 13.1 for South Dakota and 13.0 nationally in 2007 (Bishaw & Semega, 2008).

Though the percent of people in poverty in South Dakota is slightly higher than the United States, some of the most impoverished counties in the country are located in the state. In 2007, the county with the highest percentage of poverty in the United States was Ziebach County, SD at 55.9%, and the second highest was Buffalo County, SD at 50.3% (U.S. Census Bureau, Small Area Estimates Branch, 2008). Shannon County, SD was fourth at 47.4% and Todd County, SD was seventh at 42.8% (U.S. Census Bureau, Small Area Estimates Branch, 2008).

However, South Dakota's economy appears to have remained fairly stable over the past few years. In respect to the overall economic condition, South Dakota's Gross Domestic Product (GDP) by State increased 6% from 2006 to 2007, which was the 11th highest increase nationally (South Dakota Economy, 2008). Jobs continue to increase in 2008, and the S.D. unemployment rate was the lowest in the nation in August, 2008 at 3.3% versus 6.1% nationally (South Dakota Economy, 2008). The state's personal income grew 1.9% between the first and second quarters of 2008, which was the 18th highest increase nationally

(South Dakota Economy, 2008). However, there were 582 less family housing unit building permits from September 2007 through August 2008 than the prior 12 months (South Dakota Economy, 2008).

Of the 2007 estimated total South Dakota population of 796,214, 434,812 are rural and 361,402 are urban (U.S. Department of Agriculture, 2008). There were 357,240 total housing units, and, of these, 215,457 were owner occupied with a median value of \$110, 900 (U.S. Census Bureau, 2009; U.S. Census Bureau, 2008). The latest poverty rate estimate for South Dakota was at 13.2% in 2007 (U.S. Department of Agriculture). The total consumer unit income before taxes for 2007 was \$59,389 in the Midwest region, and average annual expenditures were \$48,014 (U.S. Department of Labor, 2007). For a complete comparison of South Dakota households versus U.S. households see Appendix A.

### **Demographic Indicators of Financial Well-being**

Since South Dakota has a 45% rural population, rural/urban location is one of the demographic factors to consider as an indicator of financial well-being. When looking at regional location, those in the Midwest were less likely to overspend than those in the South (Jayathirtha & Fox, 1996). Also, urban home owners were more likely to overspend than rural home owners (Jayathirtha & Fox). Recent findings, using income and net worth as a measure, found farm households have higher economic well-being, on average, than non-farm households (Katchova, 2008). However, Miller and Rowley (2002) reported that poverty rates are higher in rural counties, and the income gap between rural and urban locations in the United States is widening.

Sumarwan and Hira (1993) and Bae, Hanna, and Lindamood (1993) reported that income is significantly related to financial satisfaction, but Bae, Hanna, and Lindamood also



concluded that financial satisfaction is not determined by income alone. The financial condition of Americans can also be influenced by other objective factors. Looking at objective attributes as predictors of financial well-being, quantitative indicators of the financial situation, which include income, stage of the financial life cycle, marital status, number of children, and certain financial management behaviors, Porter and Garman (1993) did not find any individual variables to be significant. However, they did find that objective measures, when grouped together, significantly explained variance in perceived financial well-being (Porter & Garman, 1993). Previous research indicates some factors that may be of significance include: gender, age, marital status, level of education completed, race ethnicity, housing tenure, number of children in the home, employment status, rural or urban location, and household income.

When looking at gender, a study by Hayhoe and Wilhelm (1998) concluded that the influence of latent variables on economic well-being, perceived economic well-being, comparisons of economic outcomes, level of strain, individual objective information, family objective information, socioeconomic status, individual characteristics, family characteristics, and provider role characteristics, was different for husbands and wives. A year later, a similar conclusion was found among college students. Leach, Hayhoe, and Turner (1999) determined that influences on economic well-being were perceived differently by college men and women, and models of perceived economic well-being may differ by gender.

As noted earlier, overspending does not seem to vary by age (Bae, Hanna, and Lindamood, 1993; Danziger, Van Der Gaag, Smolensky and Taussig, 1982-83), nor does overspending seem to be closely tied to stages in the life cycle (Bae, Hanna, and

Lindamood). However, when looking specifically at rural households and a person's satisfaction with their financial status, age was reported to be significantly related (Sumarwan and Hira, 1993). Comparing these studies, the direct measure of consumption to income may not vary by age, but the perception of financial satisfaction may.

In general, economic well-being has been found to have a stronger association with marriage than with cohabitation (Clarkberg, 1999). The recent study by Caputo (2008) looking at individuals and pre-declared bankruptcy levels of economic well-being found, "never married persons are the least likely to have ever declared bankruptcy and divorced persons are the most likely" (p. 18).

Controlling for income and other variables, overspending is more likely among college-educated consumers than less educated consumers (Bae, Hanna, and Lindamood, 1993). This may suggest that higher education levels are correlated with overspending. This association was also found when looking at overspending of home owners and renters (Jayathirtha & Fox, 1996). Individuals with higher education levels, both renters and home owners, were more likely to overspend than those with less than a high school education (Jayathirtha & Fox).

With respect to race and ethnicity, controlling for income, Bae, Hanna, and Lindamood (1993) found no difference in overspending between racial and ethnic groups. Looking at race and ethnicity in relation to expenditures and home ownership, Jayathirtha and Fox (1996) state Black non-Hispanic homeowners were half as likely to overspend than White non-Hispanic homeowners, but a significant difference in overspending was not found between Black non-Hispanic renters and White non-Hispanic renters. Later research has found racial difference in wealth ownership, an indicator of financial well-being (Keister,

2000). “Racial differences in wealth ownership are particularly acute and have been relatively persistent in recent decades (Keister, 2000, p. 500).” While there may not be a difference in overspending, there may be a difference in perceived financial well-being.

Controlling for other variables, Jayathirtha and Fox (1996) found that homeowners with mortgages are significantly more likely to overspend than the combined group of homeowners without mortgages and renters, but overspending was most prevalent among renters in all demographic categories. The study concluded that demographic factors have a different effect on overspending among renters versus homeowners (Jayathirtha & Fox).

For renters and home owners alike, larger households and those with children were more likely to overspend (Jayathirtha & Fox, 1996). Bae, Hanna, and Lindamood (1993) had similar results finding that the probability of overspending did increase with household size at the mean income level. However, they found this only up to a household size of four persons, noticing a decrease in the probability of overspending for households of five or more (Bae, Hanna, and Lindamood).

The research on housing tenure by Jayathirtha and Fox (1996) found that the self-employed were more likely to overspend than the employed. Retirement status also affects finances:

“Non-retirees were more likely than otherwise similar retirees to report worrying about finances. A higher proportion of non-retirees reported dissatisfaction with various aspects of their financial situation. However, non-retirees were more likely to perceive themselves as financially better off in comparison to others, or in relation to the past, than the retired respondents. Non-retirees were more optimistic about their future financial situation” (Hira & Mugenda, 1998, p. 75).

Loibl and Hira (2005) studied the effect of self-directed, employer-provided financial information on financial satisfaction and found that smaller household size, older age, employment in the field, being male, white and married contributed to financial satisfaction. They concluded that the socio-demographic situation of an individual may influence financial satisfaction (Loibl & Hira).

## **Financial Education**

### ***Financial Literacy Programs***

Lack of formal education alone does not appear to be a major cause of overspending in the United States. Individuals with higher education levels may be more likely to overspend. In the research by Bae, Hanna, and Lindamood (1993) they found that “It is possible that some households would avoid overspending if they followed recommended financial practices. However, the fact that more educated consumers were more likely to overspend than similar less educated consumers makes it unlikely that simple ignorance is a major cause of overspending” (Bae, Hanna, and Lindamood, 1993, p. 26).

Other research has given insight into what the recommended financial practices should be. Baek and Hong (2004) concluded that education should focus on budgeting, developing appropriate spending patterns, goal setting to manage future finances and debt, and consequences of defaulting on debt.

Weinberg (2006, p. 192) sums up what financial education should be for consumers today:

“The goal, presumably, is for a household to be able to make informed, forward-looking choices with regard to the use of credit instruments. But being able to fully calculate the expected present value of different options may be beyond the reach of

many consumers....Perhaps one realistic goal of financial education is for borrowers to appreciate that if one credit alternative has a lower initial monthly payment than another, then it is probably more costly on another dimension. Borrowers who can understand such trade-offs are less likely to make choices that have a high chance of negative outcomes.”

Financial literacy programs are in place all across the country. Vitt et al. (2001) sampled over 150 internet sites and 90 programs including: “(1) 18 workplace financial education programs; (2) 24 Cooperative Extension Service (CES) programs; (3) four U.S. Military programs the U.S. Army, U.S. Air Force, the U.S. Marine Corps and the U.S. Navy; (4) eight faith-based programs; (5) seven community college programs; (6) 29 community programs” (Vitt et. al., 2001, p. xiii).

Congress established the Financial Literacy and Education Commission in 2003, and in 2006, *The National Strategy for Financial Literacy* was released. It detected four areas of critical importance: building public awareness of available resources; developing tailored, targeted materials and dissemination strategies; tapping into public-private and private-private partnerships; and research and evaluation of financial education programs (Financial Literacy and Education Commission, 2006). The strategy also identified various financial education programs in non-profit, academic, government, and private sectors along with opportunities for improvement in each area (Financial Literacy and Education Commission).

President George W. Bush created the President’s Advisory Council on Financial Literacy on January 22, 2008. Very recently, the council released the *2008 Annual Report to the President*, which included recommendations for 2009. The 15 recommendations were grouped into the following propositions: expand and improve financial education for students

from kindergarten through post-secondary education; support the increasingly important role of employers as providers and conduits of financial education to their employees; increase access to financial services for the millions of unbanked and underserved Americans; identify and promote a standardized set of skills and behaviors that a financial education program should teach an individual; and promote more awareness among Americans of the state of financial literacy generally and of their own financial literacy, and dedicate more resources toward educating Americans how to improve on the results (President's Advisory Council on Financial Literacy, 2009).

“Some experts believe that one of the best ways to promote a financially literate society is by integrating financial education into the K-12 curriculum, so people learn early about the importance of budgeting, investing, banking, insurance and debt management” (Grossman, 2008, p. 1). Early research on the impact of high school financial curriculum mandates indicates that mandates do significantly increase exposure to financial education and could increase savings rates and wealth accumulation (Bernheim, Garrett, & Maki, 2001).

According to the National Council on Economic Education, 40 states include personal finance in their education standards, nine conduct testing in the subject area, and seven include financial education as a graduation requirement (Grossman, 2008). Legislation has been passed in recent years in the states of Michigan, Ohio and South Dakota, requiring students to complete economics or personal finance courses (Grossman).

Effective July 1, 2006, all students must complete 0.5 unit of economics or personal finance in accordance with the South Dakota High School Graduation Requirements developed by the state Board of Education in response to legislation (HB 1001) passed in

2004 and adopted by the state Board of Education in January, 2005 (South Dakota Department of Education, 2005; Grossman, 2008). Students graduating in spring 2010 will be the first students affected by the economics or personal finance requirement. The rationale behind this requirement was to reverse national negative trends in this area (South Dakota Board of Education, 2004). However, state trends were not documented as a motivation. This may be because data on South Dakota financial well-being and sources of financial education are lacking.

Personal finance content standards are currently being implemented and include: identify various forms of income and analyze factors that affect income, explain the processes involved in managing your personal finances, use a rational decision-making process as it applies to informed decisions on spending and credit, and evaluate savings and investment options to meet short- and long-term goals (South Dakota Department of Education, 2009). The effectiveness of this requirement is not known since the first group of students has yet to graduate.

### ***Delivery Methods***

As previously mentioned, financial literacy programs are available in both formal and informal education settings. More than half a century ago, Knowles (1950) wrote a book on the importance of informal adult education. In Europe, “Lifelong learning has been emphasised as a major policy that enables economic competitiveness, employability, individual fulfilment and self-development” (Colardyn & Bjornavold, 2004, p. 69). “Gradually, validation of non-formal and informal learning is becoming a key aspect of lifelong learning policies” (Colardyn & Bjornavold, 2004, p. 69).

Therefore, understanding the most effective delivery methods of financial information and sources of financial education is crucial.

“In recent years, numerous programs and initiatives have been developed to promote and provide financial education to U.S. consumers. Unfortunately, while the number of programs and initiatives has flourished, research measuring the effectiveness of these efforts has not kept pace. In fact, little is still known about whether these efforts are actually improving consumers’ overall financial well-being.” (Lyons, Palmer, Jayaratne, & Scherpf, 2006, p. 208)

The National Endowment for Financial Education (NEFE) has produced a Financial Education Evaluation Toolkit (Jayaratne, Lyons, & Palmer, n.d.) and identified key components of every financial education program. It states that financial education is very similar to other educational programs, and takes place in formal, non-formal, and informal educational settings (Jayaratne, Lyons, & Palmer).

Though research on the effectiveness of delivery methods of financial information is limited, literature on the diffusion of information is vast in the area of cooperative extension. The North Carolina Cooperative Extension Service provides in depth information on program delivery methods and delivery systems, which are the selection of delivery methods for a program. “The selection of delivery methods for a program delivery system should be based on the needs and preferences of the targeted audience and the specific educational purpose” (Richardson, Jenkins, & Crickenberger, n.d., p. 1).

Richardson (1993) reviewed numerous studies looking at clientele preferences and effectiveness of individual methods in delivering extension information. “Through these studies, it is clear that clientele preferences do exist, and it is likely that no single delivery



method is suitable for everyone” (Richardson, 1993, p. 3). Mass media methods were seldom identified as valuable in receiving specific information (Richardson). High technology delivery methods were of interest to the rural audience, and subjects preferred personalized interactive methods (Richardson). The strongest response was that clientele prefer sources providing specific information that was subject and audience specific (Richardson). Relevance of the subject and availability were important factors regardless of delivery method (Richardson).

Though current financial research is focusing on financial literacy and education, more research is emerging in regards to the impact of financial education and financial knowledge on behavior and the construct of financial well-being.

### ***Impact on Behavior***

Courchane and Zorn (2005) found a significantly positive association between financial knowledge and presence of financial education, in their preliminary findings. Hogarth and Hilgert (2002) found that a greater proportion of financially knowledgeable consumers had experience with financial products or services than those with less financial knowledge. Also, when consumers were asked about their learning experiences from different sources of financial information, personal experience was the most important source of learning, friends and family were second, and media followed (Hogarth & Hilgert).

In a study by Hilgert, Hogarth, and Beverly (2003), people preferred to learn from sources that were “on demand” and available when their time allowed. The top three preferred sources to get future financial information were media, brochures, and home videos, whereas internet, courses, and seminars were preferred less (Hilgert, Hogarth, & Beverly).

A literature review on the effectiveness of financial education by Martin (2007) concluded that many approaches to financial education are effective. More specifically, Martin (2007) determined, among other things, that: more mistakes regarding personal finance decisions are made by less educated and low income households; there is a positive connection between knowledge and personal finance behaviors; low-income, less educated, minorities, single parents, and females benefit most from financial education; financial education is most effective when it covers specific topics tailored to individual needs and is delivered face-to-face; and increased financial knowledge can also create worse outcomes.

In studying the impact of financial education on low-income populations, Lyons, Chang, and Scherpf (2006) suggest that programs should focus on behaviors that can be changed in the short run that are currently relevant to the target audience. “We suggest that differences in people's access to resources and institutions may affect young people's ability to absorb and act on knowledge and skills learned in financial education classes” (Johnson & Sherraden, 2007, p.125).

Hathaway and Khatiwada (2008) did not find conclusive evidence that financial education programs lead to increased financial knowledge and improved financial behavior. However, they too found that programs targeted to a specific audience tend to change financial behavior, and formal program evaluations, although currently lacking, are critical in measuring the impact of financial education (Hathaway & Khatiwada).

Lyons, Palmer, Jayaratne, and Scherpf (2006) pointed to the importance of evaluation in financial education programs as well. They identified deficiencies in “...lack of evaluation capacity, failure to integrate the evaluation into program design, and lack of an industry standard for program evaluation” (Lyons, et al., 2006, p. 230). There is also a lack

of evaluation on South Dakota financial education programs, and effectiveness studies are needed.

Though evidence is contradictory linking financial education to financial well-being, research has suggested ways to measure financial well-being.

### **Measuring Financial Well-being**

#### ***Objective Measures***

Many measures have been used to quantify financial well-being, and it is debatable what the most appropriate measure is. Objective measures such as annual household income, household consumption, and the ratio of the two are often used. Johnson and Smeeding (1998), Greenspan (1998), and Borooah and McGregor (1992) suggested examining income and consumption to measure financial well-being. Other studies measure well-being using only income (Johnson & Shipp, 1995).

Objective measures, income and consumption, are readily available. Prawitz et al. (2006) comment that objective indicators may be easier to measure because they are straightforward and easier to access. However, when objective measures of financial well-being are used and subjective measures are excluded, an individual's feelings and attitudes about their financial situation are not considered. The objective measurements do not shed light on the individual's psychological well-being, satisfaction, or stress associated with the financial condition. Hira and Mugenda (1998) advise against overlooking subjective factors and concentrating on objective factors alone. Prawitz et al. (2006, p. 35) state, "One can argue that objective measures of the financial condition are less useful in assessing the need for appropriate intervention."

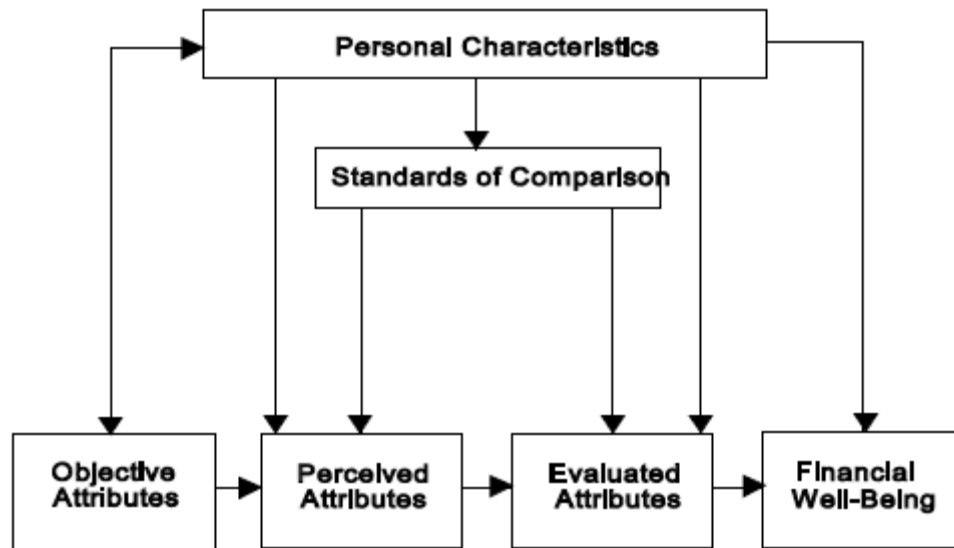
Furthermore, when using only income to measure financial well-being, perceived income adequacy is not taken into account. Danes and Rettig (1993) explain that income adequacy is an individual's perception about the extent that income will meet financial demands, and that it varies between individuals. Individuals with the same income will perceive varying levels of income adequacy depending on the standard of living they hope to achieve. Mullis (1992) concluded that, "...it is not only objective circumstances that influence psychological well-being but also some internal subjective assessment about control over those circumstances that seem to be very important" (p. 132).

### ***Subjective Measures & Conceptual Models***

Various conceptual models of financial well-being have been developed over the last couple decades. Concepts that make up the construct of financial well-being have been studied by numerous researchers. At least 58 concepts have been identified by various studies on financial well-being (see p. 39 of Prawitz et al., 2006 for a list of studies). Systems theory is one construct researchers have used (Prawitz et al., 2006). However, perceived financial well being is a multi-dimensional construct (Prawitz et al.).

Porter's Conceptual Model of Financial Well-Being, as seen in Figure 2.1, was first introduced by Porter and Garman (1992). The Porter model, presented by Porter and Garman, focuses on the financial domain. The financial domain is one of twelve domains originally identified by Campbell, Converse, and Rodgers (1976) that affect an individual's satisfaction with quality of life. The Campbell, Converse, and Rodgers studies suggested that objective attributes affect perceptions of domain attributes that in turn reflect upon one's satisfaction in that domain. The more recent Porter model includes objective, subjective, and reference point measures of financial well-being (Porter & Garman, 1992).

Figure 2.1. The Porter Conceptual Model of Financial Well-Being



Note. From Porter & Garman, 1993

*Objective attributes*, defined as quantitative indicators of the financial situation, include income, stage of the financial life cycle, marital status, number of children, and certain financial management behaviors (Porter & Garman, 1992). *Perceived attributes* are value-related indicators of objective attributes, and *evaluated attributes* are an individual's assessment of financial attributes when compared to *standards of comparison* such as aspirations, past financial experiences, peer financial reference groups, and future financial expectations (Porter & Garman, 1992). An individual's personal characteristics, values, goals, and disposition, represent an overall outlook on life and affect all attributes of financial well-being, objective, perceived, and evaluated (Porter & Garman, 1992).

An empirical test of the Porter Conceptual Model of Financial Well-being found greater variance in the measure of financial well-being than previous studies (Porter &

Garman, 1993). They found that all four of the attributes, objective, perceived, evaluated, and personal characteristics, significantly explain the variance in financial well-being (Porter & Garman, 1993). It was suggested that this model be used as the conceptual framework to measure financial well-being.

Research by Hayhoe and Wilhelm (1998) introduced a model that looked at the relationship between information variables and perceived economic well-being and two mediators, comparison of economic outcomes and level of strain. Specifically, gender differences of mediator values were studied by using three variables: mediator variables, information (objective) variables, and perceptual variables (Hayhoe & Wilhelm). It was found that the mediator variables, comparison of economic outcomes and level of strain, are mediators of the objective and perceptual variables, and the influence of latent variables, perceived economic well-being, comparisons of economic outcomes, level of strain, individual objective information, family objective information, socioeconomic status, individual characteristics, family characteristics, and provider role characteristics were different for husbands and wives (Hayhoe & Wilhelm).

Hira and Mugenda (1998) looked at differences between retirees' and non-retirees' satisfaction with six aspects of the financial situation including regular monetary savings, current debt level, family's current financial situation, ability to meet long-term financial goals, ability to meet financial emergencies, and money management skills. More retirees were satisfied with their current financial situation despite reported lower income concluding that income is not linearly related to financial satisfaction (Hira & Mugenda). A correlation between self-image and financial satisfaction was also found, and Hira and Mugenda advise against overlooking subjective factors and concentrating on objective factors.

Leach, Hayhoe, and Turner (1999) continued this research by looking at the factors affecting the perceived economic well-being of college students. For this study, objective variables were grouped into individual demographics, student demographics, and socioeconomic status; perceptual variables were grouped by money attitudes, credit attitudes, and money issues; and the mediator variables were level of financial strain and comparison of economic outcomes (Leach Hayhoe, & Turner). Results indicated a difference between college men and women in perception of influences on economic well-being, suggesting a gender difference in models of perceived economic well-being (Leach Hayhoe, & Turner).

Francoeur (2002) hypothesized that female and older patients would report lower subjective financial strain when objective family financial stress is high, but statistical significance of the interaction effects of gender was not found. The model tested was the Multiple Indicators-Multiple Causes (MIMIC) model of accommodation with increasing age. Accommodations in perceptions about difficulties paying bills may increase with age, regardless of the level of objective family financial stress (Francoeur).

Prawitz et al. (2006), over a period of several years, using six separate data sets, developed a scale that measures the latent construct of financial well-being. Previous conceptual models and concepts of well-being and financial well-being were examined (Prawitz et al.). The study began with 58 concepts, representing “. . . a salient life experience, behavior, concern, perception, or personal judgment regarding the common personal finance topics of money, credit, and economic resources,” used to identify and measure the financial well-being construct selected by review of the literature and input from professors and experts (Prawitz et al., p. 39). Using four selection criteria, the conceptual framework was narrowed to 20 concepts, and a three-phase, qualitative Delphi study

followed to reduce the list of concepts to 10 (Prawitz et al.). These 10 items were compared to 45 concepts identified by a panel study and were reduced to six items to be included in the Beta version of the survey instrument (Prawitz et al.). Fifty-one items were tested for reliability and validity, 10 identified by experts, 10 representing demographic characteristics, and 31 from previous research (Prawitz et al.). The final *InCharge Financial Distress/Financial Well-Being (IFDFW) Scale* consists of eight items, four representing a sense of one's present state of financial well-being and four representing one's reaction to his or her present state of financial well-being (Prawitz et al.).

### **Deficiencies in the Evidence**

National and state-specific data on objective indicators of financial well-being, such as income and consumption, are readily available through the Consumer Expenditure Survey. Though objective indicators of financial well-being may be easier to access, it has been suggested that subjective measures should be included when looking at financial well-being. Research using the perceived measure of financial well-being has looked at financial satisfaction of retirees versus non-retirees (Hira & Mugenda, 1998), perceived economic well-being of college students by gender (Leach, Hayhoe, & Turner, 1999), gender and economic well-being in the family setting (Hayhoe & Wilhelm, 1998), and age-related changes in financial strain (Francoeur, 2002).

As previously mentioned, the conceptual model tested in Porter and Garman (1993) includes objective attributes, perceived attributes, evaluated attributes, and personal characteristics contributing to financial well-being. The Prawitz et al. (2006) research developed a reliable and valid instrument by which to measure the construct of financial distress/financial well-being. Although perceived attributes have been determined to be a



significant measure of the financial well-being domain, and a reliable instrument has been developed to measure financial well-being, investigation into the relationship between demographic factors and sources of financial education and perceived financial well-being is needed.

Prawitz et al. (2006) have also reported on the subjective measures of mean financial well-being for the general population of adults in the United States. However, research measuring the financial well-being in the state of South Dakota is lacking.

### **Summary**

The income inequality in the United States is increasing and consumers continue to spend more than their income. South Dakota is similar to the United States in many areas of the economic climate including the Gini coefficient, but the mean household income and percent of population living in poverty is lower.

National and South Dakota specific financial education initiatives are underway. However, state specific rationale for the personal finance curriculum and graduation requirements is lacking. Studies have found that individuals do prefer varying sources of financial information, and more research is needed on the effectiveness of these sources. Demographic indicators of financial well-being have been discussed, as well as measures and concepts of the construct. Porter's Conceptual Model of Financial Well-Being has been accepted as a conceptual framework, and an instrument has been developed to measure perceived financial well-being.

Porter's Conceptual Model of Financial Well-Being included demographic factors and financial management behaviors but delivery methods or sources of financial education were not included in the model. The model will be adapted to include delivery methods of

financial information and sources of financial education. The rationale behind this is that previous financial education may be considered a financial experience, and thus financial education as an indicator of perceived financial well-being should be tested. Further research on the relationship between demographic factors and sources of financial education and perceived financial well-being is needed.

## **CHAPTER 3. METHODS AND PROCEDURES**

### **Problem Statement**

As stated previously, the perceived financial well-being of adults in South Dakota is unknown. Research indicates that objective measures, such as consumption to income, may vary by demographic factors and that objective attributes, personal attributes, evaluated attributes, personal characteristics, and standards of comparison are all an important part of the subjective measures of financial well-being. Investigation into the relationship between perceived financial well-being and demographic factors is needed, and it is unknown if subjective measures of financial well-being are associated with delivery methods of financial information or informal or formal sources of financial education.

### **Research Questions and Hypotheses**

Again, this research intends to identify factors that are related to the perceived financial well-being of adults in South Dakota, specifically delivery methods of financial information and sources of financial education, to determine if these factors are associated with perceived financial well-being. Six research questions were identified.

1. What is the perceived financial well-being of adults in South Dakota?
2. What demographic variables are related to perceived financial well-being?
3. What delivery methods of financial information are related to perceived financial well-being?
4. Is there a difference in perceived financial well-being between: individuals with informal financial education and individuals without informal financial education, individuals with formal financial education and individuals without formal financial

education, and individuals with informal financial education and individuals with formal financial education?

5. What sources of formal financial education are related to perceived financial well-being?

6. What sources of informal financial education are related to perceived financial well-being?

The following seven hypothesis statements have been derived from the research questions, the review of literature, and the Porter Conceptual Model of Financial Well-being.

H<sub>1</sub>: There is a relationship between demographic variables and perceived financial well-being.

H<sub>2</sub>: There is a relationship between delivery methods of financial information and perceived financial well-being.

H<sub>3</sub>: There is a significant difference in perceived financial well-being between individuals with informal financial education and individuals without informal financial education.

H<sub>4</sub>: There is a significant difference in perceived financial well-being between individuals with formal financial education and individuals without formal financial education.

H<sub>5</sub>: There is a significant difference in perceived financial well-being between individuals with informal financial education and individuals with formal financial education.

H<sub>6</sub>: There is a relationship between sources of informal financial education and perceived financial well-being.

H<sub>7</sub>: There is a relationship between sources of formal financial education and perceived financial well-being.

### **Subjects**

Subjects consisted of the individuals identified by a random sample of the general adult population in South Dakota acquired through a professional survey sampling company, InfoUSA. The random sample included adults that are: age 18+, male and female, employed and unemployed, retired and non-retired, urban and rural, single/never married, widowed, divorced, and married/living with a partner, home owners and renters, with and without dependent children, of varying education levels, of varying race and ethnicity, and of varying income levels. Of the 3,000 individuals surveyed, 814 subjects returned a completed questionnaire, comprising the total sample (n=814). After adjusting for 16 surveys returned undeliverable and 37 deceased, reported by phone or note on the returned survey, a total return rate of 27.62 percent resulted.

### **Instrument**

To measure perceived financial well-being, the *Personal Financial Wellness Scale* (PFW scale, also known as the *InCharge Financial Distress/Financial Well-Being Scale*) was administered (Appendix B, Section 2). Permission to use this scale was received from E. Thomas Garman (Appendix C). “Compare scale scores against the InCharge norms for the general population, employed population, and financially distressed population” and “Determine the financial education needs of individuals and groups” are listed as potential uses of the PFW response framework (Garman, 2006, p.2). The scale “is a self-report

measure of the attributes of perceived financial distress/financial wellness” (Garman, p.1). The eight-question scale includes four items concerning an individual’s present state of financial well-being and four items concerning an individual’s reaction to his/her present state of financial well-being (Prawitz et al., 2006).

Norming studies of the PFW scale questions have been conducted using nationally representative samples of adults in the United States (Garman, 2006). The national data on the general population and the financially distressed was tested for validity and reliability using the criteria of: face validity, content validity, concurrent criterion validity, predictive criterion validity, convergent construct validity, discriminant construct validity, and reliability (internal consistency) (Prawitz et al., 2006). A factor analysis was conducted using the national sample and the PFW scale was found to measure perceived financial distress/financial well-being as a single factor that explains 78.9% of the variance (Prawitz et al.). The internal consistency/reliability of the national sample was acceptable with a robust Cronbach’s alpha of 0.956 (Prawitz et al.), the items consistently measured financial distress/financial well-being. For the current study, a standardized Cronbach’s alpha of 0.954 (n=744) was found, and a factor analysis measured perceived financial distress/financial well-being as a single factor that explains 75.745% of the variance.

A ten point scale was used for each of the eight un-weighted items (Prawitz et al., 2006). The points for each item were added together, and the total was divided by 8 to calculate the final score (Prawitz et al.). A score can range from 1 to 10 with 1 equaling overwhelming financial distress/lowest financial well-being and 10 equaling no financial distress/highest financial well-being (Prawitz et al.). The national norms for financial distress/financial well-being were found and have a mean score of 5.7 (SD = 2.4) (Prawitz et

al.). Table 3.1, taken from Prawitz et al., represents the descriptive terminology used for interpreting the scores.

Table 3.1

*Normative Descriptive Terminology for Interpreting IFDFW Scores*

Score	Descriptive terminology
1.0	Overwhelming financial distress/lowest financial well-being
2.0	Extremely high financial distress/extremely low financial well-being
3.0	Very high financial distress/very poor financial well-being
4.0	High financial distress/poor financial well-being
5.0	Average financial distress/average financial well-being
6.0	Moderate financial distress/moderate financial well-being
7.0	Low financial distress/good financial well-being
8.0	Very low financial distress/very good financial well-being
9.0	Extremely low financial distress/extremely high financial well-being
10.0	No financial distress/highest financial well-being

*Note.* From “InCharge financial distress/financial well-being scale: Development, administration, and score interpretation,” by A. D. Prawitz, E. T. Garman, B. Sorhaindo, B. O’Neill, J. Kim, and P. Drentea, 2006), *Financial Counseling and Planning*, 17(1), p. 45.

The demographics section of the survey contained eleven questions pertaining to: gender, age, marital status, level of education completed, race, ethnicity, housing tenure,

number of children in the home, employment status, rural or urban location, and household income (Appendix B, Section 3).

The final part of the survey consisted of three questions related to financial education (Appendix B, Section 4). The first question asked respondents to rank their top three delivery methods of financial information by placing the numbers 1 through 3 in the space provided, 1 being the most used source, for magazines, books, civic/religious leader, newspapers, internet, television, radio, friends or relatives, or other. Question two asked if the individual has had any informal financial education. If yes, the individual was asked to rank their top three sources of informal financial education by placing the numbers 1 through 3 in the space provided, 1 being the most influential source, for employer, financial institution or financial planner, cooperative extension, faith-based group, community based organization, or other. The third question asked if the individual has had any formal financial education. If yes, the individual was asked to rank their top three sources of formal financial education by placing the numbers 1 through 3 in the space provided, 1 being the most influential source, for high school, community college, associate program, bachelor's program, graduate program, or other.

The survey was sent as part of a joint data collection effort, and, therefore, sections one and five of the survey are not part of this study.

### **Procedures**

Appropriate forms for conducting research with human subjects were completed and approved by the Iowa State University Institutional Review Board (IRB) and the South Dakota State University Research Compliance Coordinator. The survey was first administered to a sample group (n=20) to test for time and function. The survey was then



mailed to the random sample of 3,000 South Dakotans in November, 2008. One week prior to distributing the survey, a prenotice postcard (Appendix D) was sent to the sample participants explaining the research being conducted, informing them that they would be receiving the questionnaire by mail, and urging them to assist in the research effort by completing the questionnaire. The questionnaire (Appendix B), cover letter (Appendix E), explaining the purpose of this study, and return envelope (Appendix D) were sent to sample participants by United States Postal Service standard mail one week after the postcard. Participants were asked to complete the survey by answering all items to the best of their ability and return the survey by placing it in the provided addressed/stamped envelope by United States Postal Service standard mail, within two weeks. A reminder postcard (Appendix D) was sent to the sample participants two weeks following the questionnaire, reminding them to complete and return the questionnaire or asking them to contact the principal investigator if they would like another questionnaire sent to them.

Participation in this project was voluntary, and subjects had the right to withdraw at any time. There were no known risks to participation in this study. There were no direct benefits or compensation to the participants. Consent to participate was implied by the completion and return of the questionnaire. Participants were asked not to use a return address or any other identifying information when returning the survey to ensure confidentiality. IRB forms were completed with a detailed description of the research to be conducted before any data collection began. Any questions about participation were directed to the Principal Investigator or Chairperson of the Human Subject Committee at South Dakota State University.

## Measures

The latent construct of perceived financial well-being was measured using PFW scale scores. The PFW scale scores were calculated for all individuals, and the PFW mean and standard deviation were calculated for the general population of adults in South Dakota. The perceived financial well-being final score was used as the dependent variable in all analysis. For the purpose of reporting descriptive information on this factor the following cutoffs were applied: 1 included 1.00 through 1.49, 2 included 1.50 through 2.49, 3 included 2.50 through 3.49, 4 included 3.50 through 4.49, 5 included 4.50 through 5.49, 6 included 5.50 through 6.49, 7 included 6.50 through 7.49, 8 included 7.50 through 8.49, 9 included 8.50 through 9.49 and 10 included 9.50 through 10.00.

Descriptive statistics were calculated for all independent variables including: demographic factors, delivery methods of financial information, sources of informal financial education, sources of formal financial education, and formal or informal financial education.

### *Gender*

Gender was coded as (1) male and (2) female.

### *Age*

This survey items asked, “What is your current age?” Age as a scale variable was then coded into a nominal variable with eight categories: (1) 20-29, (2) 30-39, (3) 40-49, (4) 50-59, (5) 60-69, (6) 70-79, (7) 80-89, and (8) 90-99. No respondents were under 20 years of age or over 99 years of age.

### *Marital Status*

The marital status variable contained five categories: (1) never married, (2) living with partner, (3) widowed, (4) divorced/separated, and (5) married.

### ***Education***

The question measuring education was, “What is the highest level of education you have completed?” Eight categories were used: (1) elementary (1-8), (2) high school/GED, (3) associate degree, (4) some college, (5) bachelor’s degree, (6) master’s/professional degree, (7) doctorate degree, and (8) other.

### ***Race***

Respondents were asked to select the racial category or categories with which they most closely identify and check as many as apply. There were initially six categories (1) American Indian or Alaska Native, (2) Asian, (3) Black or African American, (4) Native Hawaiian or Pacific Islander, (5) White, and (6) other. Four more categories were then added: (7) American Indian or Alaska Native and White, (8) Native Hawaiian or Pacific Islander and White, (9) Asian, White, and Black or African American, and (10) American Indian or Alaska Native, Asian, and White.

### ***Ethnicity***

Two categories were included in the factor for ethnicity (1) Hispanic or Latino (of any race) and (2) not Hispanic or Latino.

### ***Housing Tenure***

The survey asked, “Is this house, apartment, or mobile home”: (1) owned by you or someone in this household with a mortgage or loan, (2) owned by you or someone in this household free and clear without a mortgage or loan, (3) rented, or (4) occupied without payment of rent.

### ***Children in the Home***

The factor measuring how many dependent children currently live in the home contained seven categories: (0) 0, (1) 1, (2) 2, (3) 3, (4) 4, (5) 5, and (6) 6+.

### ***Employment Status***

Current employment status was assessed using five categories: (1) unemployed, (2) self-employed, (3) employed, (4) retired, and (5) other. After cleaning the data, a sixth category, (6) disabled, was added because a number of respondents wrote in disabled, handicapped, or SSD (Social Security Disability).

### ***Rural or Urban Location***

The survey questioned where the respondent was currently living in regard to rural or urban setting, and the two categories were defined as (1) rural area (less than 2,500 persons) or (2) urban area (2,500 persons or more).

### ***Income***

Eleven categories were used to measure income. A nominal variable was chosen over a scale variable because it is believed that respondents may find it easier to choose a range of income rather than fill in a dollar amount. The categories were: (1) less than \$10,000, (2) \$10,000 to \$19,999, (3) \$20,000 to \$29,999, (4) \$30,000 to \$39,999, (5) \$40,000 to \$49,999, (6) \$50,000 to \$59,999, (7) \$60,000 to \$69,999, (8) \$70,000 to \$79,999, (9) \$80,000 to \$89,999, (10) \$90,000 to \$99,999, and (11) \$100,000+.

### ***Delivery Methods of Financial Information***

To assess delivery methods of financial information, the question was asked, “Please rank your top three delivery methods of financial information by placing the numbers 1 through 3 in the space provided, 1 being the most used source”. Nine original categories

were listed: magazines, books, civic/religious leader, newspapers, internet, television, radio, friends or relatives, and other. Because a number of respondents wrote in financial advisor/planner and broker, these two categories were added, for a total of 11 categories. Of the entire sample (n=814), 75.80% (n=617) ranked their choices as instructed. For this reason, the original categories were then coded as (0) not selected as a top three most used delivery method of financial information or (1) selected as a top three most used delivery method of financial information for each of the 11 separate factors. If a respondent did not answer this question, it was coded as (0) not selected as a top three delivery method.

The ranked sample (n=617) was then coded and analyzed separately. Each of the eleven categories of delivery methods of financial information were categorized as: (1) most used delivery method of financial information, (2) second most used delivery method of financial information, (3) third most used delivery method of financial information, and (4) not ranked as a top three most used delivery method of financial information.

### ***Informal Sources of Financial Education***

This variable was presented as a two-part question; “Have you had any informal financial education?” This was coded as (0) no and (1) yes. The second part of the question asked, “If yes, please rank your top three sources of informal financial education by placing the numbers 1 through 3 in the space provided, 1 being the most influential source”. Six categories were used: employer, financial institution or financial planner, cooperative extension, faith-based group, community-based organization, and other. Again, because only 75.80% (n=617) of the sample ranked their choices as instructed, the original categories were then coded as (0) not selected as a top three influential source of informal financial education or (1) selected as a top three influential source of informal financial education for each of the

six separate factors. If a respondent did not answer this question, it was coded as (0) not selected as a top three influential source of informal financial education.

The ranked sample (n=617) was then coded and analyzed separately. Each of the six categories of informal sources of financial education were categorized as: (1) most influential source of informal financial education, (2) second most influential source of informal financial education, (3) third most influential source of informal financial education, and (4) not ranked as a top three influential source of informal financial education.

### ***Formal Sources of Financial Education***

This variable was also presented as a two-part question; “Have you had any formal financial education?” This was coded as (0) no and (1) yes. The second part of the question asked, “If yes, please rank your top three sources of formal financial education by placing the numbers 1 through 3 in the space provided, 1 being the most influential source”. Six categories were used: high school, community college, associate program, bachelor’s program, graduate program, and other. Again, because only 75.80% (n=617) of the sample ranked their choices as instructed, the original categories were then coded as (0) not selected as a top three influential source of formal financial education or (1) selected as a top three influential source of formal financial education for each of the six separate factors. If a respondent did not answer this question, it was coded as (0) not selected as a top three influential source of formal financial education.

The ranked sample (n=617) was then coded and analyzed separately. Each of the six categories of formal sources of financial education were categorized as: (1) most influential source of formal financial education, (2) second most influential source of formal financial

education, (3) third most influential source of formal financial education, and (4) not ranked as a top three influential source of formal financial education.

### ***Informal or Formal Financial Education***

The questions “Have you had any informal financial education” and “Have you had any formal financial education” were also coded as one factor to measure the impact of informal versus formal financial education on perceived financial well-being. This was coded as (0) neither informal nor formal financial education, (1) only informal financial education, (2) only formal financial education, and (3) both informal and formal financial education.

### **Analysis**

A quantitative analysis was used in this study. A block regression of the total sample was used with financial well-being as the dependent variable and all other items as independent variables to test for possible linear relationship. The justification for the order of variables was determined theoretically and conceptually based on previous literature and by preliminary analysis of the data to determine the significant change in F for each block of variables: demographics, delivery method of financial information, formal sources of financial education, informal sources of financial education, and having had any type of formal or informal financial education. Initially, a 5 block regression was conducted using the previously mentioned blocks. Because there was not a significant change in F for formal sources of financial education, informal sources of financial education, and having had any type of formal or informal financial education, these blocks were combined, and it was determined that a 3 block regression would be used. Also, due to collinearity between having had any type of formal or informal financial education and sources of formal and

informal financial education, the variable of having formal or informal financial education was removed from the model.

The first block included the demographic factors: gender, race, ethnicity, age, marital status, number of children in the home, housing tenure, education, employment status, rural or urban location, and household income. Delivery methods of financial information were added to the second block. The third block added sources of formal financial education and sources of informal financial education to see if there is an effect on perceived financial well-being while controlling for all other factors.

Descriptive statistics were calculated for all variables. Frequencies were used to rank groups of independent variables in order of most used.

The variable of having formal or informal financial education was analyzed using a separate regression with financial well-being as the dependent variable and this factor, demographic factors, and delivery methods as independent variables to see if there is an effect on perceived financial well-being while controlling for significant groups of variables.

An analysis of variance (ANOVA) with Bonferroni post-hoc test was used to identify pair wise differences between mean perceived financial well-being for individual significant variables and for the variable of having formal or informal financial education.

A separate analysis was conducted using the sample (n=617) of respondents that ranked their responses to the financial education questions. Descriptive statistics were calculated for all factors.

Data in this study were analyzed using SPSS statistical software. A detailed description of statistical procedures and results is included in Chapter 4.



## **CHAPTER 4. RESULTS**

The results were organized according to statistical analysis procedures used. First are descriptive statistics, categorized by variable. Next is a block regression of the total sample with demographic factors in the first block, delivery methods of financial information variables in the second block, and sources of formal financial education variables and sources of informal financial education variables in the third block to measure the effect of these variables, change in variance, on perceived financial well-being. Assumptions for the model were tested and reported.

A separate block regression model was used to test for the significance of having any formal or informal financial education. This model was used based on the significance of these groups of variables, block one and block two, in the previous model, with the factor of having formal or informal financial education in the third block.

Fourth, an analysis of variance (ANOVA) with Bonferroni post-hoc test was used to identify pair wise differences between mean perceived financial well-being for individual variables found to be significant in the block regression of the total sample and the variable of having formal or informal financial education.

Finally, a separate analysis was conducted using the sample (n=617) of respondents that ranked their responses to the questions regarding delivery methods of financial information, informal sources of financial education, and formal sources of financial education.

### Total Sample Descriptive Statistics

#### *Perceived Financial Well-Being*

Valid responses to the eight-question PFW scale totaled n=813 subjects out of the total sample (n=814). The mean and standard deviation was 6.24 and 2.18, respectively.

The PFW scale score frequency is listed in Table 4.1 and demonstrated in Figure 4.1.

Table 4.1

#### *PFW Scale Score Frequency for Total Sample (n=813)*

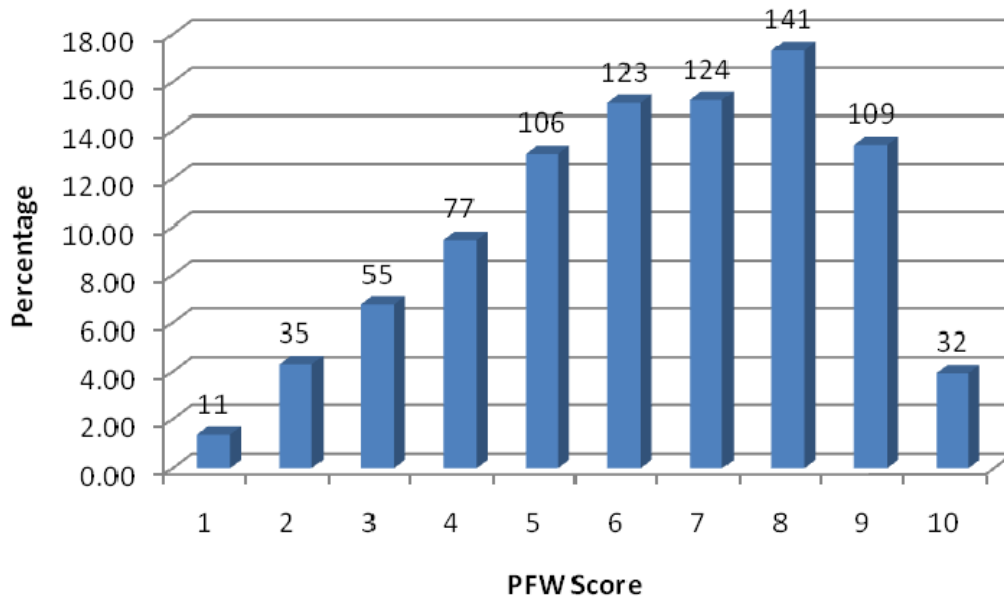
PFW Score	Frequency	Percent	Valid Percent
1	11	1.35	1.35
2	35	4.30	4.31
3	55	6.76	6.77
4	77	9.46	9.47
5	106	13.02	13.04
6	123	15.11	15.13
7	124	15.23	15.25
8	141	17.32	17.34
9	109	13.39	13.41
10	32	3.93	3.94
Total n	813	99.88	100.00
Missing	1	0.12	

Note.  $M=6.24$ ;  $SD=2.18$

#### *Gender*

The total number of subjects answering the question regarding gender was n=802, 56%, 453, male and 43%, 349, female.

Figure 4.1. Frequency for PFW score for total sample (n=813).



### ***Age***

The total number of subjects answering the question on age was n=794 with a mean of 55.07 and a standard deviation of 15.94. The minimum age reported was 21 and the maximum age reported was 92. The age frequency is listed in Table 4.2.

### ***Marital Status***

The total number of subjects answering to marital status was n=802: six percent (6%) never married, five percent (5%) living with partner, nine percent (9%) widowed, 12% divorced/separated, and 67% married.

### ***Education***

The total number of subjects answering to highest level of education completed was n=802. Frequencies for highest level of education completed are presented in Table 4.3. For category (8) other, participants wrote in the following: full time student, nine-month clerical

Table 4.2  
*Age Frequency for Total Sample (n=794)*

Age	Frequency	Percent	Valid Percent
20-29	46	5.7	5.8
30-39	95	11.7	12.0
40-49	149	18.3	18.8
50-59	205	25.2	25.8
60-69	145	17.8	18.3
70-79	90	11.1	11.3
80-89	54	6.6	6.8
90-99	10	1.2	1.3
Total n	794	97.5	100.0
Missing	20	2.5	

*Note.*  $M=55.07$ ;  $SD=15.94$

degree, technical or trade school (12 respondents), cosmetology school, one-year business school, and licensure.

### ***Race***

The total number of subjects answering the question on category or categories of race with which they most closely identify was  $n=798$ . Ninety-five percent (95%) identified themselves as white and two percent (2%) identified themselves as American Indian or Alaska Native. The race frequency is listed in Table 4.4. For category (6) other, participants wrote in the following: Sanscrit, Northern European, Latin, and all.

### ***Ethnicity***

The total number of subjects answering to ethnicity was  $n=717$ , two percent (2%) Hispanic or Latino and 87% not Hispanic or Latino.

Table 4.3

*Level of Education Frequency for Total Sample (n=802)*

Level of Education	Frequency	Percent	Valid Percent
(1) Elementary (1-8)	25	3.1	3.1
(2) High school/GED	226	27.8	28.2
(3) Associate	98	12.0	12.2
(4) Some college	149	18.3	18.6
(5) Bachelor's	178	21.9	22.2
(6) Master's professional	80	9.8	10.0
(7) Doctorate	28	3.4	3.5
(8) Other	18	2.2	2.2
Total n	802	98.5	100.0
Missing	12	1.5	

*Housing Tenure*

The total number of subjects that answered the question regarding housing tenure was n=803: 53% owned with mortgage or loan, 32% owned without mortgage or loan, 11% rented, and three percent (3%) occupied without payment of rent.

*Children in the Home*

The total number of subjects answering to dependent children currently living in the home was n=803 with a mean of 0.67 and a standard deviation of 1.10. Frequencies for number of dependent children currently living in the home are displayed in Table 4.5.

Table 4.4

*Race Frequency for Total Sample (n=798)*

Race	Frequency	Percent	Valid Percent
(1) American Indian or Alaska Native	5	0.6	0.6
(2) Asian	0	0.0	0.0
(3) Black or African American	2	0.2	0.3
(4) Native Hawaiian or Pacific Islander	0	0.0	0.0
(5) White	772	94.8	96.7
(6) Other	4	0.5	0.5
(7) 1 and 5	12	1.5	1.5
(8) 4 and 5	1	0.1	0.1
(9) 2, 3, and 5	1	0.1	0.1
(10) 1, 2, and 5	1	0.1	0.1
Total n	798	98.0	100.0
Missing	16	2.0	

***Employment Status***

The total number of subjects answering the question on employment status was n=800: three percent (3%) unemployed, 17% self-employed, 50% employed, 25% retired, two percent (2%) other, and one percent (1%) disabled. For category (5) other, participants wrote in the following: stay-at-home mom (2 respondents), homemaker (2 respondents), part-time (2 respondents), pastor, and caregiver.

***Rural or Urban Location***

The total number of subjects answering to rural or urban location was n=793, 37% rural and 61% urban.

Table 4.5

*Children Frequency for Total Sample (n=802)*

Children	Frequency	Percent	Valid Percent
(0) 0	521	64.0	64.9
(1) 1	120	14.7	14.9
(2) 2	95	11.7	11.8
(3) 3	46	5.7	5.7
(4) 4	15	1.8	1.9
(5) 5	4	.5	.5
(6) 6+	2	.2	.2
Total n	803	98.6	100.0
Missing	11	1.4	

Note.  $M=0.67$ ;  $SD=1.10$

***Income***

The total number of subjects answering to income was  $n=798$ : four percent (4%) <\$10,000, seven percent (7%) \$10,000-\$19,999, 11% \$20,000-\$29,999, ten percent (10%) \$30,000-\$39,999, 11% \$40,000-\$49,999, ten percent (10%) \$50,000-\$59,999, nine percent (9%) \$60,000-\$69,999, eight percent (8%) \$70,000-\$79,999, six percent (6%) \$80,000-\$89,999, four percent (4%) \$90,000-\$99,999, and 13% \$100,000+ (Table 4.6).

***Delivery Methods of Financial Information***

Since respondents that did not answer this question were coded as (0) not selected as a top three most used delivery method of financial information, the total sample ( $n=814$ ) was used in calculating the descriptive statistics and frequencies for delivery methods of financial information. Frequencies for all 11 categories of delivery methods can be found in Table 4.7.

Table 4.6

*Income Frequency for Total Sample (n=798)*

Income	Frequency	Percent	Valid Percent
(1) <\$10,000	31	3.8	4.1
(2) \$10,000-\$19,999	56	6.9	7.5
(3) \$20,000-\$29,999	92	11.3	12.3
(4) \$30,000-\$39,999	77	9.5	10.3
(5) \$40,000-\$49,999	91	11.2	12.1
(6) \$50,000-\$59,999	79	9.7	10.5
(7) \$60,000-\$69,999	71	8.7	9.5
(8) \$70,000-\$79,999	65	8.0	8.7
(9) \$80,000-\$89,999	48	5.9	6.4
(10) \$90,000-\$99,999	34	4.2	4.5
(11) \$100,000+	105	12.9	14.0
Total n	749	92.0	100.0
Missing	65	8.0	

Subjects selecting the (9) other category as one of their top three most used delivery method of financial information totaled 69, 8.5%. Participants wrote in the following responses: mail (8 respondents), bank/banker (4 respondents), self-educated/me (4 respondents), employer/work (3 respondents), friend (3 respondents), school, accountant, newsletter, seminar, subscription, background, private publication, workshops, co-worker, and sister.

***Informal Sources of Financial Education***

The total sample (n=814) was used in calculating the descriptive statistics and frequencies for informal sources of financial education because respondents that did not answer this question were coded as (0) not selected as a top three influential source of



Table 4.7

*Dependent Factors Frequency for Total Sample (n=814)*

Factor	Frequency		Percent	
	0	1	0	1
Delivery Methods				
Magazines	615	199	75.6	24.4
Books	746	68	91.6	8.4
Civic/religious	797	17	97.9	2.1
Newspapers	307	507	37.7	62.3
Internet	477	337	58.6	41.4
Television	240	574	29.5	70.5
Radio	605	209	74.3	25.7
Friends or relatives	588	226	72.2	27.8
Other delivery	745	69	91.5	8.5
Advisor	784	30	96.3	3.7
Broker	804	10	98.8	1.2
Informal Sources (No/Yes) <sup>a</sup>	430	381	53.0	47.0
Employer	606	208	74.4	25.6
Financial institution/planner	499	315	61.3	38.7
Extension	766	48	94.1	5.9
Faith-based	752	62	92.4	7.6
Community	725	89	89.1	10.9
Other informal	692	122	85.0	15.0
Formal Sources (No/Yes) <sup>b</sup>	612	197	75.6	24.4
High school	692	122	85.0	15.0
Community college	778	36	95.6	4.4
Associate	772	42	94.8	5.2
Bachelor's	711	103	87.3	12.7
Graduate	789	25	96.9	3.1
Other formal	765	49	94.0	6.0

<sup>a</sup>Missing=3, n=811<sup>b</sup>Missing=5, n=809

informal financial education. Frequencies for all six categories of informal financial education can be found in Table 4.7.

Subjects selecting the (6) other category as one of their top three influential sources of informal financial education totaled 122, 15.0%. Participants wrote in the following responses: parent (10 respondents), family (10 respondents), self-educated (8 respondents), friend (7 respondents), reading (5 respondents), school (4 respondents), family business (3 respondents), internet (3 respondents), book (2 respondents), hard knocks (2 respondents), spouse (2 respondents), media (2 respondents), Dave Ramsey (2 respondents), advisor, conference, newspaper, bible, life, legal education, stay at home mom, periodical, reading, experience, children, and military.

### ***Formal Sources of Financial Education***

The total sample (n=814) was also used in calculating the descriptive statistics and frequencies for formal sources of financial education because respondents that did not answer this question were coded as (0) not selected as a top three influential source of formal financial education. Frequencies for all six categories of formal financial education can be found in Table 4.7.

Subjects selecting the (6) other category as one of their top three influential sources of formal financial education totaled 49, 6.0%. Participants wrote in the following responses: workshop (3 respondents), employer (3 respondents), vo-tech (2 respondents), parent (2 respondents), family (2 respondents), seminar, certification, licensed, life, broker, H&R Block course, Institute of Management and Administration, military, conference, bible, continuing education, Certified Financial Planner, Certified Public Accountant, and consumer credit.

### Total Sample Block Regression Model

Demographic factors were entered in the first block, delivery methods of financial information variables in the second block, and sources of formal financial education variables and sources of informal financial education variables in the third block. The block regression was conducted using listwise deletion of missing variables, resulting in an analysis conducted on 651 cases out of 814. The model showed a significant change in F for block one and two, resulting in a very slight improvement in the value of adjusted  $R^2$ . Block three did not produce a significant change in F. Table 4.8 contains the model summary for all three blocks.

Table 4.8

#### *Block Regression Model Effect Size for Perceived Financial Well-Being (n=651)*

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
Demographics	.562	.316	.304	1.82933	.316	26.813	11	639	.000	
Delivery methods	.588	.346	.323	1.80368	.031	2.664	11	628	.002	
Sources	.601	.361	.326	1.79992	.015	1.219	12	616	.266	2.093

Assumptions for the current model were evaluated and can be found in Appendix F. The Durbin-Watson statistic, which tests for the assumption of independent residuals in the model, did not find a correlation between errors and was acceptable at 2.093 (not significantly different from 2), as seen in Table 4.8. The regression plot, shown in Figure F.1, indicated a linear relationship in the model. The oval shaped scatterplot, demonstrated in Figure F.2, indicated that the assumption of homoscedasticity (equal variances) was not

violated. The histogram (Figure F.3) and normal partial probability (P-P) plot (Figure F.4) indicated normally distributed residuals in the model.

Confidence intervals for all variables found to be significant in the model showed no indication that they would not contain the population parameter. None of the significant variables had a change in sign, again giving no indication that they would not contain the population parameter.

All variables were tested for multicollinearity through interpretation of the variance-inflation factor (VIF). The VIF indicates how much larger the variance would be if it was not correlated with other variables. The VIF was less than 1.87 ( $<10$  is a common criterion) for all independent variables, and tolerance was greater than 0.51 for all independent variables. The low VIF indicates a very low degree of correlation.

As shown above in Table 4.8, block one, demographic factors, and block two, delivery methods of financial information, resulted in a significant F change. However, block three, sources of formal or informal financial education, did not result in a significant F change. The demographic variables in block one accounted for 31.6% of the variance explained. Delivery methods of financial information variables added 3% of variance to the model, in block two, significantly increasing the effect size to 34.6%. Adding informal source of financial education and formal source of financial education variables to the model increased the explained variance by 1.5%, which was not significant, and brought the total variance explained by the model to 36.1%. Table 4.9 has a summary of the block regression model.

Table 4.9

*Summary Block Regression Model for Perceived Financial Well-Being (n=651)*

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Block		B	Std. Error	Beta		
1	(Constant)	2.569	1.574		1.633	.103
Demographic Variables	Gender	-.423	.153	-.095	-2.773	.006
	Age	.293	.054	.212	5.381	.000
	Marital Status	-.113	.069	-.062	-1.645	.100
	Education	.051	.049	.038	1.041	.298
	Race	.144	.159	.030	.909	.364
	Ethnicity	-.214	.587	-.012	-.365	.715
	Housing Tenure	.176	.102	.063	1.725	.085
	Children	-.306	.076	-.154	-4.047	.000
	Employment	.302	.098	.111	3.086	.002
	Rural/Urban	-.174	.153	-.038	-1.138	.256
	Income	.383	.031	.521	12.431	.000
2	(Constant)	3.229	1.637		1.972	.049
Delivery Methods added	Gender	-.460	.152	-.104	-3.026	.003
	Age	.251	.058	.181	4.335	.000
	Marital Status	-.081	.069	-.044	-1.183	.237
	Education	.019	.050	.014	.392	.695
	Race	.128	.159	.027	.805	.421
	Ethnicity	-.261	.581	-.015	-.450	.653
	Housing Tenure	.183	.102	.065	1.800	.072
	Children	-.346	.075	-.174	-4.587	.000
	Employment	.326	.097	.119	3.354	.001
	Rural/Urban	-.150	.154	-.033	-.975	.330
	Income	.392	.031	.533	12.524	.000
	Magazines	.097	.211	.019	.461	.645
	Books	-.101	.285	-.013	-.354	.723
	Civic/religious	.637	.510	.042	1.250	.212

Table 4.9 (continued)

Block		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3 Informal and Formal Sources added	Newspapers	-.129	.188	-.028	-.688	.492
	Internet	-.380	.196	-.086	-1.939	.053
	Television	-.470	.194	-.095	-2.426	.016
	Radio	.066	.212	.013	.310	.757
	Friends/relatives	.200	.204	.041	.980	.327
	Other delivery	.556	.309	.068	1.802	.072
	Advisor	.465	.407	.041	1.144	.253
	Broker	.390	.634	.021	.614	.539
	(Constant)	3.380	1.645		2.054	.040
	Gender	-.453	.153	-.102	-2.959	.003 **
	Age	.258	.059	.187	4.400	.000 *
	Marital Status	-.081	.069	-.044	-1.169	.243
	Education	-.002	.053	-.002	-.045	.964
	Race	.068	.162	.014	.417	.676
	Ethnicity	-.221	.583	-.012	-.379	.705
	Housing Tenure	.170	.102	.061	1.660	.097 <sup>+</sup>
	Children	-.351	.076	-.176	-4.619	.000 *
	Employment	.355	.099	.130	3.572	.000 *
	Rural/Urban	-.093	.157	-.021	-.595	.552
	Income	.382	.032	.520	11.970	.000 *
	Magazines	.041	.213	.008	.194	.846
	Books	-.136	.288	-.018	-.472	.637
	Civic/religious	.385	.529	.025	.727	.467
	Newspapers	-.162	.191	-.036	-.851	.395
	Internet	-.394	.197	-.090	-1.999	.046 ***
	Television	-.522	.196	-.105	-2.658	.008 **
	Radio	-.019	.216	-.004	-.088	.930
	Friends/relatives	.195	.205	.040	.948	.343

Table 4.9 (continued)

Block		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	Other delivery	.473	.315	.058	1.503	.133
	Advisor	.314	.412	.028	.764	.445
	Broker	.384	.636	.020	.604	.546
	Employer	.052	.197	.011	.264	.792
	Financial institution/planner	.245	.196	.055	1.253	.211
	Extension	.171	.319	.018	.536	.592
	Faith-based	.271	.284	.034	.952	.341
	Community	-.377	.238	-.056	-1.586	.113
	Other informal	-.274	.211	-.048	-1.295	.196
	High school	.425	.250	.071	1.701	.089 <sup>+</sup>
	Community college	-.390	.359	-.038	-1.085	.278
	Associate	.151	.336	.016	.449	.654
	Bachelor's	.155	.254	.025	.611	.541
	Graduate	-.023	.419	-.002	-.055	.956
	Other formal	.194	.311	.022	.624	.533

*Note.* Block 1:  $R^2 = .316$ , Adj  $R^2 = .304$  ( $p < 0.001$ ); Block 2:  $R^2 = .346$ , Adj  $R^2 = .323$  ( $p < 0.002$ ); Block 3:  $R^2 = .361$ ; Adj  $R^2 = .3264$  ( $p > 0.05$ ; not significant)

\* $p < 0.001$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.05$ ; +noted  $p < 0.1$ , but not significant at  $p < 0.05$

There were seven individual variables found to be statistically significant in block three of the regression, as shown in Table 4.9. Five demographic variables were significant: gender ( $t = -2.959$ ,  $p < 0.01$ ), age ( $t = 4.400$ ,  $p < 0.001$ ), children ( $t = -4.619$ ,  $p < 0.001$ ), employment ( $t = -3.572$ ,  $p < 0.001$ ), and income ( $t = 11.970$ ,  $p < 0.001$ ). Housing tenure ( $t = 1.660$ ,  $p < 0.1$ ), was not a significant variable at  $p < 0.05$ , but is worth noting. Two delivery method of financial information variables were significant, internet ( $t = -1.999$ ,  $p < 0.05$ ) and

television ( $t = -2.658, p < 0.01$ ). None of the informal sources of financial education and formal sources of financial education variables were found to be significant at  $p < 0.05$ , but it is worth noting high school ( $t = 1.701, p < 0.1$ ) as a formal source of financial education.

### **Informal or Formal Financial Education Regression Model**

The variable of having formal or informal financial education was analyzed using a separate regression with financial well-being as the dependent variable and formal or informal financial education, demographic factors, and delivery methods as independent variables. This model was used based on the significance of these groups of variables, block one and block two, in the previous model. The variable of having formal or informal financial education ( $t = 1.190, p > 0.05$ ), coded as (0) neither informal nor formal financial education, (1) only informal financial education, (2) only formal financial education, and (3) both informal and formal financial education, was entered as block three in this regression model. Formal or informal financial education was not found to be statistically significant after controlling for demographic and delivery method variables (see Table 4.10).

### **Analysis of Variance**

An analysis of variance (ANOVA) with Bonferroni post-hoc test was used to identify pair wise differences between mean perceived financial well-being for individual significant variables and for the variable of having formal or informal financial education.

#### ***Demographic Factors***

***Gender.*** A significant difference in mean perceived financial well-being ( $F = 23.318, p < 0.001$ ) was found between males ( $6.55 \pm 2.07$ ) and females ( $5.81 \pm 2.25$ ).



Table 4.10

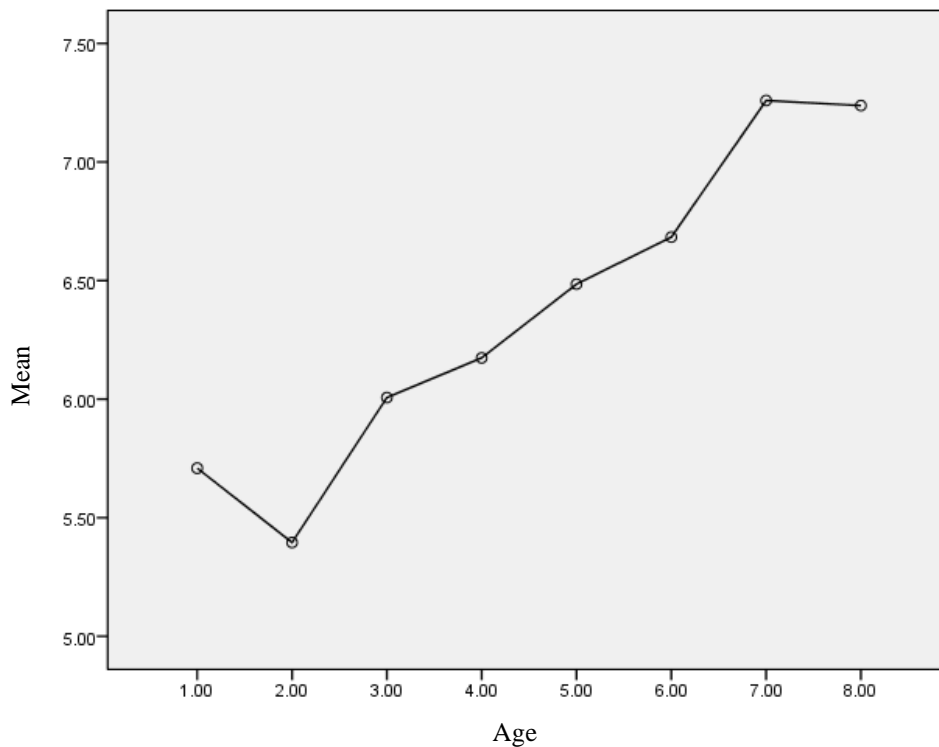
*Summary Regression Model for Informal or Formal Financial Education and Perceived Financial Well-Being (n=651)*

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.264	1.637		1.994	.047
Gender	-.457	.152	-.103	-3.011	.003
Age	.251	.058	.181	4.341	.000
Marital Status	-.078	.069	-.043	-1.138	.256
Education	.008	.051	.006	.155	.877
Race	.130	.159	.027	.817	.414
Ethnicity	-.288	.581	-.016	-.496	.620
Housing Tenure	.179	.102	.064	1.757	.079
Children	-.346	.075	-.174	-4.588	.000
Employment	.333	.097	.122	3.419	.001
Rural/Urban	-.149	.154	-.033	-.965	.335
Income	.388	.031	.528	12.354	.000
Magazines	.078	.212	.016	.369	.712
Books	-.126	.286	-.016	-.439	.661
Civic/religious	.589	.511	.039	1.152	.250
Newspapers	-.135	.188	-.030	-.720	.472
Internet	-.400	.196	-.091	-2.035	.042
Television	-.482	.194	-.097	-2.486	.013
Radio	.033	.214	.007	.153	.878
Friends or relatives	.201	.204	.041	.987	.324
Other delivery	.546	.309	.066	1.769	.077
Advisor	.459	.407	.040	1.129	.259
Broker	.381	.634	.020	.601	.548
Informal or formal	.081	.068	.041	1.190	.235

Note.  $R^2 = .348$ ; Adj  $R^2 = .324$ ;  $F \{23,627\} = 14.536$ , ( $p < 0.001$ )

**Age.** A significant difference in mean perceived financial well-being ( $F = 5.654$ ,  $p < 0.001$ ) for age was found. A Bonferroni post-hoc analysis revealed a difference between: (1) 20-29 ( $5.71 \pm 2.33$ ) and (7) 80-89 ( $7.26 \pm 2.13$ ); (2) 30-39 ( $5.40 \pm 2.15$ ) and (5) 60-69 ( $6.49 \pm 2.02$ ), (6) 70-79 ( $6.68 \pm 2.23$ ), and (7) 80-89 ( $7.26 \pm 2.13$ ); (3) 40-49 ( $6.01 \pm 2.01$ ) and (7) 80-89 ( $7.26 \pm 2.13$ ); and (4) 50-59 ( $6.17 \pm 2.24$ ) and (7) 80-89 ( $7.26 \pm 2.13$ ) (see Figure 4.2). The mean for (8), age 90-99, was 7.24 (SD=1.56), but, at a low response rate ( $n=9$ ), a significant difference is not found.

Figure 4.2. Mean perceived financial well-being for age ( $n=792$ ).

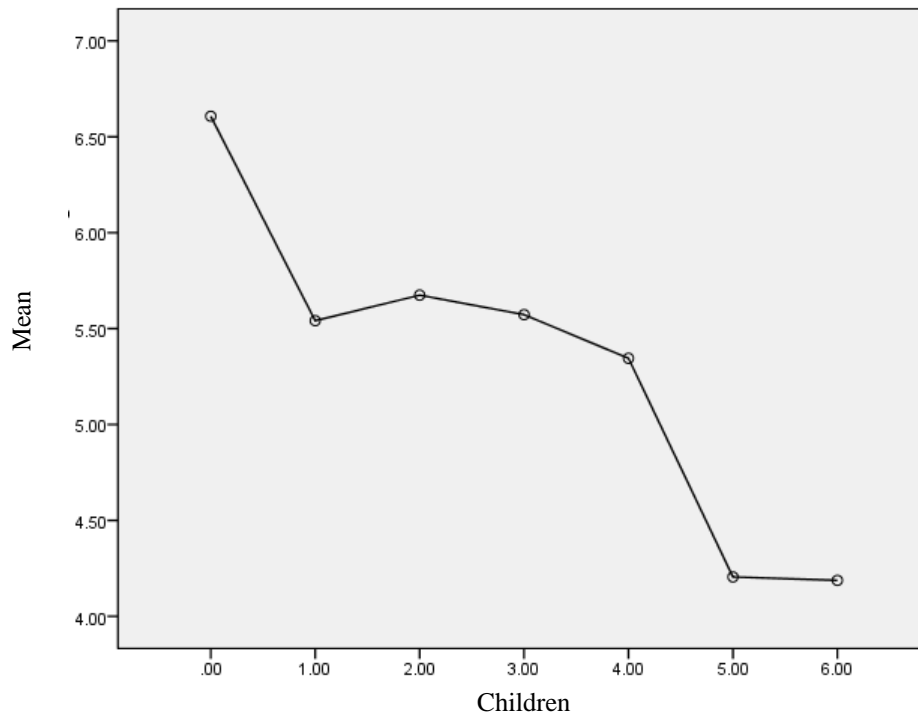


Note. Significant difference ( $F = 5.654$ ,  $p < 0.001$ ) between 1 & 7; 2 & 5, 6, and 7; 3 & 7; and 4 & 7

**Children.** A significant difference in mean perceived financial well-being ( $F = 7.961$ ,  $p < 0.001$ ) for children was found. A Bonferroni post-hoc analysis revealed a difference between (0) 0 ( $6.61 \pm 2.12$ ) and (1) 1 ( $5.54 \pm 2.08$ ), (2) 2 ( $5.67 \pm 2.24$ ), and (3) 3

( $5.57 \pm 2.17$ ) (see Figure 4.3). With a low response rate for (4) 4 ( $n=15$ ), (5) 5 ( $n=4$ ), and (6) 6+ ( $n=2$ ), a significant difference is not found.

Figure 4.3. Mean perceived financial well-being for children ( $n=802$ ).

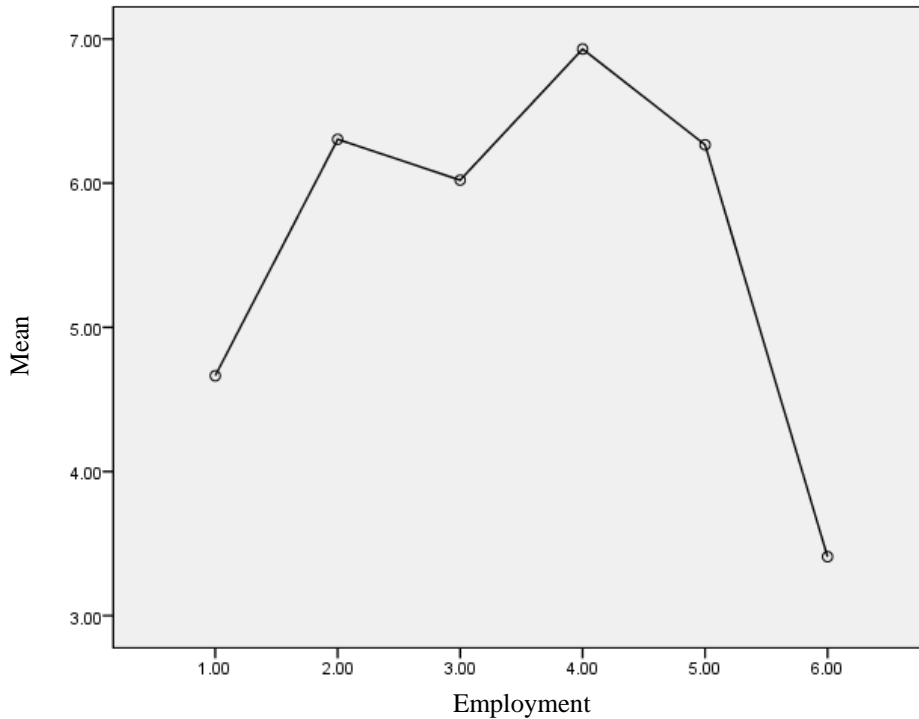


Note. Significant difference ( $F = 7.961$ ,  $p < 0.001$ ) between 0 & 1, 2, and 3

**Employment.** A significant difference in mean perceived financial well-being ( $F = 11.506$ ,  $p < 0.001$ ) for employment was found. A Bonferroni post-hoc analysis revealed a difference between: (1) unemployed ( $4.66 \pm 1.91$ ) and (2) self-employed ( $6.30 \pm 1.94$ ), (3) employed ( $6.02 \pm 2.18$ ), and (4) retired ( $6.93 \pm 2.07$ ); (2) self-employed ( $6.30 \pm 1.94$ ) and (6) disabled ( $3.41 \pm 2.67$ ); (3) employed ( $6.02 \pm 2.18$ ) and (4) retired ( $6.93 \pm 2.07$ ) and (6) disabled ( $3.41 \pm 2.67$ ); (4) retired ( $6.93 \pm 2.07$ ) and (6) disabled ( $3.41 \pm 2.67$ ); and (5) other ( $6.27 \pm 2.16$ ) and (6) disabled ( $3.41 \pm 2.67$ ) (see Figure 4.4).

**Income.** A significant difference in mean perceived financial well-being ( $F = 14.108$ ,  $p < 0.001$ ) for income was found. A Bonferroni post-hoc analysis revealed a difference

Figure 4.4. Mean perceived financial well-being for employment (n=799).

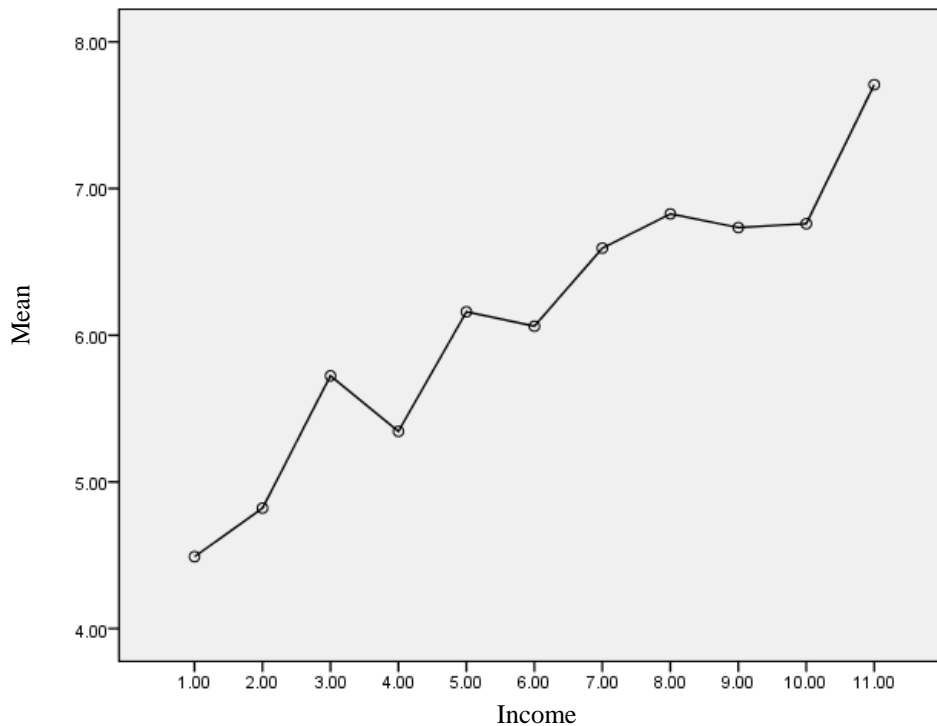


Note. Significant difference ( $F = 11.506$ ,  $p < 0.001$ ) between 1 & 2, 3 and 4, 2 & 6, 3 & 4 and 6, 4 & 6, and 5 & 6

between: (1) less than \$10,000 ( $4.49 \pm 2.23$ ) and (5) \$40,000 to \$49,999 ( $6.16 \pm 2.03$ ), (6) \$50,000 to \$59,999 ( $6.06 \pm 2.01$ ), (7) \$60,000 to \$69,999 ( $6.59 \pm 2.02$ ), (8) \$70,000 to \$79,999 ( $6.83 \pm 1.89$ ), (9) \$80,000 to \$89,999 ( $6.73 \pm 1.74$ ), (10) \$90,000 to \$99,999 ( $6.76 \pm 1.67$ ), and (11) \$100,000+ ( $7.71 \pm 1.48$ ); (2) \$10,000 to \$19,999 ( $4.82 \pm 2.24$ ) and (5) \$40,000 to \$49,999 ( $6.16 \pm 2.03$ ), (6) \$50,000 to \$59,999 ( $6.06 \pm 2.01$ ), (7) \$60,000 to \$69,999 ( $6.59 \pm 2.02$ ), (8) \$70,000 to \$79,999 ( $6.83 \pm 1.89$ ), (9) \$80,000 to \$89,999 ( $6.73 \pm 1.74$ ), (10) \$90,000 to \$99,999 ( $6.76 \pm 1.67$ ), and (11) \$100,000+ ( $7.71 \pm 1.48$ ); (3) \$20,000 to \$29,999 ( $5.72 \pm 2.36$ ) and (8) \$70,000 to \$79,999 ( $6.83 \pm 1.89$ ) and (11) \$100,000+ ( $7.71 \pm 1.48$ ); (4) \$30,000 to \$39,999 ( $5.34 \pm 2.31$ ) and (7) \$60,000 to \$69,999 ( $6.59 \pm 2.02$ ), (8) \$70,000 to \$79,999 ( $6.83 \pm 1.89$ ), (9) \$80,000 to \$89,999 ( $6.73 \pm 1.74$ ), (10) \$90,000 to \$99,999 ( $6.76 \pm 1.67$ ), and (11) \$100,000+ ( $7.71 \pm 1.48$ ); (5) \$40,000 to \$49,999 ( $6.16 \pm$

2.03) and (11) \$100,000+ ( $7.71 \pm 1.48$ ); (6) \$50,000 to \$59,999 ( $6.06 \pm 2.01$ ) and (11) \$100,000+ ( $7.71 \pm 1.48$ ); and (7) \$60,000 to \$69,999 ( $6.59 \pm 2.02$ ) and (11) \$100,000+ ( $7.71 \pm 1.48$ ) (see Figure 4.5).

Figure 4.5. Mean perceived financial well-being for income (n=748).

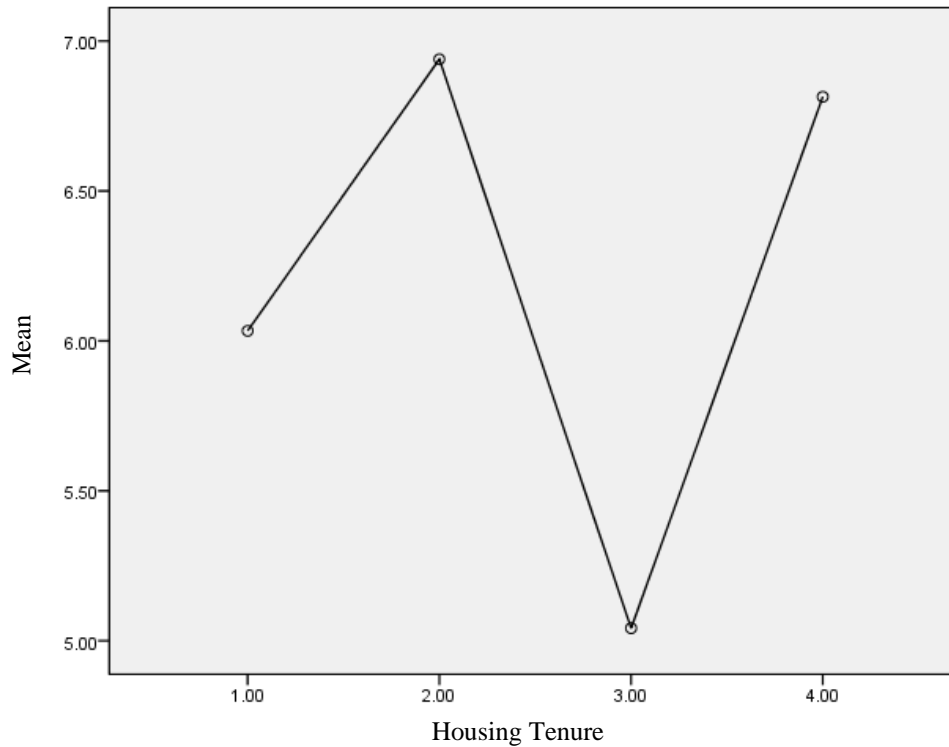


Note. Significant difference ( $F = 14.108$ ,  $p < 0.001$ ) between 1 & 5, 6, 7, 8, 9, 10, and 11, 2 & 5, 6, 7, 8, 9, 10, and 11, 3 & 8 and 11, 4 & 7, 8, 9, 10, and 11, 5 & 11, 6 & 11, and 7 & 11

**Housing Tenure.** Housing tenure ( $t = 1.660$ ,  $p < 0.1$ ), was not a significant variable at  $p < 0.05$ , but is worth noting. A significant difference in mean perceived financial well-being ( $F = 21.571$ ,  $p < 0.001$ ) for housing tenure was found. A Bonferroni post-hoc analysis revealed a difference between: (1) owned by you or someone in this household with a mortgage or loan ( $6.03 \pm 2.07$ ) and (2) owned by you or someone in this household free and clear without a mortgage or loan ( $6.94 \pm 2.08$ ) and (3) rented ( $5.04 \pm 2.34$ ); (2) owned by you

or someone in this household free and clear without a mortgage or loan ( $6.94 \pm 2.08$ ) and (3) rented ( $5.04 \pm 2.34$ ); and (3) rented ( $5.04 \pm 2.34$ ) and (4) occupied without payment of rent ( $6.81 \pm 1.92$ ) (see Figure 4.6).

*Figure 4.6.* Mean perceived financial well-being for housing tenure (n=802).



*Note.* Significant difference ( $F = 21.571$ ,  $p < 0.001$ ) between 1 & 2 and 3, 2 & 3, and 3 & 4

### ***Delivery Methods***

***Internet.*** No significant difference in mean perceived financial well-being ( $F = .812$ ,  $p > 0.05$ ) was found for internet as a delivery method of financial information.

***Television.*** A significant difference in mean perceived financial well-being ( $F = 9.651$ ,  $p < 0.01$ ) for television as a delivery method of financial information was found between: (0) not selected as a top three most used delivery method of financial information

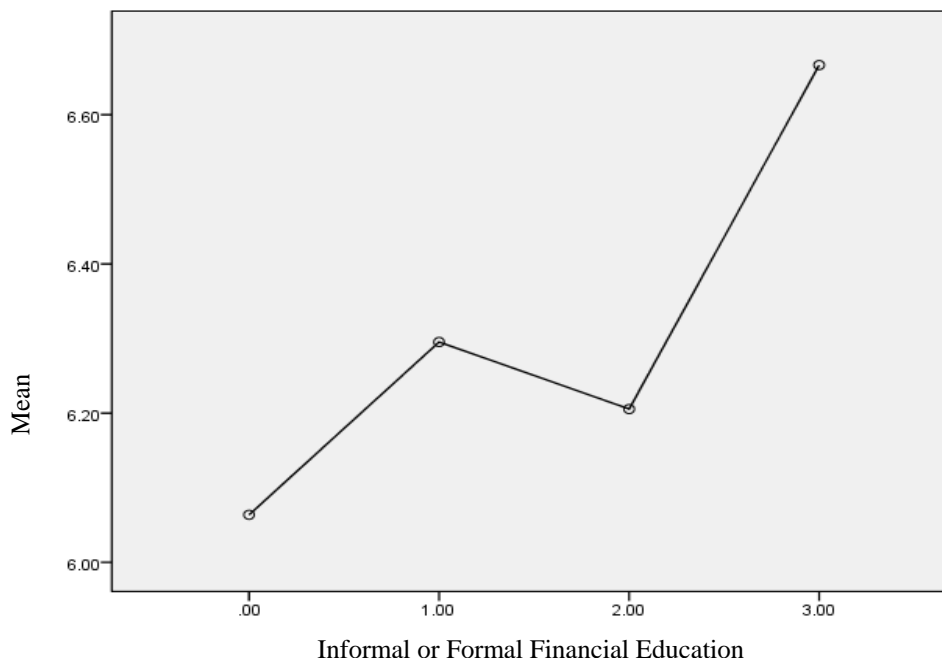
( $6.61 \pm 2.05$ ) and (1) selected as a top three most used delivery method of financial information ( $6.09 \pm 2.21$ ).

### ***Informal or Formal Sources of Financial Education***

***High School.*** No significant difference in mean perceived financial well-being ( $F = 2.816$ ,  $p > 0.05$ ) was found for high school as a formal source of financial education.

***Informal or Formal Financial Education.*** There was not a significant difference in mean perceived financial well-being ( $F = 2.541$ ,  $p > 0.05$ ) for informal or formal financial education. However, a significant difference, between (0) neither informal nor formal financial education ( $6.06 \pm 2.31$ ) and (3) both informal and formal financial education ( $6.67 \pm 2.15$ ), in mean perceived financial well-being ( $F = 2.541$ ,  $p < 0.05$ ) for informal or formal financial education was found (see Figure 4.7).

*Figure 4.7.* Mean perceived financial well-being for informal or formal financial education (n=813).



*Note.* Significant difference ( $F = 2.541$ ,  $p < 0.05$ ) between 0 and 3

### **Ranked Sample Descriptive Statistics**

A separate analysis was conducted using the sample (n=617) of respondents that ranked their responses to the questions regarding delivery methods of financial information, informal sources of financial education, and formal sources of financial education.

#### ***Delivery Methods of Financial Information***

Frequencies for all 11 categories of delivery methods can be found in Table 4.11 for the ranked sample. Appendix G demonstrates delivery methods ranked as 1, 2, and 3.

#### ***Informal Sources of Financial Education***

Frequencies, for all six categories of informal sources of financial education can be found in Table 4.11 for the ranked sample. Appendix H demonstrates informal sources of financial education ranked as 1, 2, and 3.

#### ***Formal Sources of Financial Education***

Frequencies, for all six categories of formal sources of financial education can be found in Table 4.11 for the ranked sample. Appendix I demonstrates formal sources of financial education ranked as 1, 2, and 3.



Table 4.11

*Descriptive Statistics and Frequency of Dependent Factors for Ranked Sample (n=617)*

Factor	Frequency			
Delivery Methods	1	2	3	4
Magazines	28	57	70	462
Books	15	14	26	562
Civic/religious	4	1	6	606
Newspapers	114	164	125	214
Internet	116	94	72	335
Television	209	135	109	164
Radio	28	67	68	454
Friends or relatives	53	50	79	435
Other delivery	28	11	18	560
Advisor	19	2	6	590
Broker	3	1	3	610
Informal Sources				
Employer	67	79	27	444
Financial institution/planner	194	63	15	345
Extension	4	22	14	577
Faith-based	18	23	16	560
Community	10	25	39	543
Other informal	28	28	49	512
Formal Sources				
High school	40	31	25	521
Community college	12	11	5	589
Associate	16	14	5	582
Bachelor's	58	26	2	531
Graduate	13	3	4	597
Other formal	15	8	12	582

## **CHAPTER 5. SUMMARY AND DISCUSSION**

Following is a discussion of the perceived financial well-being in South Dakota and the relationship between perceived financial well-being and demographics, delivery methods, and informal and formal financial education, given the current findings and previous literature. This is followed by a ranking of: the eleven delivery methods of financial information by most used, the six informal sources of financial education by most influential, and the six formal sources of financial education by most influential. Limitations of the study are discussed, as well as implications of the current findings.

### **Perceived Financial Well-being**

In response to the first research question identified, the mean perceived financial well-being for adults in South Dakota was 6.24 (SD=2.18). From a 2004 survey, the mean perceived financial well-being for adults in the United States using the same PFW scale was 5.7 (SD=2.4) (Garman et al., 2005). Although median household income, as reported by the U.S. Census Bureau (2009), is \$43,507 in South Dakota versus \$50,740 for the United States, income alone does not appear to be the only variable affecting perceived financial well-being. Given that Curtin (2008) reported consumers had the most pessimistic economic outlook of the last quarter century in November of 2008 when the current data were collected, lower perceived financial well-being may have been expected, but this was not the case.

### **Demographics**

Demographic variables as a group were significantly related to perceived financial well-being. Using the block regression, demographic variables in block one, gender, race, ethnicity, age, marital status, number of children in the home, housing tenure, education

completed, employment status, rural or urban location, and household income, accounted for 31.6% of the variance in perceived financial well-being. In terms of H<sub>1</sub>: There is a relationship between demographic factors and perceived financial well-being, two conclusions can be drawn. First, accept the hypothesis, demographic factors, as a group, are associated with perceived financial well-being. This finding is supported by previous research by Porter and Garman (1992) that found objective indicators as a group do explain variance in financial well-being. Second, conclusions should be drawn about each individual factor.

Individual demographic factors were also significantly related to the variance in perceived financial well-being: gender ( $t = -2.959, p < 0.01$ ), age ( $t = 4.400, p < 0.001$ ), children ( $t = -4.619, p < 0.001$ ), employment ( $t = -3.572, p < 0.001$ ), and income ( $t = 11.970, p < 0.001$ ).

Males were found to have significantly higher perceived financial well-being than females. Females' PFW scale score was 5.81 (SD=2.25), but males' PFW scale score was significantly higher at 6.55 (SD=2.07). A gender difference in the perception of economic well-being is supported by Hayhoe and Wilhelm (1998) and Leach, Hayhoe, and Turner (1999). Loibl and Hira (2005) studied the effect of self-directed, employer-provided financial information on financial satisfaction and found that being male does contribute to financial satisfaction.

Perceived financial well-being did vary by age. Mean perceived financial well-being was significantly lower for younger age groups than older age groups (Figure 4.6). These findings are supported by previous research. Sumarwan and Hira (1993) looked at rural households and found age to be significantly related a person's satisfaction with their

financial status. Similarly, Loibl and Hira (2005) identified older age as contributing to financial satisfaction.

The number of dependent children in the home is also significantly related to perceived financial well-being. Participants with no dependent children in the home ( $M=6.61$ ,  $SD=2.12$ ) had significantly higher mean perceived financial well-being than those with one ( $M=5.54$ ,  $SD=2.08$ ) two ( $M=5.67$ ,  $SD=2.24$ ) or three ( $M=5.57$ ,  $SD=2.17$ ) children. Those with four children ( $M=5.35$ ,  $SD=1.58$ ,  $n=15$ ), five children ( $M=4.21$ ,  $SD=3.25$ ,  $n=4$ ), and six or more children ( $M=4.19$ ,  $SD=0.44$ ,  $n=2$ ) had low response rates and were not found to have a significant difference. Smaller household size also affected financial satisfaction in the study by Loibl and Hira (2005). Jayathirtha and Fox (1996) found that larger households and those with children were more likely to overspend, and Bae, Hanna, and Lindamood (1993) had similar results finding that the probability of overspending did increase with household size at the mean income level.

There was a significant difference by employment status as well. Mean perceived financial well-being for the unemployed ( $M=4.66$ ,  $SD=1.91$ ) was significantly lower than for self-employed ( $M=6.30$ ,  $SD=1.94$ ), employed ( $M=6.02$ ,  $SD=2.18$ ), and retired ( $M=6.93$ ,  $SD=2.07$ ) individuals. Individuals indicating disabled, handicapped, or SSD (Social Security Disability) for employment status ( $M=3.41$ ,  $SD=2.67$ ) had significantly lower perceived financial well-being than those responding self-employed ( $M=6.30$ ,  $SD=1.94$ ), employed ( $M=6.02$ ,  $SD=2.18$ ), retired ( $M=6.93$ ,  $SD=2.07$ ), or other ( $6.27 \pm 2.16$ ). Employed individuals ( $M=6.02$ ,  $SD=2.18$ ) had significantly lower perceived financial well-being than retired individuals ( $M=6.93$ ,  $SD=2.07$ ). The finding that retired individuals have significantly higher financial well-being than employed, unemployed, and disabled is

supported by previous findings by Hira and Mugenda (1998) that also found non-retirees were more likely to worry about their financial situation than retirees.

A positive relationship between income and perceived financial well-being was also found. Individuals with current annual household income of less than \$10,000 ( $M=4.49$ ,  $SD=2.23$ ) or \$10,000 to \$19,999 ( $M=4.82$ ,  $SD=2.24$ ) had significantly lower perceived financial well-being than individuals with an annual household income of \$40,000 to \$49,999 ( $M=6.16$ ,  $SD=2.03$ ), \$50,000 to \$59,999 ( $M=6.06$ ,  $SD=2.01$ ), \$60,000 to \$69,999 ( $M=6.59$ ,  $SD=2.02$ ), \$70,000 to \$79,999 ( $M=6.83$ ,  $SD=1.89$ ), \$80,000 to \$89,999 ( $6.73 \pm 1.74$ ), \$90,000 to \$99,999 ( $6.76 \pm 1.67$ ), and \$100,000+ ( $7.71 \pm 1.48$ ). Individuals with an income of \$20,000 to \$29,999 ( $M=5.72$ ,  $SD=2.36$ ) had significantly lower perceived financial well-being than individuals with an income of \$70,000 to \$79,999 or \$100,000+. Subjects with an income of \$30,000 to \$39,999 ( $M=5.34$ ,  $SD=2.31$ ) had significantly lower perceived financial well-being than subject with an income level of \$60,000 and above. Those with an income of \$100,000+ had significantly higher perceived financial well-being than those with an income level less than \$70,000. Studies by Sumarwan and Hira (1993) and Bae, Hanna, and Lindamood (1993) also found income to be significantly related to financial satisfaction. Martin (2007) found that more mistakes regarding personal finance decisions are made by low income households.

From these results, a generalization may be made about demographic variables and the relationship to perceived financial well-being. Being male, older age, without dependent children in the home, retired, and higher income have a positive relationship with perceived financial well-being as measured by the PFW scale score.

### **Delivery Methods**

Delivery method of financial information variables, as a group, were significantly related to perceived financial well-being. In the total sample block regression, delivery method variables in block two accounted for 3.1% of the variance in perceived financial well-being. Looking at H<sub>2</sub>: There is a relationship between delivery methods of financial information and perceived financial well-being, the hypothesis is accepted.

Conclusions were also drawn about each individual delivery method factor. Two individual delivery methods of financial information factors were found to have a significant negative impact on the variance in perceived financial well-being, internet ( $t = -1.999, p < 0.05$ ) and television ( $t = -2.658, p < 0.01$ ). Given this, television and internet may not be the most appropriate delivery methods of financial information. Martin (2007) found that financial education is most effective when delivered face-to-face.

Although the t-test score found internet to have a significant effect after holding all other variables in the model constant, there was not a significant difference in the total effect of the internet variable, change in F, between individuals who chose internet as a top three delivery method of financial information and individuals who did not choose internet as a top three delivery method of financial information.

There was a significant difference in the total effect of television on variance in perceived financial well-being. Individuals that selected television as a top three most used delivery method of financial information ( $M=6.09, SD=2.21$ ) had significantly lower perceived financial well-being than individuals that did not select television as a top three most used delivery method of financial information ( $M=6.61, SD=2.05$ ). Media was found to be the third most important source of learning financial information in the research by

Hogarth and Hilgert (2002), and the 2003 study by Hilgert, Hogarth, and Beverly found that “on demand” sources were preferred with media, brochures, and home videos being the top three preferred sources to get future financial information. Although media is a preferred source of financial information and the current data suggests television is the most used delivery method, given the current findings, television may not be the most appropriate delivery method of financial information. Richardson (1993) found that mass media methods were seldom identified as valuable in receiving specific information, and Martin (2007) found that financial education is most effective when delivered face-to-face.

Delivery methods of financial information were ranked by most used delivery method of financial information by placing the 11 separate factors in order from greatest frequency to lowest frequency for selection as a top three most used delivery method of financial information. In order of most used delivery method of financial information to least used delivery method of financial information they are: television, newspapers, internet, friends or relatives, radio, magazines, other delivery, books, financial advisor/planner, civic/religious leader, and broker. Hogarth and Hilgert (2002) found that personal experience was the most important source of learning, friends and family were second, and media third.

### **Informal and Formal Financial Education**

Sources of informal or formal financial education variables as a group did not have a significant relationship with the variance in perceived financial well-being. In the total sample block regression, sources of informal or formal financial education variables in block three accounted for 1.5% of the variance in perceived financial well-being, which was not a significant change in F. Furthermore, there were not any individual informal or formal financial education variables that were significant. Given this information, both  $H_6$ : There is

a relationship between sources of informal financial education and perceived financial well-being and H<sub>7</sub>: There is a relationship between sources of formal financial education and perceived financial well-being are rejected.

In the regression model containing financial well-being as the dependent variable and demographic factors, delivery methods, and the variable of having formal or informal financial education, as independent variables, there was not a significant difference in mean perceived financial well-being ( $F = 2.541$ ,  $p > 0.05$ ), combined between groups, for informal or formal financial education.

The total effect of this factor was also analyzed. In regards to H<sub>3</sub>: There is a significant difference in perceived financial well-being between individuals with informal financial education and individuals without informal financial education and H<sub>4</sub>: There is a significant difference in perceived financial well-being between individuals with formal financial education and individuals without formal financial education, both hypotheses were rejected. There was not a significant difference between individuals having neither informal nor formal financial education ( $M=6.06$ ,  $SD=2.31$ ) and individuals having only informal financial education ( $M=6.30$ ,  $SD=1.98$ ), and there was not a significant difference between individuals having neither informal nor formal financial education ( $M=6.06$ ,  $SD=2.31$ ) and individuals having only formal financial education ( $M=6.21$ ,  $SD=2.07$ ). In regards to H<sub>5</sub>: There is a significant difference in perceived financial well-being between individuals with informal financial education and individuals with formal financial education, the hypothesis is rejected. There was not a significant difference between individuals having only informal financial education ( $M=6.30$ ,  $SD=1.98$ ) and individuals having only formal financial education ( $M=6.21$ ,  $SD=2.07$ ). The research by Bernheim, Garrett, and Maki (2001) on the



impact of high school financial curriculum mandates indicates that mandates do significantly increase exposure to financial education, but current research does not indicate a significant difference in perceived financial well-being between those having formal financial education and those that do not.

However, individuals having neither informal nor formal financial education ( $M=6.06$ ,  $SD=2.31$ ) had significantly lower perceived financial well-being than individuals having both informal and formal financial education ( $M=6.67$ ,  $SD=2.15$ ). This may be supported by the research by Martin (2007) that found a positive connection between knowledge and personal finance behaviors. Hathaway and Khatiwada (2008) did not find conclusive evidence that financial education programs lead to increased financial knowledge and improved financial behavior, but the current finding may indicate a positive relationship between financial well-being and having both formal and informal financial education.

Informal sources of financial education were ranked by most influential source of informal financial education by placing the six separate factors in order from greatest frequency to lowest frequency for selection as a top three influential source of informal financial education: financial institution or financial planner, employer, other informal source, community-based organization, faith-based group, and cooperative extension.

Formal sources of financial education were also ranked by most influential source of formal financial education by placing the six separate factors in order from greatest frequency to lowest frequency for selection as a top three influential source of formal financial education: high school, bachelor's program, other formal source, associate program, community college, and graduate program.

### **Ranked Delivery Methods and Sources**

The sample (n=617) of respondents that ranked their responses to the questions regarding delivery methods of financial information, informal sources of financial education, and formal sources of financial education as first, second, and third choice were also analyzed by frequency. The percentage of individuals, in order from greatest to least, ranking the eleven delivery methods of financial information as their most used is as follows: television (34%), internet (19%), newspapers (18%), friends or relatives (9%), radio (5%), magazines (5%), other delivery (5%), financial advisor/planner (3%), books (2%), civic/religious leader (1%), and broker (0%). This trend is consistent with Hilgert, Hogarth, and Beverly (2003) in that people preferred to learn from sources that were “on demand.” However, though internet was one of the sources preferred less in the 2003 research by Hilgert, Hogarth, and Beverly, the current data indicated internet as the second most used delivery method of financial information.

The percentage of individuals, from greatest to least, that ranked the six informal sources of financial education as most influential was: financial institution or financial planner (60%), employer (21%), other informal source (9%), faith-based group (6%), community-based organization (3%), and cooperative extension (1%). The number of individuals, from greatest to least, that ranked the six formal sources of financial education as most influential was: bachelor’s program (38%), high school (26%), associate program (10%), other formal source (10%), graduate program (8%), and community college (8%).

### **Limitations of the Study**

The United States economy may have an effect on an individual's perception of financial well-being and has not been controlled for. Therefore, inferences about supporting research on financial well-being from previous years cannot accurately predict the current findings. As such, the current findings cannot accurately predict perceived financial well-being in the future.

This study specifically looked at the demographics of South Dakota residents. Although a large random sample and adequate response rate did help control for sampling error, a proportionate number of American Indian or Alaska Native individuals did not respond, and this population may be under-represented in the current study.

A related limitation is that a random sample of South Dakota residents cannot be directly applied to the United States population as a whole. More specifically, the demographic characteristics of South Dakota residents, especially related to race and ethnicity, are not representative of the demographic characteristics of the United States population.

When measuring perceived financial well-being, responses are self-reported. Therefore, it is assumed that subjects are truthful in their responses. However, subjects may not accurately report answers to questions concerning their financial condition, including the questions about delivery methods of financial information and sources of informal and formal financial education.

Differences may also exist within demographic groups that are analyzed as a whole. This study reports generalized findings of demographic groups, but perceived financial well-being varies between individuals within the group. For example, the perceived financial

well-being was reported for those selecting college as a source of formal financial education. However, perceived financial well-being may vary between the type of institution attended or the degree received.

### **Implications**

Given the limitations of the study, a few suggestions should be made. If a subsequent study were to be conducted in South Dakota, oversampling the American Indian or Alaska Native population to elicit a proportionate response rate is recommended. More specific definitions of individual factors of delivery methods of financial information and sources of informal or formal financial education are needed. It is suggested that a longitudinal study of perceived financial well-being be conducted on a national scale to get an accurate measure of variables related to financial well-being to control for economic conditions. Future research may consider including delivery methods of financial information in a conceptual model of financial well-being.

This research is significant to consumers, educators, counselors, and policy makers. Public policy on financial literacy and state and local efforts to educate consumers about important financial practices is important. This study shows that there may be a positive relationship between individuals receiving financial education in both the informal and formal setting and PFW scale scores. The delivery method used to deliver financial information is significantly related to financial well-being and should be considered. This study found that television is the most used source of financial information. However, television does not appear to be an effective delivery method, given the negative relationship with the PFW scale score.

This study may support the importance of informal financial education, as well as formal financial education. Educators focused on financial well-being in math, business, advertising, economics, financial planning, and family and consumer sciences should educate students on the current results suggesting that, being male, older age, without dependent children in the home, retired, and higher income may have a significant positive relationship with perceived financial well-being. Financial planners, counselors, psychologists, and extension educators can use the information to better serve their clients by targeting those groups of individuals that were found to have a significant negative relationship with perceived financial well-being: female, younger age, with dependent children in the home, working, or lower income.

Targeting financial education resources, as described, using appropriate delivery methods is especially true for South Dakota, to which these results are most appropriate.

## APPENDIX A. SOUTH DAKOTA AND USA QUICKFACTS

People QuickFacts	South Dakota	USA
Population, 2007 estimate	796,214	301,621,157
Population, percent change, April 1, 2000 to July 1, 2007	5.5%	7.2%
Population, 2000	754,844	281,421,906
Persons under 5 years old, percent, 2007	7.1%	6.9%
Persons under 18 years old, percent, 2007	24.7%	24.5%
Persons 65 years old and over, percent, 2007	14.3%	12.6%
Female persons, percent, 2007	50.2%	50.7%
White persons, percent, 2007 (a)	88.4%	80.0%
Black persons, percent, 2007 (a)	1.1%	12.8%
American Indian and Alaska Native persons, percent, 2007 (a)	8.3%	1.0%
Asian persons, percent, 2007 (a)	0.8%	4.4%
Native Hawaiian and Other Pacific Islander, percent, 2007 (a)	0.1%	0.2%
Persons reporting two or more races, percent, 2007	1.4%	1.6%
Persons of Hispanic or Latino origin, percent, 2007 (b)	2.3%	15.1%
White persons not Hispanic, percent, 2007	86.4%	66.0%
Living in same house in 1995 and 2000, pct 5 yrs old & over	55.7%	54.1%
Foreign born persons, percent, 2000	1.8%	11.1%
Language other than English spoken at home, pct age 5+, 2000	6.5%	17.9%
High school graduates, percent of persons age 25+, 2000	84.6%	80.4%
Bachelor's degree or higher, pct of persons age 25+, 2000	21.5%	24.4%
Persons with a disability, age 5+, 2000	114,619	49,746,248
Mean travel time to work (minutes), workers age 16+, 2000	16.6	25.5
Housing units, 2007	357,240	127,901,934
Homeownership rate, 2000	68.2%	66.2%
Housing units in multi-unit structures, percent, 2000	18.9%	26.4%
Median value of owner-occupied housing units, 2000	\$79,600	\$119,600
Households, 2000	290,245	105,480,101
Persons per household, 2000	2.5	2.59
Median household income, 2007	\$43,507	\$50,740
Per capita money income, 1999	\$17,562	\$21,587
Persons below poverty, percent, 2007	13.2%	13.0%
Business QuickFacts	South Dakota	USA
Private nonfarm establishments, 2006	25,482	7,601,160
Private nonfarm employment, 2006	325,105	119,917,165

Private nonfarm employment, percent change 2000-2006	6.0%	5.1%
Nonemployer establishments, 2006	56,015	20,768,555
Total number of firms, 2002	69,536	22,974,655
Black-owned firms, percent, 2002	0.2%	5.2%
American Indian and Alaska Native owned firms, percent, 2002	1.9%	0.9%
Asian-owned firms, percent, 2002	0.4%	4.8%
Native Hawaiian and Other Pacific Islander owned firms, percent, 2002	0.0%	0.1%
Hispanic-owned firms, percent, 2002	0.5%	6.8%
Women-owned firms, percent, 2002	22.4%	28.2%
Manufacturers shipments, 2002 (\$1000)	10,710,187	3,916,136,712
Wholesale trade sales, 2002 (\$1000)	7,845,096	4,634,755,112
Retail sales, 2002 (\$1000)	9,601,175	3,056,421,997
Retail sales per capita, 2002	\$12,626	\$10,615
Accommodation and foodservices sales, 2002 (\$1000)	1,226,459	449,498,718
Building permits, 2007	5,112	1,398,414
Federal spending, 2007 (\$1000)	8,280,262	2,536,629,405
Geography QuickFacts	South Dakota	USA
Land area, 2000 (square miles)	75,884.64	3,537,438.44
Persons per square mile, 2000	9.9	79.6
FIPS Code	46	

(a) Includes persons reporting only one race.

(b) Hispanics may be of any race, so also are included in applicable race categories.

FN: Footnote on this item for this area in place of data

NA: Not available

D: Suppressed to avoid disclosure of confidential information

X: Not applicable

S: Suppressed; does not meet publication standards

Z: Value greater than zero but less than half unit of measure shown

F: Fewer than 100 firms

Source: US Census Bureau State & County QuickFacts

## APPENDIX B. QUESTIONNAIRE

### Section 1: Customer Service

Please give the best response for each item by placing an X in the box or writing on the line.

1. **When making a purchase in a retail store do you expect customer service?**  
☐ Yes    ☐ No
2. **If you expect customer service, does the amount of money you spend on the product affect the level of customer service you should receive?**  
☐ Yes    ☐ No
3. **What type of product do you purchase that you think requires customer service? Check all that apply.**  
☐ Clothing    ☐ Electronics    ☐ Household items  
☐ Furniture    ☐ Appliances    ☐ Other:
4. **At what dollar amount would you expect to receive customer service with your purchase?**  
☐ less than \$100    ☐ \$100 to \$499    ☐ \$500 to \$999  
☐ \$1000+    ☐ all purchases
5. **How often do you purchase each product category listed below?**  

Clothing	<input type="checkbox"/> Weekly	<input type="checkbox"/> Monthly	<input type="checkbox"/> Every 6 months	<input type="checkbox"/> Every year	<input type="checkbox"/> Other:
Electronics	<input type="checkbox"/> Weekly	<input type="checkbox"/> Monthly	<input type="checkbox"/> Every 6 months	<input type="checkbox"/> Every year	<input type="checkbox"/> Other:
Household items	<input type="checkbox"/> Weekly	<input type="checkbox"/> Monthly	<input type="checkbox"/> Every 6 months	<input type="checkbox"/> Every year	<input type="checkbox"/> Other: _____
Furniture	<input type="checkbox"/> Weekly	<input type="checkbox"/> Monthly	<input type="checkbox"/> Every 6 months	<input type="checkbox"/> Every year	<input type="checkbox"/> Other: _____
Appliances	<input type="checkbox"/> Weekly	<input type="checkbox"/> Monthly	<input type="checkbox"/> Every 6 months	<input type="checkbox"/> Every year	<input type="checkbox"/> Other: _____
Other (from #2)	<input type="checkbox"/> Weekly	<input type="checkbox"/> Monthly	<input type="checkbox"/> Every 6 months	<input type="checkbox"/> Every year	<input type="checkbox"/> Other:
6. **How much do you spend per purchase on each product category listed below?**  

Clothing	<input type="checkbox"/> less than \$100	<input type="checkbox"/> \$100-249	<input type="checkbox"/> \$250-499	<input type="checkbox"/> \$500-999	<input type="checkbox"/> \$1000+
Electronics	<input type="checkbox"/> less than \$100	<input type="checkbox"/> \$100-249	<input type="checkbox"/> \$250-499	<input type="checkbox"/> \$500-999	<input type="checkbox"/> \$1000+
Household items	<input type="checkbox"/> less than \$100	<input type="checkbox"/> \$100-249	<input type="checkbox"/> \$250-499	<input type="checkbox"/> \$500-999	<input type="checkbox"/> \$1000+
Furniture	<input type="checkbox"/> less than \$100	<input type="checkbox"/> \$100-249	<input type="checkbox"/> \$250-499	<input type="checkbox"/> \$500-999	<input type="checkbox"/> \$1000+
Appliances	<input type="checkbox"/> less than \$100	<input type="checkbox"/> \$100-249	<input type="checkbox"/> \$250-499	<input type="checkbox"/> \$500-999	<input type="checkbox"/> \$1000+
Other (from #2)	<input type="checkbox"/> less than \$100	<input type="checkbox"/> \$100-249	<input type="checkbox"/> \$250-499	<input type="checkbox"/> \$500-999	<input type="checkbox"/> \$1000+

### Section 2: Financial Well-Being

InCharge Financial Distress/Financial Well-Being Scale©

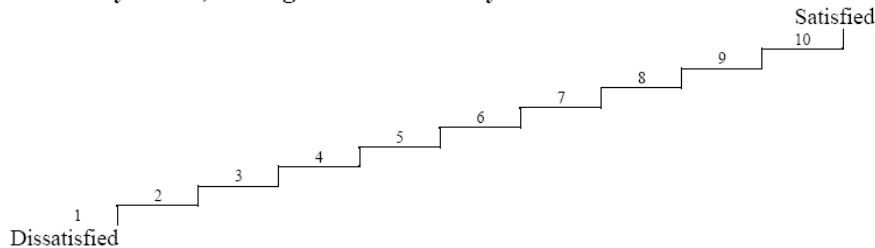
Circle or check the responses that are *most appropriate* for your situation.

1. **What do you feel is the level of your financial stress today?**

1	2	3	4	5	6	7	8	9	10
Overwhelming Stress		High Stress		Low Stress		No Stress at All			



2. On the stair steps below, mark (with a circle) how satisfied you are with your present financial situation. The “1” at the bottom of the steps represents complete dissatisfaction. The “10” at the top of the stair steps represents complete satisfaction. The more dissatisfied you are, the lower the number you should circle. The more satisfied you are, the higher the number you should circle.



3. How do you feel about your current financial situation?

1	2	3	4	5	6	7	8	9	10
Feel Overwhelmed			Sometimes Feel Worried			Not Worried			Feel Comfortable

4. How often do you worry about being able to meet normal monthly living expenses?

1	2	3	4	5	6	7	8	9	10
Worry All the Time			Sometimes Worry			Rarely Worry			Never Worry

5. How confident are you that you could find the money to pay for a financial emergency that costs about \$1000?

1	2	3	4	5	6	7	8	9	10
No Confidence			Little Confidence			Some Confidence			High Confidence

6. How often does this happen to you? You want to go out to eat, go to a movie or do something else and you don't go because you can't afford to.

1	2	3	4	5	6	7	8	9	10
All the Time			Sometimes			Rarely			Never

7. How frequently do you find yourself just getting by financially and living paycheck to paycheck?

1	2	3	4	5	6	7	8	9	10
All the Time			Sometimes			Rarely			Never

8. How stressed do you feel about your personal finances in general?

1	2	3	4	5	6	7	8	9	10
Overwhelming Stress			High Stress			Low Stress			No Stress at All

**Section 3: Demographics**

Please give the best response for each item by placing an X in the box or writing on the line.

**1. What is your gender?**

☐ Male ☐ Female

**2. What is your current age?****3. What is your current marital status?**

☐ Never married ☐ Living with partner ☐ Widowed ☐ Divorced/separated ☐ Married

**4. What is the highest level of education you have completed?**

☐ Elementary (1-8) ☐ High school/GED ☐ Associate degree ☐ Some college  
☐ Bachelor's degree ☐ Master's/professional degree ☐ Doctorate degree ☐ Other: \_\_\_\_\_

**5. Please select the racial category or categories with which you most closely identify. Check as many as apply.**

☐ American Indian or Alaska Native ☐ Asian ☐ Black or African American  
☐ Native Hawaiian or Pacific Islander ☐ White ☐ Other: \_\_\_\_\_

**6. What is your ethnicity?**

☐ Hispanic or Latino (of any race) ☐ Not Hispanic or Latino

**7. Is this house, apartment, or mobile home:**

☐ owned by you or someone in this household with a mortgage or loan?  
☐ owned by you or someone in this household free and clear without a mortgage or loan?  
☐ rented?  
☐ occupied without payment of rent?

**8. How many dependent children currently live in your home?**

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6+

**9. What is your current employment status?**

☐ Unemployed ☐ Self Employed ☐ Employed ☐ Retired ☐ Other: \_\_\_\_\_

**10. Where are you currently living?**

☐ Rural Area (less than 2,500 persons) ☐ Urban Area (2,500 persons or more)

**11. What is your current annual household income before taxes?**

☐ less than \$10,000 ☐ \$10,000 to \$19,999 ☐ \$20,000 to \$29,999 ☐ \$30,000 to \$39,999  
☐ \$40,000 to \$49,999 ☐ \$50,000 to \$59,999 ☐ \$60,000 to \$69,999 ☐ \$70,000 to \$79,999  
☐ \$80,000 to \$89,999 ☐ \$90,000 to \$99,999 ☐ \$100,000 +

**Section 4: Financial Education**

Please give the best response for each item by placing an X in the box or writing on the line.

**1. Please rank your top three delivery methods of financial information by placing the numbers 1 through 3 in the space provided, 1 being the most used source.**

\_\_\_ Magazines \_\_\_ Books \_\_\_ Civic/religious leader \_\_\_ Newspapers \_\_\_ Internet  
 \_\_\_ Television \_\_\_ Radio \_\_\_ Friends or Relatives \_\_\_ Other: \_\_\_\_\_

2. Have you had any informal financial education? ☐ Yes ☐ No

If yes, please rank your top three sources of informal financial education by placing the numbers 1 through 3 in the space provided, 1 being the most influential source.

\_\_Employer                      \_\_Financial institution or financial planner    \_\_Cooperative Extension  
 \_\_Faith-based group    \_\_Community-based organization                      \_\_Other:

3. Have you had any formal financial education? ☐ Yes ☐ No

If yes, please rank your top three sources of formal financial education by placing the numbers 1 through 3 in the space provided, 1 being the most influential source.

\_\_High school                      \_\_Community college                      \_\_Associate program  
 \_\_Bachelor's program                      \_\_Graduate program                      \_\_Other: \_\_\_\_\_

### **Section 5: Managing Customer Service**

Please give the best response for each item by placing an X in the box or writing your response.

1. Have you ever been a leader, manager, supervisor, or owner of a hospitality organization that provides customer service?  
☐ Yes    ☐ No – **Stop here.** Thank you for participating in our survey!
2. Have you ever attempted to improve customer service in your hospitality organization?  
☐ Yes    ☐ No – Go to question 6.
3. How did you attempt to improve customer service?

4. Did your efforts to improve customer service achieve the desired results?  
☐ Yes    ☐ No
5. Please provide your comments on why or why not the desired results were achieved.

6. Would you like to improve the customer service you currently provide your guests?  
☐ Yes    ☐ No
7. If yes, would you consider participating in a possible study and/or process improvement initiative to improve customer service in your organization?  
☐ Yes    ☐ No

If yes, please contact: Bruce Dickinson at (605) 688-4041 or [bruce.dickinson@sdstate.edu](mailto:bruce.dickinson@sdstate.edu)  
 Thank you for participating in our survey!

## APPENDIX C. PFW SCALE PERMISSION LETTER

### Re: PFEEF PFW Scale Permission Form

Tom Garman [ethomasgarman@yahoo.com]

Sent: Tuesday, July 15, 2008 1:58 PM

To: Morrison, Kathryn

---

Hi Kathryn

Wonderful dissertation idea! We'll send you the signed permission form.

Effective in August PFEEF can collect PFW data online. I'll send you the beta form in a minute.

Best of luck,

Tom

E. Thomas Garman, President Personal Finance Employee Education Foundation Professor Emeritus and Fellow, Virginia Tech University 9402 SE 174th Loop, Summerfield, FL 34491  
Tele/Fax: 352-347-1345 E-mail: ethomasgarman@yahoo.com Web: <http://www.PersonalFinanceFoundation.org>

Permission Form (online) to Use the Personal Financial Well-Being (PFW) Scale:

Name: Kathryn J. Morrison  
Job Title: Instructor of Consumer Affairs  
Affiliation: South Dakota State University  
Address: 5849 W King Arthur Dr  
Sioux Falls, SD 57106  
Telephone/Fax: 605-695-2395  
Email: [kathryn.morrison@sdstate.edu](mailto:kathryn.morrison@sdstate.edu)  
Website: N/A

First Planned Use: It would be used as the survey instrument in my dissertation to quantitatively study the perceived financial well-being of adults in South Dakota, specifically the Generation X adult population ages 25-44, to determine if there is a need for financial education.

Second Planned Use: N/A

Third Planned Use: N/A

Signature: Kathryn J. Morrison

Date: 7/15/2008

Signature:

Date:

**APPENDIX D. QUESTIONNAIRE SUPPLEMENTS****Prenotice Postcard**

October 2008

In two weeks you will receive in the mail a request to fill out a questionnaire for an important research project being conducted by South Dakota State University.

I am writing in advance because we have found many people like to know ahead of time that they will be contacted. The study is an important one that will help researchers in South Dakota understand the financial well-being of South Dakota residents.

Thank you for your time and consideration. It's only with the generous help of people like you that our research can be successful.

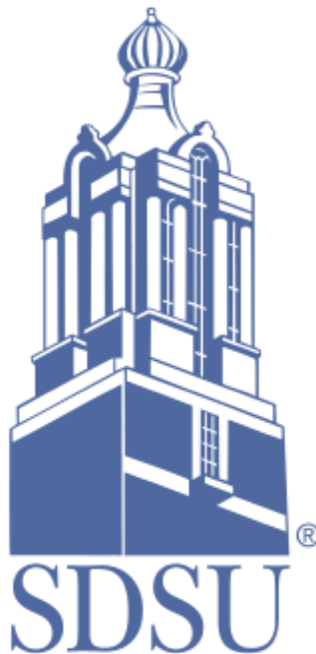
Sincerely,



Kathryn Morrison  
Instructor  
Design, Merchandising & Consumer Sciences  
South Dakota State University  
SDSU Brookings, SD 57007

South Dakota State University  
Design, Merchandising &  
Consumer Sciences  
SNF 229, Box 2275A  
Brookings, SD 57007

Non-Profit  
US Postage PAID  
Brookings SD  
Permit 24



Return Envelope

Design, Merchandising, and Consumer Sciences  
Attn: Kathryn Morrison  
Box 2275A  
Brookings, SD 57007-0496  
Index: 34H191 Fund: 328100

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NECESSARY IF  
MAILED IN THE  
UNITED STATES

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FIRST-CLASS MAIL PERMIT NO. 8 BROOKINGS SD  
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SOUTH DAKOTA STATE UNIVERSITY  
PO BOX 505  
BROOKINGS SD 57006-9981

## Reminder Postcard

<p>November 2008</p> <p>Last week a questionnaire from South Dakota State University was mailed to you. You were selected at random, as a South Dakota resident, to answer questions about consumption behavior, customer service, customer service management, and financial well-being.</p> <p>If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If not, please do so today. We are especially grateful for your help so that we can begin to understand the important financial and consumer issues facing adults in South Dakota today.</p> <p>If you did not receive a questionnaire, or if it was misplaced, please call 605-688-5835 or email <a href="mailto:Kathryn.Morrison@sdstate.edu">Kathryn.Morrison@sdstate.edu</a> and we will get another one in the mail to you today.</p> <p>Sincerely,</p> <p><i>Kathryn J. Morrison</i></p> <p>Kathryn Morrison South Dakota State University Brookings, SD 57007</p>	<p>South Dakota State University Design, Merchandising &amp; Consumer Sciences SNF 229, Box 2275A Brookings, SD 57007</p>	<p>Non-Profit US Postage PAID Brookings SD Permit 24</p>
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## APPENDIX E. COVER LETTER



College of Family and Consumer Sciences

Design, Merchandising, and  
Consumer Sciences Department  
NFA 228, Box 2275A  
South Dakota State University  
Brookings, SD 57007-0496  
Phone: 605-688-5196  
Fax: 605-688-5578

October 30, 2008

South Dakota Resident:

This is a request for your participation in a survey being conducted by South Dakota State University. This brief questionnaire concerns the consumer behavior of adults living in South Dakota.

You have been selected at random, as a South Dakota resident, to answer questions about consumption behavior, customer service, customer service management, and financial well-being. Results from this survey will help educators in South Dakota understand the important financial and consumer issues facing adults in our state today.

You are invited to participate in the study by completing the attached questionnaire, inserting it in the provided postage paid envelope, and placing it in U.S. postal mail. Your participation will take approximately 10 minutes and is completely voluntary. You may omit any question you do not feel comfortable answering. All information is strictly confidential, and we ask that you do not place your name or return address on the survey or the return envelope. This way, you will never be connected to your answers in any way. A response before **November 26** would be greatly appreciated.

Your consent to participate is implied by the return of the completed questionnaire. Please keep this letter for your information. If you have any questions about your participation in this study, you may contact Kathryn Morrison, Instructor, Design, Merchandising, and Consumer Sciences at 605-688-5835 or Kathryn.Morrison@sdstate.edu, Patricia Swanson, Ph.D. at 515-294-2731 or pswanson@iastate.edu, or Dr. Debra Spear, Chairperson Human Subject Committee at 605-688-6578 or Debra\_Spear@sdstate.edu.

We hope you will take the time to participate in this important study. Thank you for your time and cooperation.

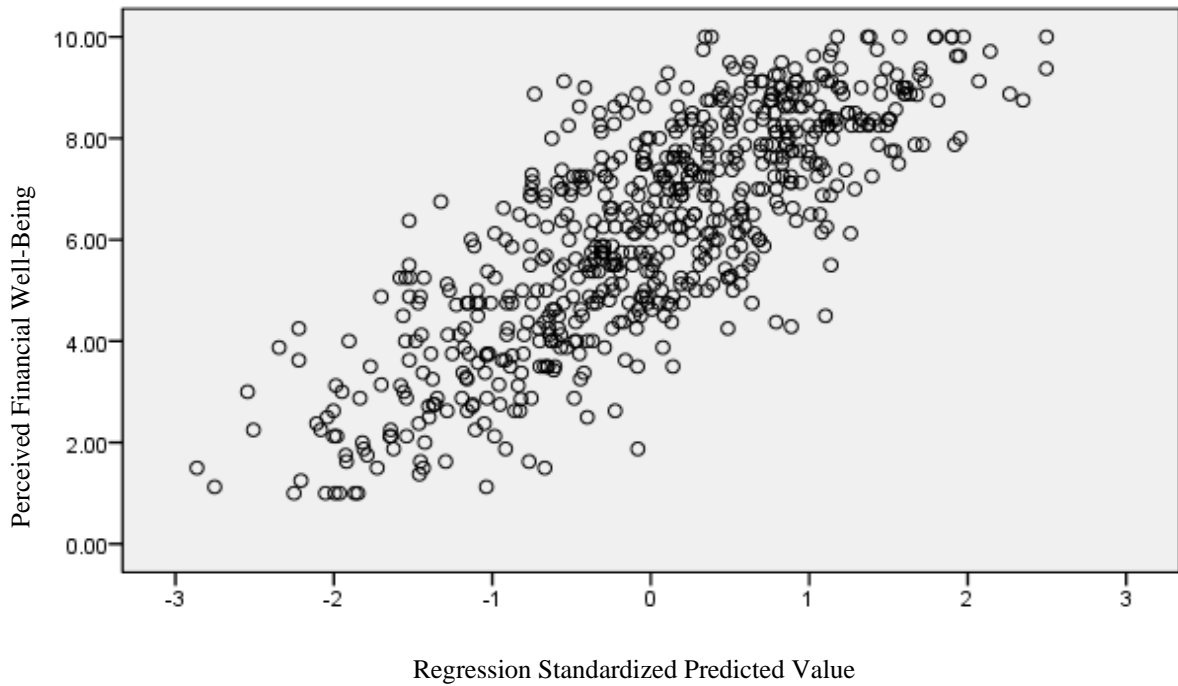
Sincerely,

Kathryn Morrison, M.S.  
Instructor  
Design, Merchandising, and Consumer Sciences  
South Dakota State University



**APPENDIX F. BLOCK REGRESSION MODEL ASSUMPTION TESTS**

*Figure F.1.* Regression standardized predicted value plot for block regression model (n=651).



*Figure F.2.* Regression standardized residual plot for block regression model (n=651).

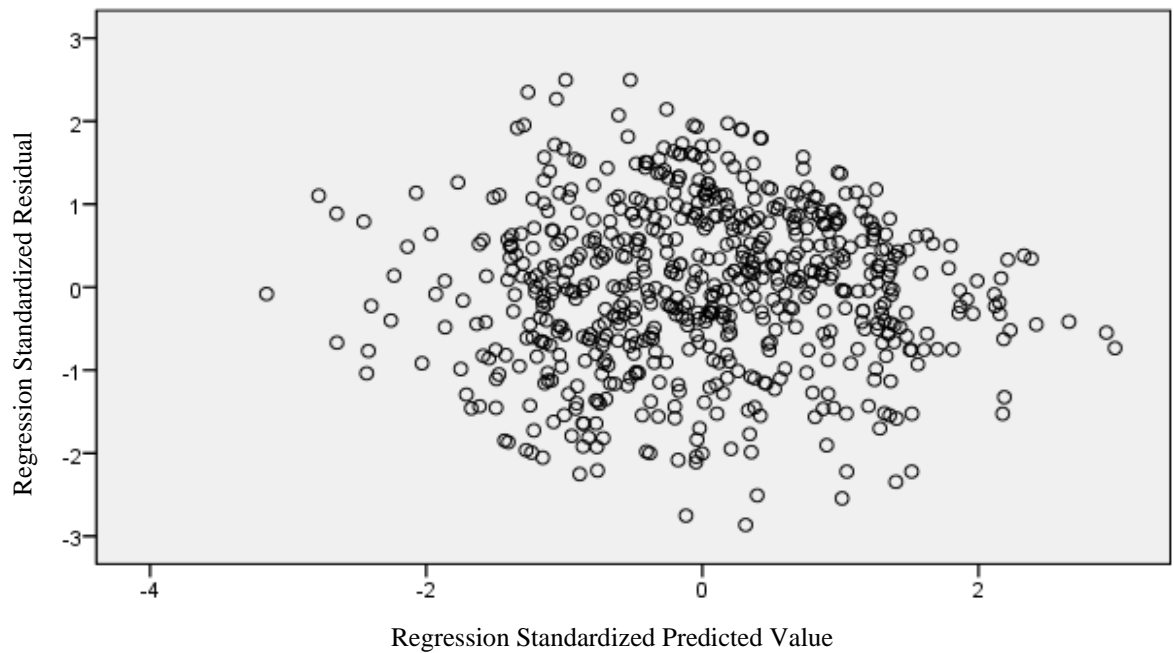


Figure F.3. Regression standardized residual histogram for block regression model (n=651).

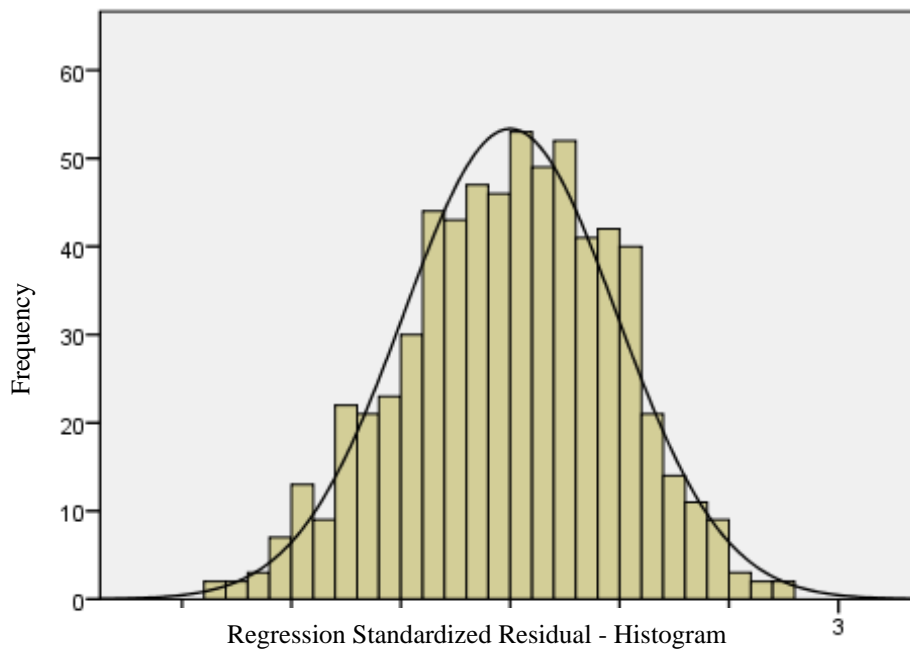
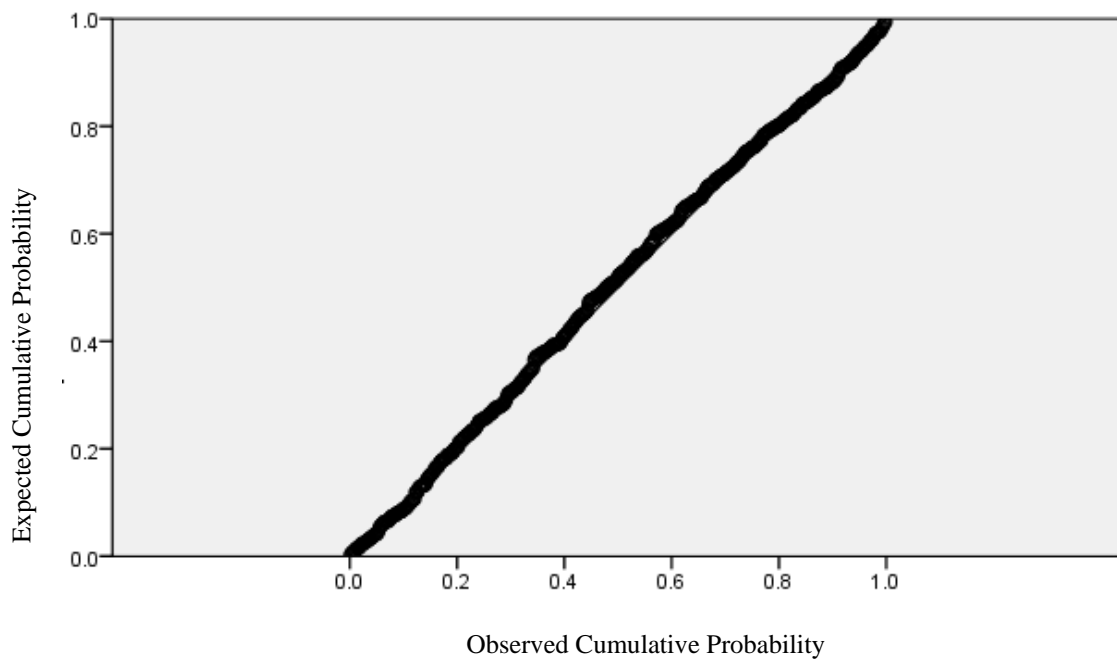


Figure 4.5. Regression standardized residual normal P-P plot for block regression model (n=651).



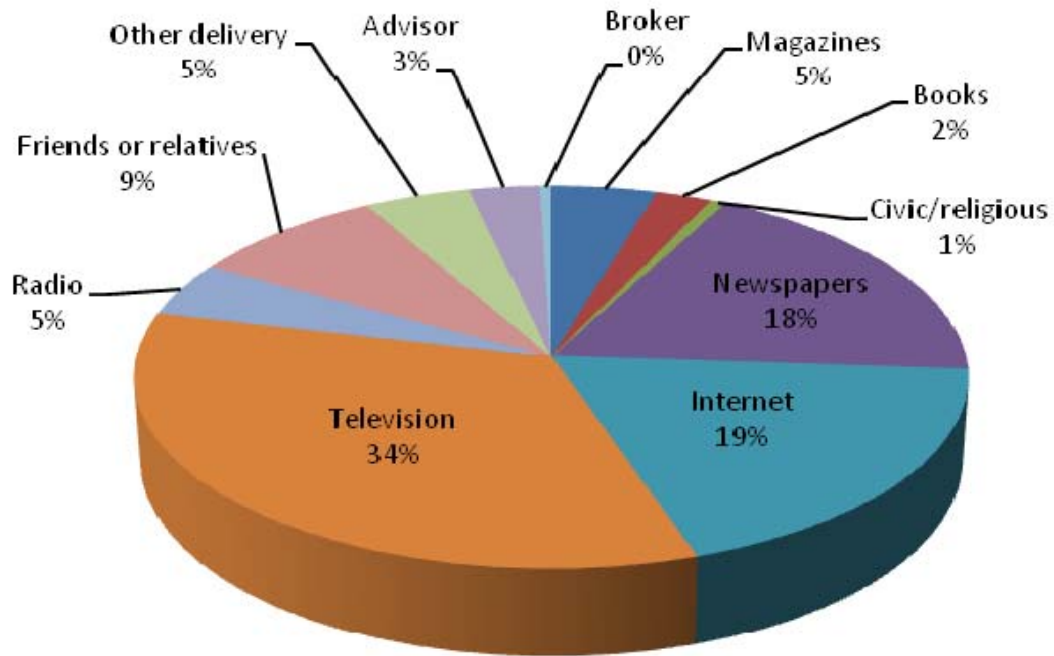
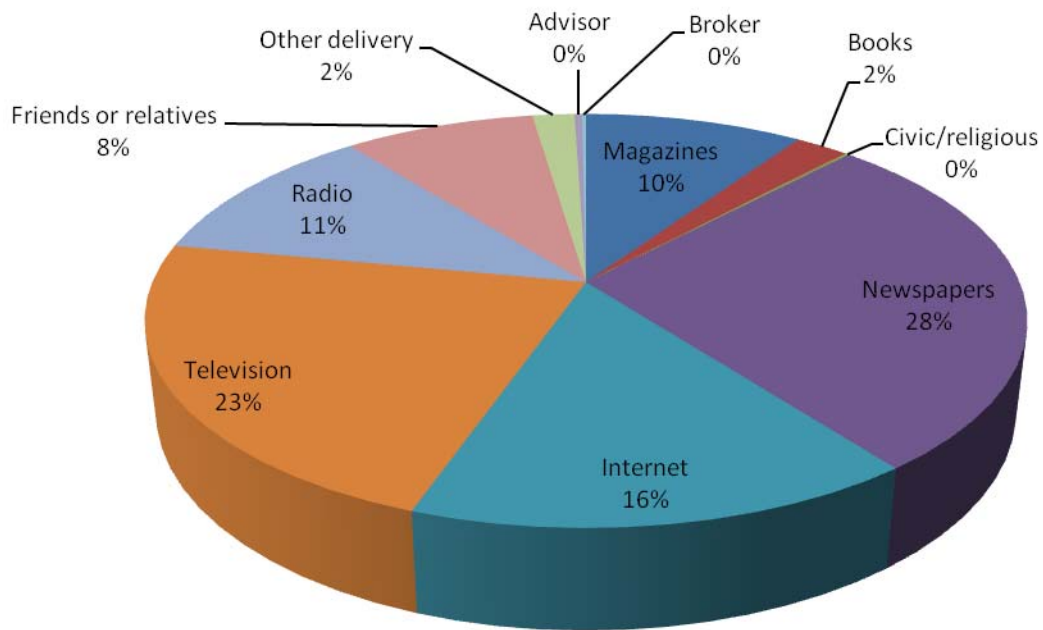
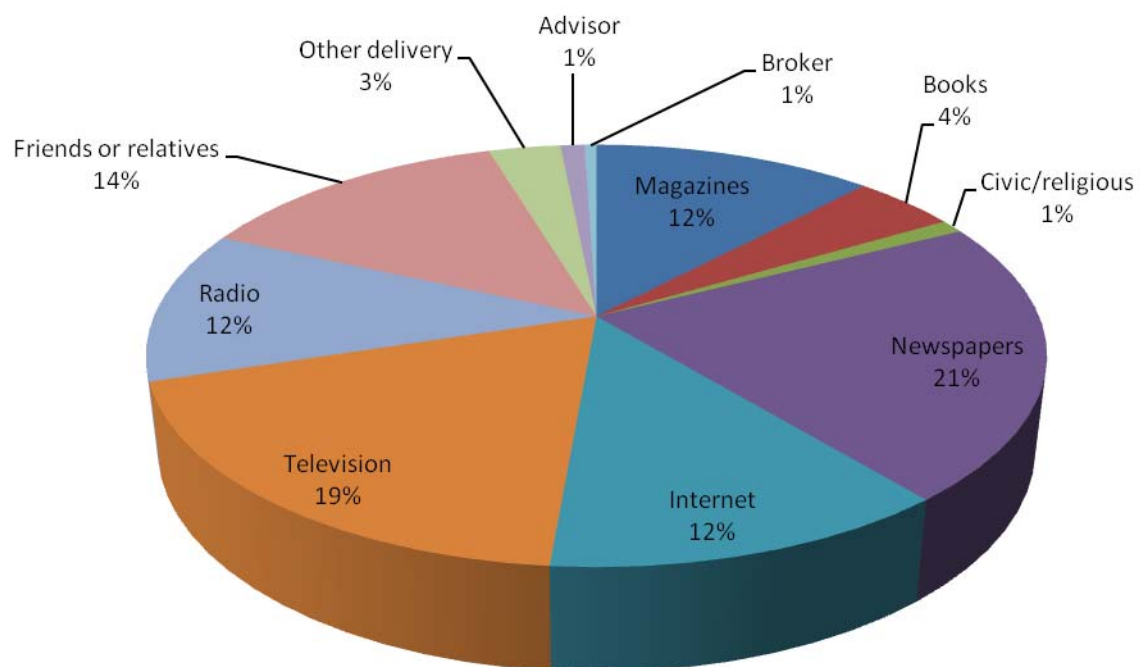
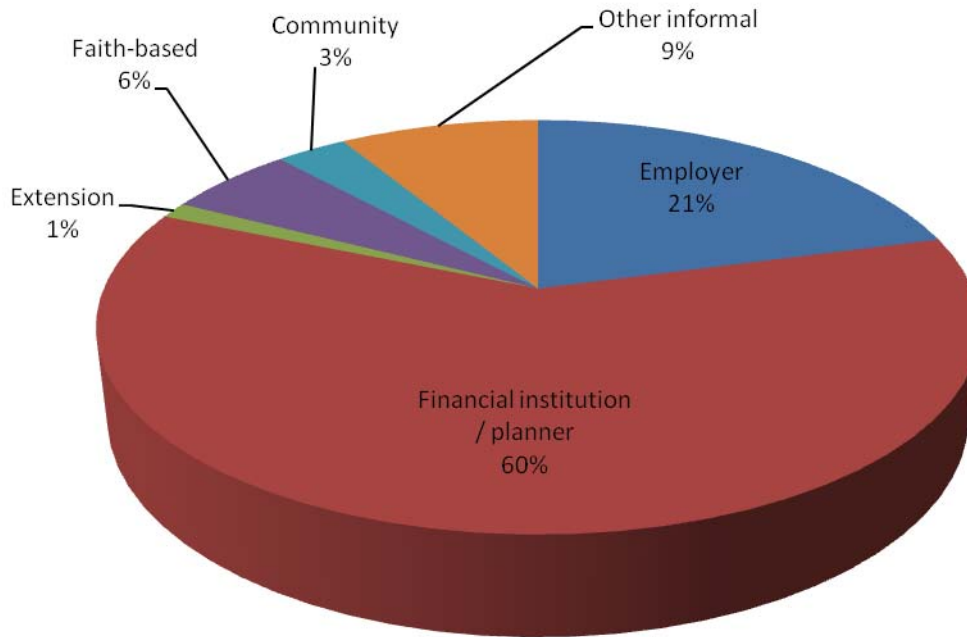
**APPENDIX G. RANKED DELIVERY METHODS***Figure G1.* Delivery methods of financial information ranked 1 (n=617).*Figure G2.* Delivery methods of financial information ranked 2 (n=617).

Figure G3. Delivery methods of financial information ranked 3 (n=617).



**APPENDIX H. RANKED INFORMAL SOURCES**

*Figure H1.* Informal sources of financial education ranked 1 (n=617).



*Figure H2.* Informal sources of financial education ranked 2 (n=617).

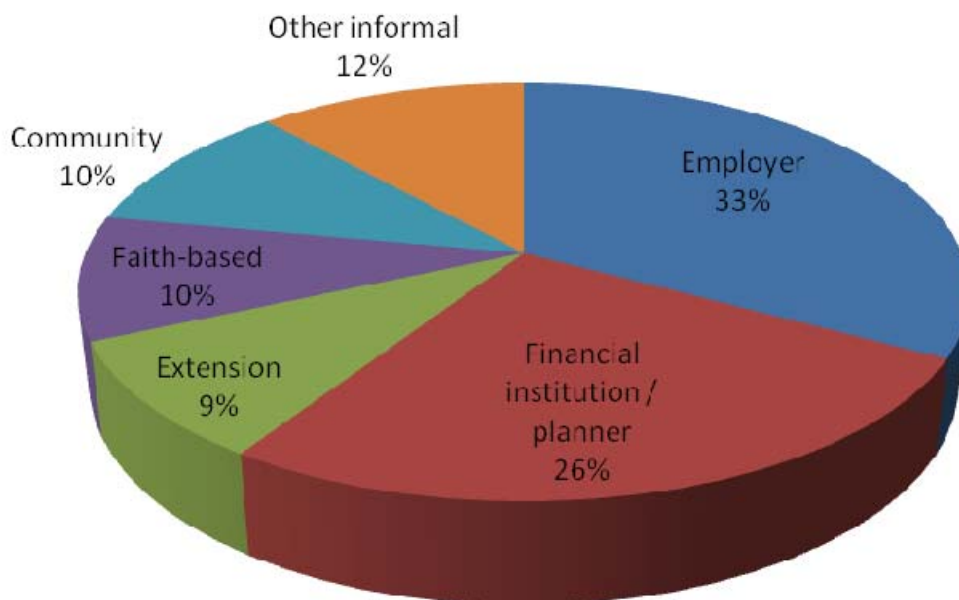
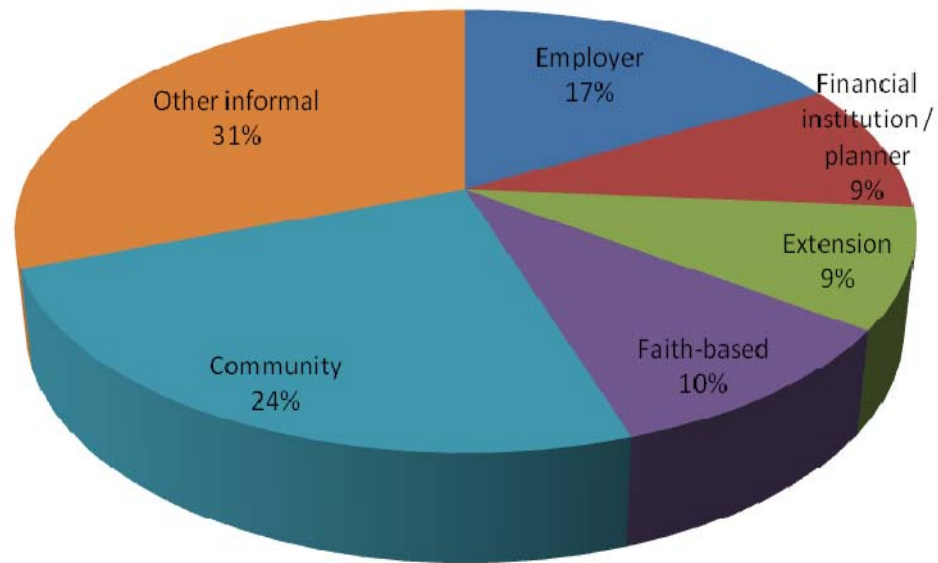
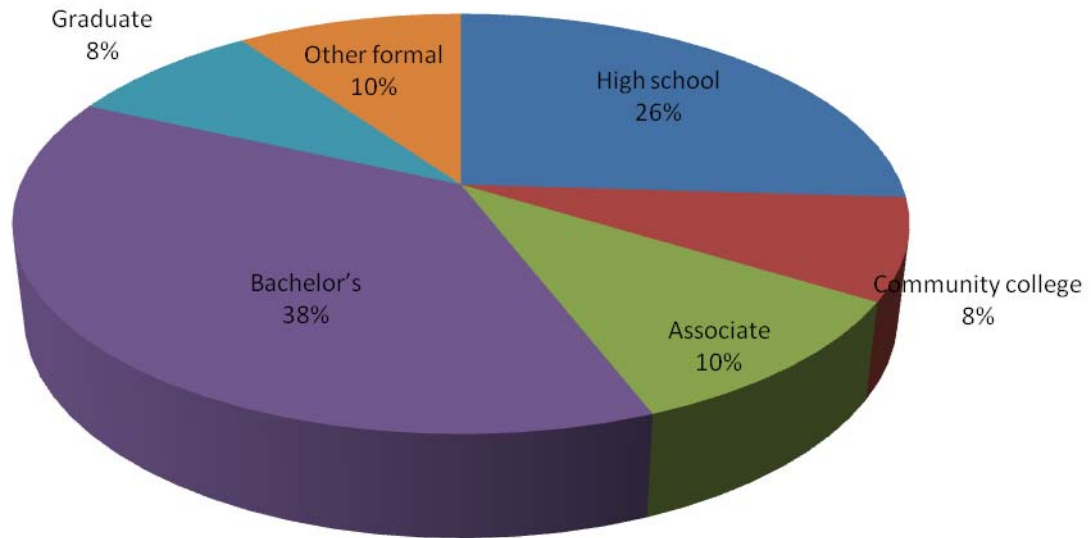


Figure H3. Informal sources of financial education ranked 3 (n=617).



**APPENDIX I. RANKED FORMAL SOURCES**

*Figure 11.* Formal sources of financial education ranked 1 (n=617).



*Figure 12.* Formal sources of financial education ranked 2 (n=617).

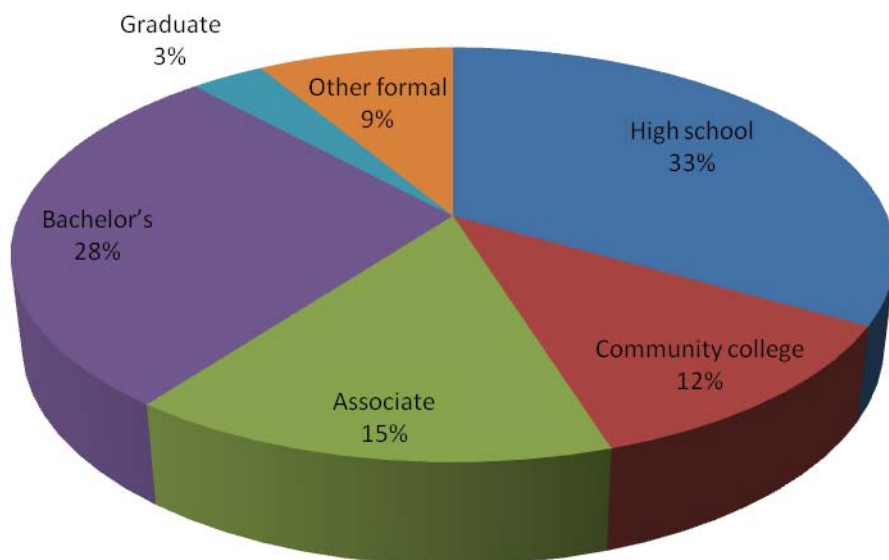
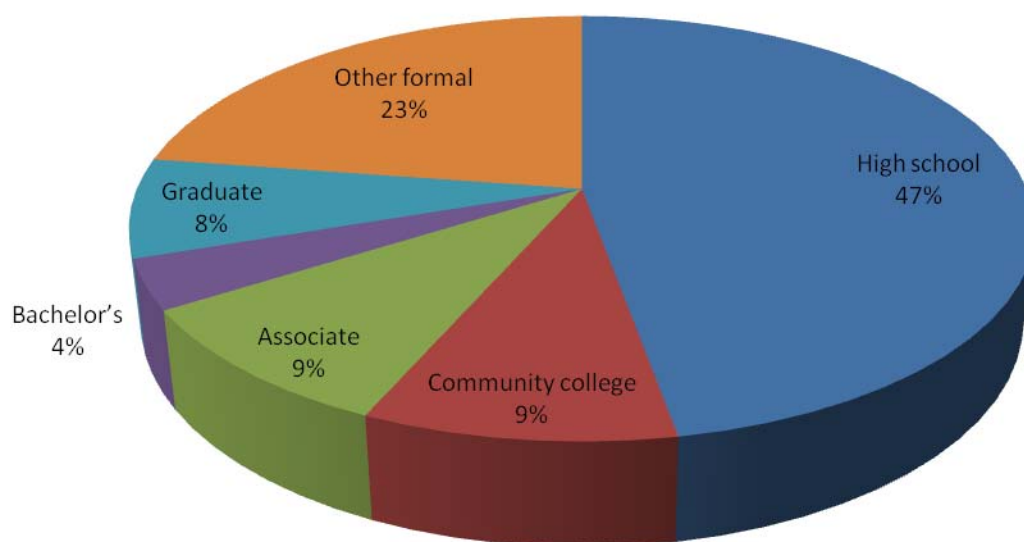


Figure I3. Formal sources of financial education ranked 3 (n=617).





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## **ACKNOWLEDGEMENTS**

I am very grateful for all of the wonderful people that supported me through my doctoral program. Thank you to my co-major professors, Dr. Patricia Swanson and Dr. Robert Bosselman, for the many hours they spent reviewing my research. I would not have made it to this point without your support and guidance. Dr. Bosselman, thank you for your constructive feedback and keeping me on track toward graduation. Dr. Swanson, thank you for your immense knowledge and providing such a wonderful educational opportunity through your FFP courses.

I feel blessed to have such a wonderful committee. Dr. Laurie Nichols, thank you for being such an inspirational mentor and teacher. I cannot even begin to express what your assistance and guidance throughout my entire educational journey over the last decade has meant to me. I have the utmost respect for you both personally and professionally and look forward to the opportunity to continue to learn from you. Dr. Penny Ralston, thank you for joining my committee. I have learned so much from you about leadership, both formally in the classroom and informally by your example. Your perspective has added great value to my experience in this program. Dr. Cynthia Fletcher, thank you for your guidance and insight. I never would have found my research focus if it was not for your advice and assistance. Your feedback has directly contributed to my success.

I am eternally grateful to my family, most of all, my husband Jeremy and my son Everett. The time they have given and the sacrifices they have made for me can never be repaid. A special thank you to my parents, Gordon and Lila, and my in-laws, Butch and Jean, for their constant encouragement. Thank you to my friends and family for their support

and understanding, especially during my absences from many special occasions throughout my graduate work.

Finally, I give thanks to God for guiding me down this path and seeing me through the bumps in the road!