Factors Associated with Financial Ratios and Financial Well-Being of Hispanic Households: A Comparison With White Households

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Using data from the 2016 Survey of Consumer Finances (SCF) and the Family Life Cycle (FLC) and Human Capital Theory (HCT) as a framework, this study examined if factors related to the likelihood of financial ratio adequacy and financial well-being differ for Hispanic and non-Hispanic White households. Hispanics' comprehensive financial well-being was assessed with three ratios: Liquidity, solvency, and investments/assets. Results of logistic regressions with 612 Hispanic and 4,481 non-Hispanic headed households show that FLC and HCT factors are associated with financial ratios differently between two race/ethnicity groups. For Hispanic households, age is positively related to adequate investment/assets ratio and financial well-being; education is positively related to adequate investment/assets but negatively related to adequate solvency. Implications for practitioners working with Hispanics are discussed.

Keywords: financial ratios, financial well-being, Hispanic households, SCF

Hispanics (also known as Latinos) are expected to represent 29% of the U.S. population by 2060 (Colby & Ortman, 2014), making them a priority when it comes to understanding the financial practices and financial well-being of Americans (Watchravesringkan, 2008). The limited research about this important ethnic group has found that Hispanics are financially vulnerable and have an overall different financial behavior than non-Hispanic Whites (Fisher & Hsu, 2012). For instance, Hispanics have twice as much debt (Boshara et al., 2015), tend to accumulate less wealth (Taylor, et al., 2011), are less likely to: Be financially literate (Lusardi & Mitchell, 2007), seek financial advice (Hanna, 2011), have checking accounts (Lusardi, 2005), have adequate emergency funds (Bhargava & Lown, 2006), and hold high return investments (Shin & Hanna, 2015). Furthermore, the models of saving that are appropriate for US households in general may not be suitable for Hispanics (Fisher & Hsu, 2012). For example, factors that explain credit card use of White households do not explain credit card use of Hispanics (Fisher, 2016).

These findings highlight differences in Hispanics' financial behavior but do not provide information about their comprehensive, objective financial well-being. Financial well-being of non-Hispanic White households has been measured using at least three ratios: Liquidity, investment/assets, and solvency ratio (Baek & DeVaney, 2004; Lytton et al.,1991). These ratios, among others, have been suggested as useful tools for financial counselors and planners because they provide a quantitative measure of financial well-being and a prescriptive guideline that may encourage improvement in financial behavior (Grable et al., 2019; Greninger, et al., 1996; Harness, et al., 2008; Lytton et al., 1991).

There is, however, limited information about which factors are related to adequate ratios among Hispanics and how they are different from those of non-Hispanic Whites.

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This study addresses this gap by investigating if the factors related to adequate financial ratios and financial well-being differ for Hispanic and non-Hispanic White households. The results of this study provide financial counselors and educators with information to assist their Hispanic clients to become financially secure.

Review of Literature and Hypotheses

Hispanics

The term "Hispanic" has been used since 1977 for Americans who trace their origins to Spanish-speaking countries (Passel & Taylor, 2009). It has been used as an ethnic category and therefore individuals of Hispanic origin may be of any race (Watchravesringkan, 2008). The term "Latino" was incorporated on the census form in 2000, when the category evolved to include Spanish/Hispanic/Latino origin (Guzman, 2001). Survey results of Hispanics showed that 50% had no preference for either term, however, Hispanic was preferred twice as much over Latino among those who had a preference (Lopez, 2013). Therefore, the terms Hispanic or Latino are used interchangeably in this article.

The countries of origin of Hispanics make them a heterogenous group. They share a common language but vary considerably in terms of linguistic elements, cultures, and values (Watchravesringkan, 2008). Even if classified by country of origin, Hispanics are a heterogenous group because of the number of years they have been present in the United States and their varying degrees of acculturation (Ogden, et al., 2004; Porto, 2016).

Financial Well-Being and Financial Ratios

Because of the absence of a definition of financial wellness in the literature, Joo (2008, p. 21) suggested that financial well-being could be defined as "being financially healthy, happy, and free from worry." Most recently, financial well-being has been defined as a household's state of being where it has control of its finances, the capacity to absorb an unexpected financial event, is on course to meet financial goals, and has freedom to make financial choices to enjoy life (Consumer Financial Protection Bureau, 2015).

Academics have used financial ratios as one of the proxies to measure household financial well-being. Financial ratios are indices that relate two financial items to each other. They give information about a household's financial status by providing a prescriptive guideline to encourage improvement in financial behavior (Harness et al., 2008). The use of a single financial ratio, however, is not considered a robust measure of financial well-being and therefore incorporating several ratios has been the norm, ranging from the use of three to seven (Greninger et al, 1996; Lytton et al., 1991). It is common to use at least three ratios to measure financial well-being: One related to emergency funds (liquidity), one investment ratio, and one solvency ratio (Baek & DeVaney, 2004; Bieker, 2011; Kim & Lyons, 2008). A household is considered financially-well when it has adequate liquidity, avoids excessive debt, and accumulates savings (Baek & DeVaney, 2004). Financial ratios are considered adequate if they meet a pre-determined guideline (Greninger et al, 1996; Lytton et al., 1991).

The following sections discuss previous research for the liquidity, investments, and solvency ratios as well as the guidelines used to determine ratio adequacy. Furthermore, we discuss the financial ratios research that has incorporated race/ethnicity.

Liquidity Ratios. The liquidity ratio is used to measure a household's savings to cover expenses when they face unexpected disruptions of income (Johnson & Widdows, 1985). This ratio is calculated by dividing monetary assets by monthly expenses (Garman & Forgue, 2011). Monetary assets, also known as emergency funds, are categorized by degree of liquidity: Quick funds include assets that can be quickly converted into cash such as checking, savings, and money market accounts; intermediate funds include quick plus certificates of deposit and savings bonds; comprehensive emergency funds include intermediate emergency funds plus stocks, bonds, and mutual funds that are not retirement accounts. Although this method of calculating the liquidity ratio is widely used in personal finance textbooks, there is an abundance of liquidity ratio research using the Survey of Consumer Finances (SCF) that includes household income rather than expenses because expenses are not included in the SCF. Hence, previous studies have considered liquidity adequacy anywhere from 2.5 to 6 months of income in the form of liquid assets (Anong and DeVaney, 2010; Bieker, 2011; DeVaney, 1993; Tenney & Kalenkoski, 2019).

Johnson and Widdows (1985) suggested that a household has adequate liquidity when it can cover 3–6 months of

expenses with their emergency funds because this is how long it would take a laid-off worker to find another job. This is consistent with data from the US Bureau of Labor Statistics (2020), which show that 79% of the unemployed in the United States are able to find a job in six and a half months or less, compared to 82% of Hispanics.

Liquidity adequacy is influenced by demographic and financial behavior factors. More education, being older, having less income, owning a home, and being White were related to adequate emergency funds while married households were less likely to have adequate liquidity (Bhargava & Lown, 2006). Household size was negatively associated with adequate liquidity (Chang & Huston, 1995). Longer planning horizons and being a saver were also significant predictors of emergency funds adequacy (Bhargava & Lown, 2006). Babiarz and Robb (2014) found that households with more financial knowledge are more likely to have adequate liquidity.

Investment Ratios. Investment ratios are used to determine if households have the appropriate amount of investment assets for wealth accumulation. The capital accumulation ratio (CAR), defined as investment assets/net worth, shows if financial goals for wealth accumulation are being accomplished (Garman & Forgue, 2011). This ratio is frequently used to measure retirement savings adequacy (Yao, et al., 2002).

However, the CAR presents mathematical problems because of wealth's non-normal distribution and therefore Hanna and Kim (2016) proposed the investments/total assets ratio as a better measure of savings towards financial goals. The numerator of this ratio is investment assets, which includes all financial assets except for monetary assets such as saving and checking accounts, plus non-financial assets such as artwork, antiques, net business assets, and real estate other than the primary residence. The denominator, total assets, includes financial and non-financial assets. A household is considered to have an adequate ratio if its investment assets are at least 50% of total assets. (Hanna & Kim, 2016).

There is limited information about the demographic and behavioral factors related to investment/assets ratio adequacy because previous ratio studies have focused on the CAR. Nevertheless, Baek and DeVaney (2004) found that those with a college degree and higher income were more likely to meet the 50% CAR guideline. Yao et al. (2002) found that being White, being unmarried, spending less than income, and a longer planning horizon were significant predictors of an adequate CAR. DeVaney (1995) found that male headed households were more likely to have adequate investment assets.

Solvency Ratios. Lytton et al. (1991) proposed the solvency ratio (calculated by comparing assets to liabilities) as a broad measure of household liquidity. A household is "technically insolvent" when this ratio is less than one because in this case there are fewer assets than liabilities. Therefore, a household has adequate solvency if its solvency ratio is greater than one.

With regards to demographic factors related to the solvency ratio, DeVaney and Hanna (1994) found that race was not related to adequate solvency, but age and income had a negative relationship with household insolvency and married couples had lower insolvency rates. Homeownership is positively related to financial solvency while the number of financial dependents is negatively related to being financially solvent (Joo & Grable, 2004). Park and DeVaney (2007) found that a longer planning horizon and spending less than income were determinants of an adequate solvency ratio.

Financial Ratios and Race/Ethnicity

Race/ethnicity has been mostly used in previous studies as a demographic factor to explain ratio adequacy. For instance, Bhargava and Lown (2006) found that Hispanics were less likely than non-Hispanic Whites to meet guidelines for emergency funds. Furthermore, Yao et al. (2002) found that Hispanics, compared to Whites and Blacks, had the lowest percentage of households with adequate retirement savings (CAR). Finally, Kim and Lyons (2008) found that Hispanic households were more likely than White households to have a solvency ratio of less than one. Nevertheless, most other studies have investigated ratio adequacy without controlling for race or ethnicity (Baek & DeVaney, 2004; Park & DeVaney, 2007).

There is limited information about which demographic factors are related to Latino households' ratio adequacy, but previous studies suggest that demographic factors related

to financial behavior are different for Hispanic and White households. For example, Fisher (2016) found that White and Hispanic heads of households who were older, were more likely to have a credit card. However, being married and having at least a high school diploma were positively related to the use of credit cards by White households but were not significant for Hispanic households. Furthermore, Hispanic households with higher income were more likely to have a credit card but the relationship between income and owning a credit card was not significant for White households.

Conceptual Framework

The Family Life Cycle (FLC) and Human Capital Theory (HCT) serve as the conceptual frameworks for this study. The FLC was first used by Rowntree (1903) to study poverty in England and has been used repeatedly to investigate consumer economic issues due to its superior explanatory power as compared to the conventional life-cycle hypothesis (Xiao, 1996). This model can distinguish family categories among consumers because it can assign proportions of the population into family life cycle stages. These stages are usually created by incorporating variables related to the life-cycle such as household head's age, marital status, and presence of children, which have been found to influence financial asset ownership and the use of debt (Baek & Hong, 2004; Xiao, 1996). HCT also serves as a framework because it posits that the more an individual invests in education, the better they will be financially (Becker, 1975).

Hypotheses

Based on the previous literature review, the following hypotheses are proposed:

> **H1:** A lower percentage of Hispanic households will have adequate liquidity, investments, solvency, and be financially-well as compared to non-Hispanic White households.
> **H2:** Comparing Hispanic and White households, there are differences in life-cycle factors (age, household size, marital status) and human capital factors (education) associated with financial ratios and financial well-being.
> **H3:** Comparing Hispanic and White households, there are differences in other factors (gender, homeownership, spending behavior, planning horizon, and financial literacy) associated with financial ratios and financial well-being.

Methodology

Data and Sample

Data were from the 2016 Survey of Consumer Finances. The Board of Governors of the Federal Reserve System sponsors the survey every three years in cooperation with the Statistics of Income Division of the Internal Revenue Service. The survey collects detailed information about households' financials and financial behavior. It uses a dual-frame sample design in order to provide reliable information about characteristics of the population. Cases are drawn from a geographically based random sample, or from a special oversample of relatively wealthy families. Because of its design, weights are needed to make estimates for the general population (Kennickell, 1998).

Missing data in the SCF is handled with multiple imputation of variables using Rubin's (1987) method called "repeated-imputation inference" (RII). This results in five "implicates" per survey year. Estimated variances from RII results represent the true variances more closely than those obtained with just one implicate (Kennickell, 1998). Therefore, all implicates are used in this study.

The sample only includes households with a Hispanic (612 cases) or a non-Hispanic White (4,481 cases) household head for a total sample of 5,093. The 2016 SCF has one variable related to race/ethnicity: Respondents were asked for the category that best describes them: White, Black or African-American, Hispanic or Latino, Asian, American Indian or Alaska Native, Hawaiian Native or other Pacific Islander, or another. It was not possible to do an analysis by country of origin or level of acculturation because the SCF does not provide this information.

Variables

Dependent Variables. Four binary dependent variables were used for the logistic regressions: Adequate liquidity ratio, adequate investments/assets ratio, adequate solvency, and overall financial well-being. They took the value of 1 if the household met the guidelines and zero otherwise.

Financial advisors calculate the liquidity ratio by diving liquid assets by monthly expenses. However, the SCF does not include household expenses and therefore, consistent with other research using the SCF, for the liquidity ratio (emergency funds), the formula was liquid assets/monthly income. Liquid assets included checking accounts, savings

accounts, money market accounts, money markets mutual funds, and call accounts at brokerages. The guideline for adequacy was 2.5 months of income in emergency funds. To allow for ratio calculation for all households, zero income was replaced with 1.

The investment/assets ratio was calculated as investment assets/total assets. Investment assets included all financial assets except for monetary assets such as saving and checking accounts, plus non-financial assets such as artwork, antiques, net business assets, and real estate other than the primary residence. Total assets include financial and non-financial assets. To allow for the ratio calculation for all households, total assets was 1 for households with zero assets. This ratio was considered adequate if investment assets were at least 50% of total assets.

Solvency was measured with the total assets/total debt ratio. It included all the assets and all the liabilities held by the household. If this ratio was greater than one the household was considered to have adequate solvency.

Finally, a household was considered financially-well if it met the guidelines for the three ratios. In other words, the financial well-being variable had a value of 1 if the household had adequate liquidity, adequate investment/asset ratio, and adequate solvency. If a household did not meet the guideline for at least one of the ratios, the household was not considered financially-well and the variable was coded as a 0.

Independent Variables. Other variables used were age, household size, income (logarithm), gender, marital status, education, planning horizon, spending behavior, and financial literacy. Age, household size, and income were continuous variables. Gender was categorized as male (reference) or female. Marital status had two categories: Married (reference) and not married. Education consisted of four categories: Less than a high school diploma (reference), high school diploma, some college education, or college education or more. Planning horizon for saving and investing decisions had four categories: Next few months (reference), next year, next few years, and next 5–10 years. Spending behavior had three categories: Spends more than income (reference), same as income, or less than income. The financial literacy variable was continuous; it was the respondent's self-assessment about personal finance knowledge. The scale went from zero for "not knowledgeable at all" to 10 for "very knowledgeable".

Analyses

Based on the conceptual frameworks and the literature review, the following models were developed for Latino and White households:

LR = *f*(life-cycle factors, human capital factor, other factors)

IR = *f*(life-cycle factors, human capital factor, other factors)

SR = *f*(life-cycle factors, human capital factor, other factors)

FW = *f*(life-cycle factors, human capital factor, other factors)

Where LR, IR, SR, and FW refer to liquidity ratio, investment ratio, solvency ratio, and financial well-being, respectively. Life-cycle factors are age, household size, and marital status. The human capital factor is education. Other factors are gender, homeownership, spending behavior, planning horizon, and financial literacy.

Descriptive statistics were weighted to have sample statistics reflect the US household population (Hanna, et al., 2018). Hypothesis one was tested with chi-square analysis. Hypotheses 2 and 3 were tested with logistic regressions. Descriptive statistics and logistic regressions were estimated using the recommendation of Montalto and Sung (1996) to use the repeated imputation inference (RII) to combine the results of all implicates and to adjust for between-implicate error.

Results

Descriptive Statistics

Table 1 shows weighted descriptive statistics of the full sample and by race/ethnicity. The average age of the head of household is 45.8 for Hispanics and 53.6 for Whites. The average household size for Hispanic and White households are 2.9 and 2.3, respectively. Only 40.4% of Hispanics are homeowners, as compared with 65.8% of White households. More Hispanic women (26.2%) than White women (23.6%) answered the survey. Compared to White households, less Hispanics (44.5%) are married. Only 17.2% of Latinos have a college education, whereas this is 38.1% for Whites. About half of Hispanics (50.1%) have a planning

TABLE 1. Weighted Descriptive Statistics of Sample and by Race/Ethnicity in the 2016 SCF

Variable	Total sample (N = 5,093)	White (n = 4,481)	Hispanic (n = 612)	Significant difference
Liquid assets	$43,702.6	$48,527.1	$14,931.5	$F = 9.7^{*}$
Monthly income	$8,923.3	$9,626.4	$4,730.3	$F = 13.2^{**}$
Investment assets	$575,932.8	$654,044.7	$110,110.5	$F = 20.9^{**}$
Total assets	$811,435.5	$909,398.1	$227,233.1	$F = 22.1^{**}$
Total debt	$98,664.7	$104,266.7	$65,257.1	$F = 15.8^{**}$
Income	$107,080.0	$115,517.2	$56,764.0	$F = 13.2^{**}$
Age	52.5	53.6	45.8	$F = 165.6^{**}$
Household size	2.4	2.3	2.9	$F = 102.7^{**}$
Financial literacy	7.3	7.4	6.7	$F = 620.1^{**}$
Meets liquidity ratio	30.8	34.0	12.4	$\chi^2 = 133.4^{**}$
Meets investments ratio	48.5	49.0	48.0	$\chi^2 = 43.0^{**}$
Meets solvency ratio	89.2	90.0	83.0	$\chi^2 = 14.0^{**}$
Meets all guidelines	15.1	25.0	7.0	$\chi^2 = 93.7^{**}$
Homeownership		65.8	40.4	$\chi^2 = 228.6^{**}$
Gender				$\chi^2 = 12.9^{**}$
Male	76.0	76.4	73.8	
Female	24.0	23.6	26.2	
Marital Status				$\chi^2 = 37.2$
Married	50.9	52.0	44.5	
Not married	49.1	48.0	55.5	
Education				$\chi^2 = 522.2^{**}$
Less than high school	12.1	8.3	34.5	
High school	26.1	26.4	24.2	
Some college	26.7	27.2	24.1	
College degree or more	35.1	38.1	17.2	
Planning horizon				$\chi^2 = 154.1^{**}$
Next few months	21.1	19.6	29.8	
Next year	14.1	12.9	21.3	
Next few years	28.0	28.5	25.5	
Next 5–10 years	23.6	24.7	16.8	
Longer than 10 years	13.2	14.3	6.5	
Spending behavior				$\chi^2 = 89.9^{**}$
More than income	16.6	15.8	21.2	
Same as income	35.6	34.4	44.2	
Less than income	47.6	49.8	34.6	

Note. Mean for continuous variables; column percentages for categorial variables.
$^{*}p < .01$. $^{**}p < .001$.

horizon of one year or less, as compared to 32.5% of White households. A larger proportion of Latinos (21.2%) report spending more than they earned, compared to 15.8% of Whites. The average self-assessed financial literacy score of Latinos was 6.7 while the score was 7.4 for Whites.

Hypotheses Testing

In our first hypothesis, we expected a lower percentage of Hispanic households to have adequate ratios as compared with White households. About 12% of Hispanic households have an adequate liquidity ratio (more than 2.5 months of income in liquid assets), compared to 34% of White households. About 48% of Latino and 49% of White households have an adequate investment/assets ratio (investment assets are at least 50% of total assets). Almost 83% of Hispanic households have adequate solvency (solvency ratio is greater than 1), compared to 90% of White households. Seven percent of Latino households are financially-well (adequate liquidity, investments, and solvency), as compared to 25% of White households. These differences are significant and provide support for hypothesis 1.

Results of logistic regressions for the liquidity ratio by race/ethnicity are presented in Table 2. In hypothesis 2 we expected FLC and HCT factors related to the likelihood of having adequate ratios and financial well-being to be different by race/ethnicity. FLC factors are related to liquidity adequacy of Whites but not of Hispanics, supporting hypothesis 2. Age is positively and significantly related to adequate liquidity of White households; household size is negatively and significantly related to White households' liquidity adequacy. With regards to HCT, having at least a

TABLE 2. Logit Parameter Estimates for Determinants of Liquidity Ratio Adequacy by non-Hispanic White and Hispanic Households

Variable	White households (*n* = 4,481)	Hispanic households (*n* = 612)
Age	0.026***	0.017
Household size	−0.090*	−0.057
Marital status		
Not married	−0.101	0.274
Education		
High school	0.625**	0.089
Some college	0.801***	0.391
College degree or more	1.458***	0.931*
Gender		
Female	−0.113	−0.347
Homeownership	0.562***	1.026***
Spending behavior		
Same as income	−0.197	0.046
Less than income	0.827***	0.903*
Planning horizon		
Next year	0.229	0.922
Next few years	0.507***	1.101*
Next 5–10 years	0.543***	1.317**
Longer than 10 years	0.748***	2.079***
Financial literacy	0.048*	−0.014
Income	−0.220***	−0.031
Log likelihood	−2,572.82	−205.37
Likelihood ratio chi-square	820.35***	100.22***
McFadden R^2	0.14	0.19

Note. Significant coefficients indicated by $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

high school diploma is positively related to liquidity adequacy of White households. However, having at least a college degree is significantly related to liquidity adequacy for Hispanic households.

In hypothesis 3 we expected other factors related to ratio adequacy and financial well-being to be different by race/ethnicity. This hypothesis was supported because for Hispanic households other significantly and positive predictors of the likelihood of meeting the liquidity guideline are homeownership, planning horizon of at least the next few years, and spending less than income. Other factors significantly and positively related to the likelihood of having adequate liquidity of White households are homeownership, a planning horizon of at least the next few years, spending less than income, and financial literacy.

Table 3 shows logit parameter estimates by race/ethnicity for the investment/assets ratio. Hypothesis 2 is supported because different FLC and HTC factors are related to an adequate investment/assets ratio by race/ethnicity. For Hispanic households age, not being married, and having at least a high school diploma are positively significantly related to investments ratio adequacy. Age and having at least some college education are positively significantly related to investment/assets ratio adequacy of White households while household size is negatively related to White households' investment ratio adequacy.

Hypothesis 3 is also supported for the investment/assets ratio because the factors related to ratio adequacy are different by race/ethnicity. For Latino households, a planning horizon greater than 10 years has a significantly positive

TABLE 3. Logit Parameter Estimates for Determinants of Investment/Assets Ratio Adequacy by White and Hispanic Households

Variable	White households (*n* = 4,481)	Hispanic households (*n* = 612)
Age	0.026***	0.030**
Household size	−0.259***	−0.177
Marital status		
Not married	−0.084	0.727*
Education		
High school	0.320	0.805*
Some college	0.553**	0.808*
College degree or more	1.287***	1.319**
Gender		
Female	0.039	0.534
Homeownership	−1.214***	−2.276***
Spending behavior		
Same as income	−0.185	−0.753*
Less than income	0.165	−0.114
Planning horizon		
Next year	0.147	0.072
Next few years	0.303*	−0.637
Next 5–10 years	0.278*	0.233
Longer than 10 years	0.504***	1.140*
Financial literacy	−0.016	−0.048
Income	0.071**	0.1432
Log likelihood	−2,381.71	−215.86
Likelihood ratio chi-square	529.04***	120.96***
McFadden R^2	0.10	0.22

Note. Significant coefficients indicated by $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

relationship with the likelihood of having adequate investment/assets ratio. Homeownership and spending less than income are significantly negatively related to meeting the guideline. For White households a planning horizon of at least the next few years has a significantly positive relationship with the likelihood of meeting the investment/assets ratio. Homeownership is significantly negatively related to the likelihood of meeting the guideline.

Logistic regression results for the solvency ratio by race/ethnicity are presented in Table 4. As proposed in hypothesis two, different FLC and HCT factors are related to the solvency ratio for White and Hispanic households. For Hispanics, household size is positively related to this ratio's adequacy while having at least some college education is negatively related to the likelihood of solvency adequacy. However, for White households, age and homeownership are significantly positively related to an adequate solvency ratio.

Hypothesis 3 is also supported for the solvency ratio because for Hispanics, homeownership is significantly positively related to the likelihood of meeting the solvency ratio guideline. However, for White households, homeownership, planning horizon, and spending less than income also have a significantly positive relationship with the likelihood of having an adequate solvency ratio.

Table 5 shows logit parameter estimates of financial well-being by race/ethnicity. Hypothesis 2 is supported because

TABLE 4. Logit Parameter Estimates for Determinants of Solvency Ratio Adequacy by White and Hispanic Households

Variable	White households (n = 4,481)	Hispanic households (n = 612)
Age	0.053***	0.015
Household size	−0.068	0.102*
Marital status		
Not married	−0.144	−0.318
Education		
High school	0.315	−0.236
Some college	−0.094	−0.925**
College degree or more	−0.339	−1.008**
Gender		
Female	−0.166	0.090
Homeownership	2.020***	1.599***
Spending behavior		
Same as income	0.257	−0.039
Less than income	1.103***	0.449
Planning horizon		
Next year	0.589**	−0.308
Next few years	0.523**	−0.019
Next 5–10 years	0.698***	0.201
Longer than 10 years	1.442***	−0.354
Financial literacy	0.003	0.052
Income	0.091*	0.252*
Log likelihood	−859.74	−234.88
Likelihood ratio chi-square	860.50***	79.05***
McFadden R^2	0.34	0.14

Note. Significant coefficients indicated by $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

TABLE 5. Logit Parameter Estimates for Determinants of Financial Well-Being by White and Hispanic Households

Variable	White households (n = 4,481)	Hispanic households (n = 612)
Age	0.0356***	0.042*
Household size	−0.174**	−0.269
Marital status		
Not married	−0.153	0.564
Education		
High school	0.905*	1.426
Some college	1.438***	1.570
College degree or more	2.057***	2.999**
Gender		
Female	0.076	−0.559
Homeownership	−0.378**	−1.085
Spending behavior		
Same as income	−0.178	−0.971
Less than income	0.483**	1.443
Planning horizon		
Next year	0.129	1.033
Next few years	0.336	0.369
Next 5–10 years	0.379*	0.733
Longer than 10 years	0.779***	2.063*
Financial literacy	0.044	0.083
Income	−0.039	−0.136
Log likelihood	−1,657.19	−62.46
Likelihood ratio chi-square	437.49***	51.14***
McFadden R^2	0.12	0.28

Note. Significant coefficients indicated by $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

for Hispanic households age and having a college degree have a significantly positive relationship with the likelihood of being financially-well. However, for White households age and having at least a high school diploma are significantly positively related to being financially-well.

Hypothesis 3 is also supported for financial well-being because for Hispanic households having a planning horizon longer than 10 years is significantly positively related to financial well-being. However, for White households a planning horizon of at least five years and spending less than income have a significantly positive relationship with the likelihood of financial well-being. Moreover, household size and homeownership are significantly and negatively related to the likelihood of being financially-well.

Discussions, Limitations, and Implications

Discussions

This study used the Family Life Cycle (FLC) and Human Capital Theory (HCT) as a framework to investigate if factors related to adequate financial ratios and financial well-being differ for Hispanic and non-Hispanic White households. As expected, different FLC and HCT factors are related to ratio adequacy and financial well-being of Latino and White households. This is consistent with previous research that highlights the importance of finding appropriate models of saving for Hispanics due to their different financial behavior as compared to Whites (Fisher, 2016; Fisher & Hsu, 2012). The results of this study are also consistent with previous studies showing that life-cycle factors influence financial asset ownership and the use of debt

(Baek & Hong, 2004; Xiao, 1996). Becker's (1975) HCT's proposal that an individual's investment in education has financial benefits was also supported by the results of this study.

This study found that household size is related to solvency ratio adequacy of Hispanic households, but not to that of White households. This may be due to the income contribution by nonnuclear family members described by Penaloza and Gilly (1986), which may in turn reduce the need for debt. In addition, education is related to ratio adequacy and financial well-being of Hispanic households. Specifically, having a college degree is positively related to financial well-being and adequate liquidity and investments but is negatively related to adequate solvency. The results regarding education and how it relates to solvency may be due to the increased college enrollment among Hispanics (Gramlich, 2017). This is encouraging because, as stated by HCT, investing in one's education leads to improved financial outcomes.

Homeownership is positively related to emergency and solvency ratio adequacy but negatively related to the investment/assets ratio. This suggests that Hispanics are focused on accumulating wealth through home ownership and may not be considering the importance of an investment portfolio for retirement security.

In addition, this study found that a lower proportion of Hispanic households have adequate financial ratios and are less financially well when compared to White households. These results are similar to previous studies that have found that Hispanics, as compared to White households, are less likely to have adequate emergency funds (Bhargava & Lown, 2006), less likely to have high yield assets (Shin & Hanna, 2015), and carry more debt (Boshara, et al., 2015). Previous studies of Hispanic households have used one ratio category to determine their financial vulnerability. This research contributes to the literature by including ratios from three different areas to measure financial well-being of Hispanic households.

Limitations

There are some limitations to this study. Firstly, the SCF does not provide information about country of origin or acculturation level. The findings may differ among Hispanics due to their heterogenicity. Future research should account for potential differences related to country of origin, time spent in the US, acculturation levels, etc. Secondly, this study did not use a comprehensive model of financial wellness as proposed by Joo (2008) because no measures of financial satisfaction were included. Addressing these limitations in future research about Hispanics and comparing how they differ from saving models for White households may help financial educators to better understand their financial behavior. Future research should study Hispanic households' ratios at different points in time in order to measure improvement, if any, in financial well-being. Thirdly, the SCF does not collect household expenses and this study used income as a proxy for expenses to calculate the liquidity ratio. This study, therefore, is consistent with other studies that have used the SCF to calculate the liquidity ratio, but it does not measure the ratio as defined by practitioners and financial planning textbooks. Fourthly, the use of a single variable to measure self-reported financial literacy presents its problems. To better understand the relationship between financial literacy and financial well-being it is necessary to compare self-reported knowledge to factual financial knowledge. Additionally, the SCF does not provide information about the level of financial socialization received as a child and/or financial education received as an adult. Finally, more research is needed to further study the relationship between college education and solvency for Hispanic households.

Implications for Practitioners

This study found that demographic factors and financial behaviors related to financial ratio adequacy and to financial well-being are different for Hispanic and White households. Financial planners and educators can benefit from the findings of this study by adapting their services accordingly for clients of various ethnic backgrounds to develop a good rapport that is crucial for the sustainability of the client-advisor relationship (Cheng, et al., 2019). Models created with mostly non-Hispanic data do not reflect the realities of this group, which may lead to advisors assuming financial basics are common knowledge among their Hispanic clients, and not providing suitable information adapted to their needs. For example, the relationship between household size and ratio adequacy is different for Hispanic and White households. Therefore, when working with Hispanics, practitioners might consider the different household income dynamics and pooling of resources and their effect on financial management and financial well-being. Practitioners

might also want to consider inviting all household members to an annual meeting which would be beneficial to further their financial education (Gibson et al, 2021).

The increase in the homeownership rate for Hispanics in the past five years (U.S. Census Bureau, 2021) is encouraging because homeownership is key for building wealth. The results of this study, however, suggest that Hispanic households are choosing one asset category over another because homeownership is positively related to adequate emergency and solvency ratios but negatively related to the investment/asset ratio. Hispanics may dismiss the importance of investment assets especially as they relate to retirement planning. Therefore, financial counselors should educate Hispanics about the importance of a balanced asset portfolio and the advantages of high-yield investments for wealth accumulation. Moreover, practitioners should educate Hispanics about the use of financial ratios as a tool to find and correct financial weaknesses. This will help a larger proportion of this ethnic group to achieve financial well-being.

The results of this study show that Hispanics' self-reported financial literacy is lower than that of Whites, which suggests that Hispanics are less confident about their knowledge of financial affairs. Financial advisors should continue to reach out to Hispanics through education programs to help them increase their knowledge but should also monitor how they rate themselves. A study by Allgood and Walstad (2016) showed that when financial education and self-confidence are combined, financial behavior is positively affected.

Finally, practitioners should take note of the positive relationship between the planning horizon for saving and investing and the liquidity and the investment/assets ratio. Hispanic households with a planning horizon longer than 10 years are more likely to have adequate liquidity and investment/assets ratios, as well as to be financially-well.

References

Allgood, S., & Walstad, W. B. (2016). The effects of perceived and actual financial literacy on financial behaviors. *Economic Inquiry*, *54*(1), 675–697. https://doi.org/10.1111/ecin.12255

Anong, S. T., & DeVaney, S. A. (2010). Determinants of adequate emergency funds including the effects of seeking professional advice and industry affiliation. *Family and Consumer Sciences Research Journal, 38*(4), 405–419. https://doi.org/10.1111/j.1552-3934.2010.00035.x

Babiarz, P., & Robb, C. A. (2014). Financial literacy and emergency saving. *Journal of Family and Economic Issues, 35*(1), 40–50. https://doi.org/10.1007/s10834-013-9369-9

Baek, E., & DeVaney, S. A. (2004). Assessing the baby boomers' financial wellness using financial ratios and a subjective measure. *Family and Consumer Sciences Research Journal, 32*(4), 321–348. https://doi.org/10.1177/1077727X04263826

Baek, E., & Hong, G. S. (2004). Effects of family life-cycle stages on consumer debts. *Journal of Family and Economic Issues, 25*(3), 359–385. https://doi.org/10.1023/B:JEEI.0000039946.59422.5f

Becker, G. (1975). *Human capital: A theoretical and empirical analysis* (2nd ed.). Columbia University Press.

Bhargava, V., & Lown, J. (2006). Preparedness for financial emergencies: Evidence from the survey of consumer finances. *Financial Counseling and Planning, 17*(2), 17–26.

Bieker, R. F. (2011). Differences between Black and White household financial well-being: What do household financial ratios indicate? *National Social Science Journal, 37*, 8–16.

Boshara, R., Emmons, W. R., & Noeth, B. (2015). *The demographics of wealth: How age, education and race separate thrivers from strugglers in today's economy* (Essay No. 1: Race, Ethnicity, and Wealth). St. Louis, MO: Center for Household Financial Stability, Federal Reserve Bank of St. Louis.

Chang, Y. R., & Huston, S. J. (1995). Patterns of adequate household emergency fund holdings: A comparison of households in 1983 and 1986. *Journal of Financial Counseling and Planning, 6,* 119.

Cheng, Y., Kalenkoski, C. M., & Gibson, P. (2019). Factors associated with hiring and firing financial advisors during the great recession. *Journal of Financial Counseling and Planning, 30*(2), 289–303. https://doi.org/10.1891/1052-3073.30.2.289

Colby, S. L., & Ortman, J. M. (2014). *Projections of the size and composition of the US population: 2014–2060*. Current Population Reports, (No. P25-1143).

Consumer Financial Protection Bureau (2015). *Financial well-being: The goal of financial education*, Consumer Financial Protection Bureau. https://www.

consumerfinance.gov/data-research/research-reports/financial-well-being/

DeVaney, S. A. (1993). Change in household financial ratios between 1983 and 1986: Were American households improving their financial status? *Financial Counseling and Planning*, *4*, 31–48.

DeVaney, S. A., & Hanna, S. (1994). The effect of marital status, income, age and other variables on insolvency in the USA. *Journal of Consumer Studies & Home Economics*, *18*(3), 293–303. https://doi.org/10.1111/j.1470-6431.1994.tb00701.x

DeVaney, S. A. (1995). Retirement preparation of older and younger baby boomers. *Journal of Financial Counseling and Planning*, *6*, 25.

Fisher, P. J. (2016). Differences in credit card use between White and Hispanic households. *Journal of Financial Counseling and Planning*, *27*(2), 199–211. https://doi.org/10.1891/1052-3073.27.2.199

Fisher, P. J., & Hsu, C. (2012). Differences in household saving between non-Hispanic White and Hispanic households Hispanic. *Journal of Behavioral Sciences*, *34*(1), 137–159. https://doi.org/10.1177/0739986311428891

Garman, E. T., & Forgue, R. (2011). *Personal finance*. Cengage Learning.

Gibson, P., Sam, J. K., & Cheng, Y. (2021). The value of financial education during multiple life stages. *Journal of Financial Counseling and Planning*, *31*(1), 1–2. https://doi.org/ 10.1891/VV-20-00017

Grable, J. E., Kruger, M. E., & Ford, M. R. (2019). *The fundamentals of writing a financial plan*. The National Underwriter Company.

Gramlich, J. (2017). Hispanic dropout rate hits new low, college enrollment at new high. https://www.pewresearch.org/fact-tank/2017/09/29/hispanic-dropout-rate-hits-new-low-college-enrollment-at-new-high/

Greninger, S. A., Hampton, V. L., Kitt, K. A., & Achacoso, J. A. (1996). Ratios and benchmarks for measuring the financial well-being of families and individuals. *Financial Services Review*, *5*(1), 57–70. https://doi.org/10.1016/S1057-0810(96)90027-X

Guzman, B. (2001). *The Hispanic population*. U.S. Census Bureau. https://www.census.gov/prod/2001pubs/c2kbr01-3.pdf

Hanna, S. D. (2011). The demand for financial planning services. *Journal of Personal Finance*, *10*(1), 36–62.

Hanna, S. D., & Kim, K. T. (2016). Household ratio guidelines for the amount of investments. *Financial Services Review*, *25*, 263–277. https://doi.org/10.4148/jft.v4i1.1839

Hanna, S. D., Kim, K. T., & Lindamood, S. (2018). Behind the numbers: Understanding the Survey of Consumer Finances. *Journal of Financial Counseling and Planning*, *29*(2), 410–418. https://doi.org/10.1891/1052-3073.29.2.410

Harness, N. J., Chatterjee, S., & Finke, M. (2008). Household financial ratios: A review of literature. *Journal of Personal Finance*, *6*(4), 77–97.

Johnson, D. P., & Widdows, R. (1985, March). Emergency fund levels of households. *Proceedings of the American Council on Consumer Interests 31th Annual Conference*.

Joo, S. (2008). Personal financial wellness. In J. J. Xiao (Ed.), *Handbook of consumer finance research* (pp. 21–33). Springer Publishing. https://doi.org/10.1007/978-0-387-75734-6

Joo, S. H., & Grable, J. E. (2004). An exploratory framework of the determinants of financial satisfaction. *Journal of Family and Economic Issues*, *25*(1), 25–50.

Kennickell, A. B. (1998). *Multiple imputation in the survey of consumer finances*. Board of Governors of the Federal Reserve System. http://www.federalreserve.gov/econresdata/scf/files/impute98.pdf

Kim, H., & Lyons, A. C. (2008). No pain, no strain: Impact of health on the financial security of older Americans. *Journal of Consumer Affairs*, *42*(1), 9–36. https://doi.org/10.1111/j.1745-6606.2007.00092.x

Lopez, M. (2013). Hispanic or Latino? Many don't care, except in Texas. *Pew Research Center.* http://www.pewresearch.org/fact-tank/2013/10/28/in-texas-its-hispanic-por-favor/

Lusardi, A. (2005). *Financial education and the saving behavior of African-American and Hispanic households*. United States Department of Labor.

Lusardi, A., & Mitchell, O. S. (2007). Financial literacy and retirement planning: New evidence from the Rand American Life Panel. *Michigan Retirement Research Center Research Paper No. WP, 157*. https://doi.org/10.2139/ssrn.1095869

Lytton, R., Garman, E. T., & Porter, N. (1991). How to use financial ratios when advising clients. *Financial Counseling and Planning, 2*, 3–23.

Montalto, C. P., & Sung, J. (1996). Multiple imputation in the 1992 Survey of Consumer Finances. *Financial Counseling and Planning, 7*, 133–146.

Ogden, D. T., Ogden, J. R., & Schau, H. J. (2004). Exploring the impact of culture and acculturation on consumer purchase decisions: Toward a microcultural perspective. *Academy of Marketing Science Review, 3*(1), 1–22.

Park, J. M., & DeVaney, S. A. (2007). Examining a model of economic well-being based on financial ratios. *Consumer Interests Annual, 53*.

Passel, J. S., & Taylor, P. (2009). *Who's Hispanic?* Pew Hispanic Center. http://www.pewhispanic.org/2009/05/28/whos-hispanic/

Penaloza, L., & Gilly, M. C. (1986). The Hispanic family: Consumer research issues. *Psychology and Marketing, 3*, 291–304. https://doi.org/10.1002/mar.4220030407

Porto, N. (2016). Financial issues of Hispanic Americans. In J. J. Xiao (Ed.), *Handbook of consumer finance research* (pp. 205–214). Springer Publishing.

Rowntree, B. S. (1903). *Poverty: A study of town life*. MacMillan.

Rubin, D. B. (1987). *Multiple imputation for nonresponse in surveys*. John Wiley & Sons.

Shin, S., & Hanna, S. D. (2015). Decomposition analyses of racial/ethnic differences in high return investment ownership after the Great Recession. *Journal of Financial Counseling and Planning, 26*(1), 43–62. https://doi.org/10.1891/1052-3073.26.1.43

Tenney, J. A., & Kalenkoski, C. M. (2019). Financial ratios and financial satisfaction: Exploring associations between objective and subjective measures of financial well-being among older Americans. *Journal of Financial Counseling and Planning, 30*(2), 231–243. https://doi.org/10.1891/1052-3073.30.2.231

Taylor, P., Kochhar, R., Fry, R., Velasco, G., & Motel, S. (2011). *Wealth gaps rise to record highs between Whites Blacks and Hispanics*. Pew Research Center.

U.S. Bureau of Labor Statistics. (2020, March 6). Unemployed Persons by Duration of Unemployment [Press release]. https://www.bls.gov/news.release/empsit.t12.htm

U.S. Census Bureau. (2021). Homeownership Rate for the United States: Hispanic or Latino. https://fred.stlouisfed.org/series/HOLHORUSQ156N.

Watchravesringkan, K. (2008). Financial behavior of Hispanic Americans. In J. J. Xiao (Ed.), *Handbook of consumer finance research* (pp. 271–285). Springer Publishing.

Xiao, J. J. (1996). Effects of family income and life cycle stages on household financial asset ownership. *Financial Counseling and Planning, 7*, 21–30.

Yao, R., Hanna, S. D., & Montalto, C. P. (2002). Factors related to meeting the capital accumulation ratio guideline. *Financial Services Review, 11*, 153–171.

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