

Financial Behavior and Financial Access: A Latent Class Analysis

Julie Birkenmaier^a  and Qiang (John) Fu^b 

This article examined the relationship of household financial behaviors and accesses. Using the 2015 National Financial Capability Study, the current study conducted latent class analysis of financial behaviors to identify latent classes (N = 27,564). The distribution of access was investigated among latent classes, which were regressed on the financial behaviors of financial planning and financial spending factors and other covariates using multinomial logistic regression. After controlling for other variables, the odds of being in Thinly Banked, Limited Access, and Working Families classes instead of being in Investors class decreased by 90%, 88%, and 66% for every point higher in financial planning behavior, respectively. Results suggest that desirable financial behaviors such as planning are important for consumers with the least financial access.

Keywords: financial access, financial behavior, financial literacy, financial planning, financial spending

People's financial access has important implications for their short-term and long-term financial well-being (Federal Deposit Insurance Corporation [FDIC], 2018; Joseph et al., 2017). The World Bank (2017) defined household financial access (hereafter, access) as the use of formal financial products and services, and generally includes the ability and choice to access savings and transaction accounts, credit, and investment and insurance products and services from formal financial institutions. Retirement savings, vehicle and mortgage loans, and investments are considered part of access in some contexts (Burhouse et al., 2016; Karp & Nash-Stacey, 2015). Access also includes reasonable costs of products and services, consumer protections, and consumer convenience and choice (Beck et al., 2009). Individual or subsets of household financial management behaviors (hereafter behavior) can influence access (FDIC, 2018; Haynes-Bordas, Kiss, & Yilmazer, 2008).

Challenges to U.S. consumer access are evidenced by the fact that 7% of consumers are unbanked and 19% are underbanked (i.e., own a bank account, yet also use non-bank products and services; FDIC, 2018). Consumers lack

access to products and services from formal financial institutions for many reasons, including not having enough money to keep in an account, lack of trust in banks, privacy concerns, and having had identification, credit, or former account problems. Institutional reasons include high and unpredictable fees, inconvenient hours and locations, and not offering needed products and services (FDIC, 2018).

The consumer access environment is characterized by an increasing number of financial product choices, including nonbank and predatory products (Caplan, 2014). Interventions, such as providing access to low-cost bank accounts (Despard et al., 2018), specially designed and matched savings accounts (Loke & Sherraden, 2009; Richards & Thyer, 2011), and others are designed to help households navigate the environment toward increased household access to helpful products and services. Exploring the relationship between access and behavior using comprehensive measures for both is important to understanding the importance of their linkage. Research on the relationship of access and behavior may contribute to improving access interventions toward improved overall financial

^aProfessor, Saint Louis University School of Social Work, College for Public Health and Social Justice, 3550 Lindell Blvd., St Louis, MO 63103.
E-mail: Birkenmaier@slu.edu

^bProfessor, Saint Louis University School of Public Health, College for Public Health and Social Justice, 3545 Lafayette Ave., St Louis, MO 63104.
E-mail: John.Fu@slu.edu

well-being. This study builds on the few classifications of general consumer financial access conducted to date, and extends the literature to examine the relationship between the access classes and behavior. Using access classes can inform interventions toward people that fit certain profiles.

This article adds to the literature in several ways. First, there are scant profiles of general U.S. consumer behavior using nationally representative datasets. Second, rather than using one or few indicators of access, a latent class variable is used for access, which is comprehensive and reduces measurement error. Third, using statistically sophisticated techniques, the article investigates the question of whether behavior is differentially associated with access classes, previously unstudied in the literature. Fourth, studies that isolate the association of behaviors and access separate from the effects of financial literacy are limited. Without seeking evidence for causal relationships, this study seeks to fill that gap.

Literature Review

Household Financial Management Behavior

Household financial management behavior is defined as any human behavior that is related to money management, typically including budgeting, spending, borrowing, saving and investing, and managing risk outside of and within formal financial institutions (Xiao, 2008). Research into behaviors also includes day-to-day financial management of income and expenses (Aboagye & Jung, 2018; Bell et al., 2009; Haynes-Bordas et al., 2008; Moreland, 2018; Szendrey & Fiala, 2018), management of products and services (Aboagye & Jung, 2018; Bell et al., 2009; Fernandes et al., 2014; Moreland, 2018; Szendrey & Fiala, 2018; Xiao et al., 2008) and planning ahead (Batty et al., 2015; Bell et al., 2009; Fernandes et al., 2014; Haynes-Bordas et al., 2008; Moreland, 2018; Xiao et al., 2008). Scholars also study propensity to plan (Xiao & O'Neill, 2018b), personality traits (Hoffmann & Risse, 2019), mental accounting (Xiao & O'Neill, 2018a), and financial advice-seeking (Moreland, 2018). Some researchers also include retirement contributions (Bell et al., 2009; Fernandes et al., 2014; Reyers, 2018), and retirement planning (de Bassa Scheresberg, 2013; Grable et al., 2009).

Conceptual Framework: How Financial Behavior and Financial Access Relate

Previous research with various measurements of specific behaviors and access has demonstrated that the relationship could be bidirectional. First, behavior has a strong relationship with and influences aspects of access (FDIC, 2018; Haynes-Bordas et al., 2008). For example, positive behaviors, evidenced by avoiding overdrafts in bank accounts and paying obligations to formal financial institutions, provides the opportunity to own and maintain a low-cost bank account (FDIC, 2018). Positive behaviors result in strong credit reports and scores, which open up opportunities. Secondly, specific aspects of access relate to behavior, as people can learn behaviors and take advantage of opportunities through their experiences with access through institutions (Friedline & West, 2015; Joseph et al., 2017; Loke et al., 2015; Lyons et al., 2006; West & Friedline, 2016). For example, owning a bank account can facilitate the use of available financial management tools, such as direct deposit and automatic bill payment.

Typologies of Financial Behavior and Financial Access

Typologies of behavior and access among the U.S. population can provide a general picture of consumer financial behavior organized in groups. However, only a few have been published. For instance, Birkenmaier and Fu (2016) used the 2012 National Financial Capability Study (NFCS) to identify subgroups of U.S. consumers who lack access and use Alternative Financial Services (AFS). Five meaningful subgroups were discovered. Researchers found that over half of the U.S. population struggles with low or limited access, widespread use of AFS among the sample, and unmet consumer demand for affordable and convenient products and services from formal financial institutions. Gutman, Garon, Hogarth, and Schneider (2017) surveyed a nationally-representative U.S. adult sample and found seven subgroups of behavior and access, grouped into three tiers that differentiate by their use of AFS and behavior. Sinha, Tan, and Zhan (2018) found four classes of 18–24 year-old adults related to their financial attributes and behaviors. Only about one-fifth of the sample were financially stable, while over half were financially precarious or at-risk. Research using multidimensional indicators of U.S. behaviors is needed to provide a more detailed understanding of the relationship between behaviors with varying levels of access.

Current Study Aim

In spite of evidence that links specific types of behaviors and specific types of access, little attention has been paid to how these concepts could be associated using measures of multidimensional indicators for more general knowledge about their relationship. Additionally, little attention has been paid to their association using classes of access. The purpose of this study was to examine whether behaviors were associated with higher or lower levels of access in the U.S. population of banked and unbanked populations, using typologies to best inform interventions. A second purpose was to study the relationship using multidimensional indicators of access and behaviors, which allows for comprehensive measurement of the concepts and reduces measurement error. Using multidimension indicators for financial behavior leads to unbiased estimates of the relationship.

Methods

Sample and Measures

This study used a nationally representative sample from the 2015 NFCS. The survey was funded by the Financial Investor Regulatory Authority (FINRA) Investor Education Foundation and conducted by Applied Research and Consulting. Data were gathered via a national online survey of 27,564 American adults from the general population. Motola and Kieffer (2017) provide a detailed overview of the dataset.

Building on previous related scholarship (e.g., The World Bank, 2017), access was measured by the following questions: (a) Do you have a checking account? The response was *yes* or *no*; (b) Do you have a savings account, money market account, or CDs (certificate of deposit)? The response was *yes* or *no*; (c) Do you have any retirement plans through a current or previous employer? The response was *yes* or *no*; (d) Do you (or your spouse/partner) have any other retirement accounts not through an employer, like an IRA, Keogh, SEP, myRA, or any other type of retirement account that you have set up yourself? The response was *yes* or *no*. We combined the two retirement questions to create a retirement account variable that was having a retirement account versus not; (e) Not including retirement accounts, do you have any investment in stocks, bonds, mutual funds, or other securities? The response was *yes* or *no*; (f) Do you currently own your home? The response was *yes* or *no*; (g) Do you have any home equity loans? The response was *yes*

or *no*. We combined these two homeownership-related questions to create a variable that was either owning a home or having home equity loans versus not; and (h) How many credit cards do you have? We recoded this variable as having at least one credit card versus no credit card.

Building on previous related scholarship (e.g., Xiao, 2008), behavior was comprised of two dimensions: financial spending and financial planning. The financial spending was measured by the following questions: (a) Over the past year, would you say your spending was less than, more than, or about equal to your income? The response was *spending more than income*, *about equal to income*, or *spending less than income*; (b) In a typical month, how difficult is it for you to cover your expenses and pay all your bills? The response was on a 3-point Likert scale from *very difficult* to *not at all difficult*; and (c) I have too much debt right now. The response was on a 7-point Likert scale from *strongly disagree* to *strongly agree*. The financial planning was measured by the following questions: (a) I am good at dealing with day-to-day financial matters, such as checking accounts, credit and debit cards, and tracking expenses. The response was on a 7-point Likert scale from *strongly disagree* to *strongly agree*; (b) Have you ever tried to (or before you retired did you) figure out how much you need to save for retirement? The response was *yes* or *no*; (c) Does your household have a budget? The response was on a 7-point Likert scale from *strongly disagree* to *strongly agree*; and (d) I set long-term financial goals and strive to achieve them. The response was on a 7-point Likert scale from *strongly disagree* to *strongly agree*.

Sociodemographic variables included gender, age, race (i.e., White vs. non-White provided by the public use dataset), marital status (i.e., single, married, divorced/separated/widowed), education (i.e., less than high school, high school graduates, college, and graduate), employment status (i.e., full-time job, self-employed, part-time job, homemaker, full-time student, sick/disabled/unable to work, unemployed/laid off, and retired), household income (i.e., <\$15,000, \$15,000–\$35,000, \$35,000–\$75,000, and at least \$75,000), and census region (i.e., Northeast, Midwest, South, and West). Financial knowledge was a composite variable that is the summation of correct answers to 6 financial knowledge questions. The questions asked about compound interest, inflation, principles related to risk and diversification, the relationship between bond prices and

interest rates, and the impact that a shorter term can have on total interest payments over the life of a mortgage. The total number of correct answers ranged from 0 to 6. Financial education was classified into three categories: not received financial education even if it was offered by a school or college, or a workplace; received financial education offered by a school or college, or a workplace; and no financial education offered in the past. The responses to this variable were recoded as received financial education regardless of who provided, not received, or preferred not to say.

Statistical Analysis

First, financial spending and financial planning dimensions were treated as two continuous latent variables, called “factors.” The seven indicators were treated as ordinal variables given that the multicategory responses reflected levels toward the desirable behavior. A confirmatory factor analysis (CFA) was used to test the two-factor model indicated by seven indicators. The two factors were correlated. The higher factor scores reflected more desirable financial behavior. A polychoric correlation matrix was estimated and used for the CFA to test the measurement model (Vermunt & Magidson, 2005). The first factor loading for the first indicator was constrained to be unity for the purpose of identification. Diagonally weighted least squares (*WLSMV*) estimator was used for the CFA based on observed ordinal variables (Muthén, 1984). The best-fitting measurement model was determined based on multiple model fit indices, including root mean square error of approximation (RMSEA), comparative fit index (CFI), Tucker Lewis Index (TLI), and the standardized root mean square (SRMR). A good model fit was indicated by $RMSEA < 0.06$, $CFI > 0.95$, $TLI > 0.95$ or $SRMR < 0.05$. A *Z*-test was used to test for statistical significance of factor loadings. Standardized factor loadings and standard errors were reported. A threshold of 0.4 of the standardized factor loading was used to determine whether an observed variable loaded sufficiently on the latent variable.

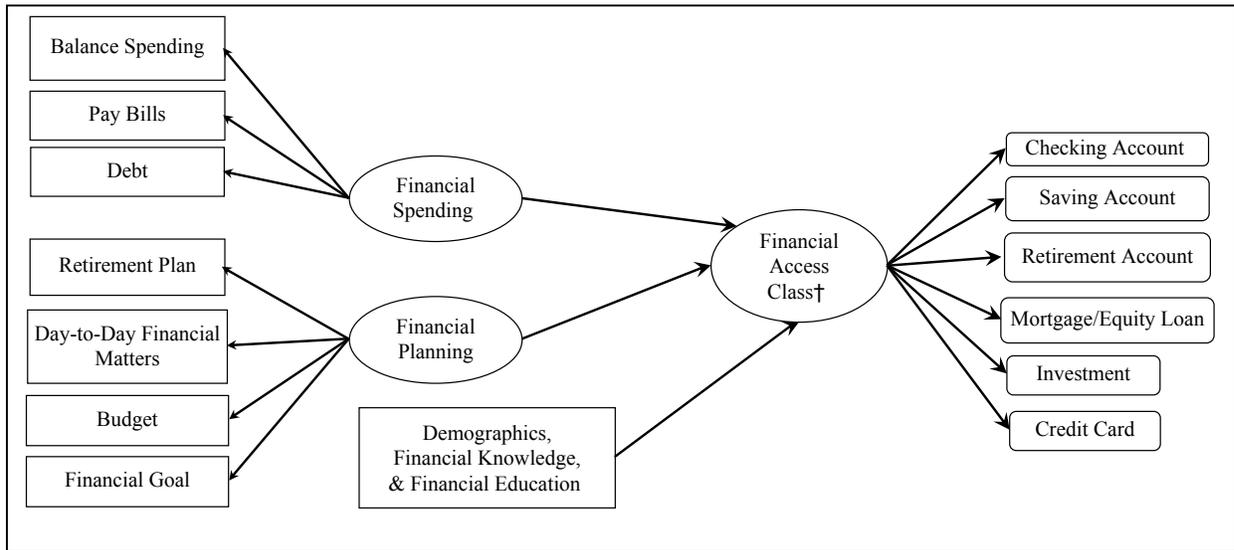
Secondly, we tested the measurement model for the categorical latent variable using the latent class analysis (LCA). The categorical latent variable access was measured by six dichotomous indicators. These indicators were jointly used to identify the number of latent classes in the sample. The relationship between the latent class variable and each access indicator was estimated by the item response probability. Akaike’s Information Criterion (AIC), Bayesian Information Criterion (BIC), and Adjusted BIC (ABIC)

were used to determine the best model with the most optimal balance between fit and parsimony among the competing models considered. The smaller values mean better model fit. We plotted AIC, BIC, and ABIC values against different latent class models from three classes to six classes. The best solution was suggested by a sharp turning point of a model fit index where the value change became flat. The Lo–Mendell–Rubin test (LMR; Lo, Mendell, & Rubin, 2001) was used to compare the improvement between neighboring class models. The prevalence of each latent class was estimated by the best-fitting model. Thirdly, the latent classes were regressed on the financial behavior factors using multinomial logistic regression. This step tested the association between three latent variables. Lastly, financial knowledge, financial education, and sociodemographic variables were added to the model as covariates to control for potential confounding effects on the latent classes of access using multinomial logistic regression. Dummy variables were created for race, marital status, employment status, education, income, and region. Those covariates were treated as auxiliary variables in the model (Asparouhov & Muthén, 2014). If those covariates were differentially associated with different classes, it would indicate good concurrent validity of the latent class identified. The final model reflected the integration of three submodels (which includes factor analysis for financial behavior, LCA for financial access, and multinomial logistic regression for covariates) estimated simultaneously using MPlus version 7.4 (Muthén & Muthén, 2012). Estimated odds ratios (OR) and 95% confidence intervals (CI) were reported. Sampling weight was used to account for the sampling selection probability and missingness. A schematic full model is illustrated in Figure 1.

Results

Regarding the sample sociodemographic profile, there were slightly more women (51.4%) than men (48.6%). The age distribution was relatively even across different age categories except fewer participants aged 18–24 years. Whites accounted for about 65% in the sample. Approximately 71% of participants had more than high school education. About half of the sample were married or cohabitated. Approximately 12% of participants were in the households with income less than \$15,000, while 30% were in the households with income \$75,000 and over. Most participant households had incomes ranging from \$15,000 to \$75,000. Approximately 55% of participants were either self-employed or

Figure 1. A schematic diagram for financial access latent class and financial behavior controlling for demographics, financial knowledge, and education.



had a part-time or full-time job (more details of sociodemographic information were published in Birkenmaier & Fu, 2019).

The initial model in which seven indicators were loaded on two factors had a good fit to the data using the CFA. The CFI and TLI was 0.96 and 0.93, respectively. The RMSEA was 0.06 (90% CI: 0.06–0.061). The SRMR was 0.04. The standardized factor loadings and standard errors are shown in Table 1. All factor loadings were above 0.4 and statistically significant except the budget variable. The two factors were correlated (Correlation coefficient = 0.57, $p < .001$), suggesting that financial behavior had two dimensions that were moderately correlated, but not identical.

We found that the U.S. population was heterogeneous with regard to access. Four subgroups were identified using LCA (Figure 2). The four-class solution had the smallest BIC value and “elbow” point in ABIC and AIC. The LMR test was significant for the comparison between 3- and 4-class models, but not significant between 4- and 5-class models (LMR chi-square test: $p = .07$). The entropy was 0.6. Taken together, thus, the four-class solution was the best possible solution. The four classes exhibited distinctly different probabilities on several important access measures and were

also interpretable, which further confirmed the four-class solution.

The *Thinly Banked* class (5.7%) was characterized by very low probability of access to all financial services. The *Limited Access* class (23.7%) was characterized by having high probability of access to a checking and saving account, relatively low probability of access to a credit card and mortgage or home equity loan, and very low probability of access to a retirement account and other investments. The *Working Families* class (33.9%) was characterized by high access to bank accounts, retirement accounts, mortgage or home equity loans, and credit cards, but limited access to investments other than the retirement account. The *Investors* class (36.7%) was characterized as having high access to all types of financial services (Figure 3).

The four classes have distinct demographic profiles (Table 2). The *Investors* class had more males than females, while the *Thinly Banked* class had more females than males. As age increased, the probability of being in a class with higher financial access increased. More Whites, well-educated respondents, and currently married respondents were more likely to be in a class with higher financial access (i.e., the *Working Families* or *Investors* class). People with higher household income were more likely to be associated with

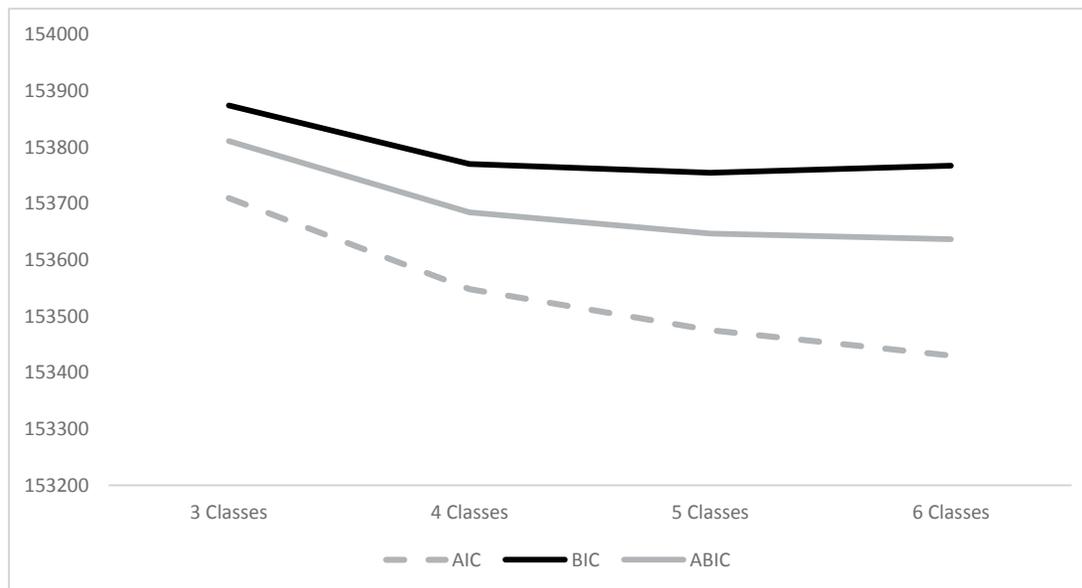
TABLE 1. Standardized Factor Loadings in the Measurement Model for Financial Spending and Financial Planning

	Financial Spending	SE	Financial Planning	SE
Balance spending	0.53	0.01		
Pay bills	0.85	0.01		
Debt	0.64	0.01		
Retirement account			0.63	0.01
Budget			0.33	0.01
Financial goal			0.71	0.01
Daily financial matters			0.55	0.01
Financial planning	0.57 ^a	0.01		

Note. SE = standard error.

^aCorrelation coefficient. Factor loadings and correlation coefficient were significant ($p < .001$).

Figure 2. Model fit indices for latent class analysis.



a class with higher financial access. Respondents working full-time or being retired were more likely to be in a class with higher financial access.

The final model integrated two continuous latent variables, a categorical latent variable with four classes, and other covariates. The latent class of access was regressed on two financial behavior factors and demographics, financial knowledge, and financial education using multinomial regression. The *Investors* class served as the reference group. The *Thinly Banked* class, *Limited Access* class, and *Working Families* class were compared to the *Investors* class, respectively. The OR and 95% CI estimates

for financial behavior factors and other covariates are presented in Table 2. Each OR was adjusted for other variables included in the table.

Thinly Banked Class Versus Investors Class

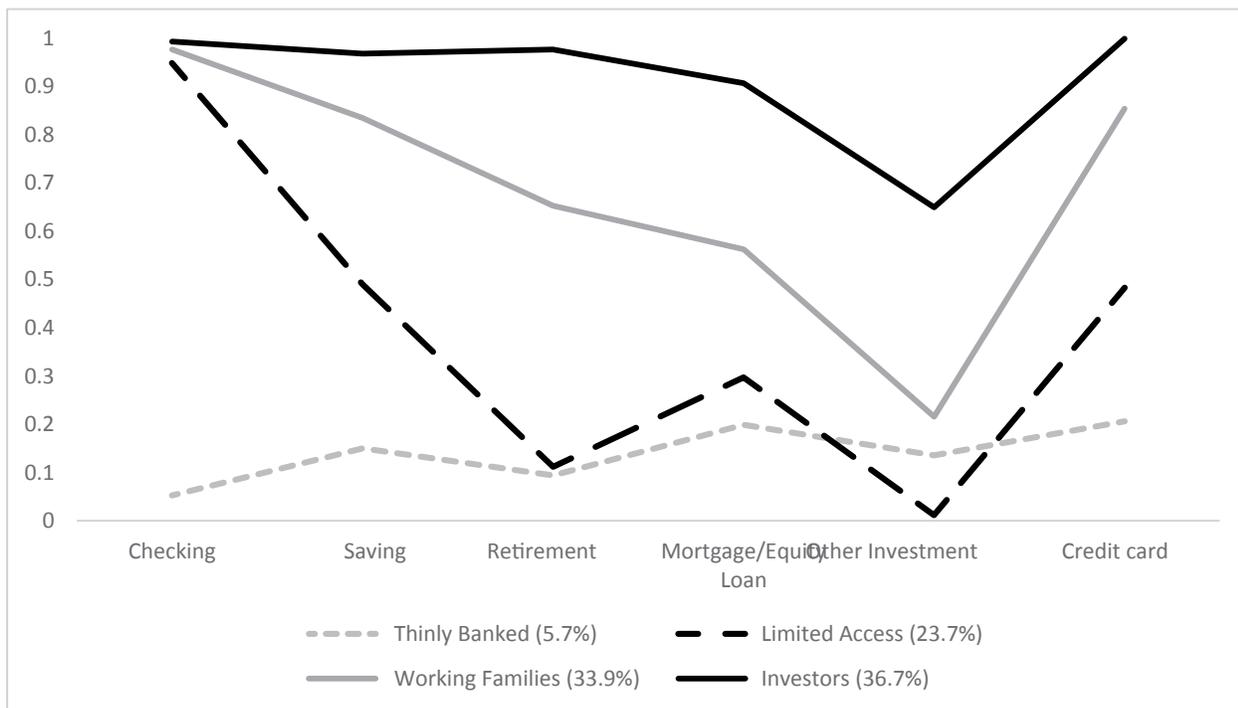
After controlling for other variables, the odds of being in the *Thinly Banked* class decreased by 18% for every point higher in spending behavior ($OR = 0.82, p < .05$) and 90% for every point higher in financial planning ($OR = 0.10, p < .05$), respectively. This finding suggests that better financial behavior is less likely to be associated with the *Thinly Banked* class. Good financial planning has a larger protective effect than financial spending behavior. The odds of

TABLE 2. Demographic Characteristics of the Sample by Latent Classes

Variable	Latent Class			
	Thinly Banked N(% ^a)	Limited Access N(% ^a)	Working Families N(% ^a)	Investors N(% ^a)
Gender				
Female	869 (52.6)	3,932 (57.6)	3,800 (52.9)	6,662 (47.1)
Male	607 (47.4)	2,315 (42.4)	2,762 (47.1)	6,580 (52.9)
Age				
18–24	365 (26.6)	1,457 (24.1)	858 (13.8)	374 (3.4)
25–34	307 (19.4)	1,253 (20.1)	1,490 (21.6)	1,955 (14.7)
35–44	265 (17.1)	887 (14.0)	1,160 (17.5)	2,265 (16.9)
45–54	288 (18.8)	979 (15.4)	1,146 (17.4)	2,606 (19.6)
55–64	199 (13.8)	927 (14.9)	1,007 (15.5)	2,668 (20.1)
65+	62 (4.2)	744 (11.5)	901 (14.2)	3,374 (25.3)
Race				
White	844 (50.5)	3,989 (57.2)	4,571 (63.0)	10,404 (72.4)
Non-White	632 (49.5)	2,258 (42.8)	1,991 (37.0)	2,838 (27.6)
Education				
Less than high school	348 (24.7)	905 (16.0)	507 (16.0)	526 (5.1)
High school or GED (General Education Diploma)	440 (32.3)	1,376 (24.0)	1,142 (20.0)	1,482 (13.8)
College	656 (41.6)	3,709 (57.1)	4,207 (62.7)	8,489 (63.9)
Postgraduate	32 (1.4)	257 (2.9)	706 (7.9)	2,745 (17.2)
Marital Status				
Single	827 (57.9)	3,021 (54.5)	2,234 (34.9)	2,014 (16.0)
Married	289 (22.7)	1,837 (28.0)	3,198 (48.1)	9,591 (71.4)
Divorced/ Widowed/Separated	360 (19.4)	1,389 (21.5)	1,130 (16.9)	1,637 (12.5)
Household Income				
Less than \$25,000	624 (43.6)	1,912 (31.4)	486 (7.7)	134 (1.3)
\$25,000–50,000	497 (33.2)	2,470 (38.9)	1,773 (27.8)	1,231 (9.9)
\$50,001–100,000	280 (18.6)	1,533 (24.5)	2,953 (44.5)	4,922 (38.0)
\$100,001 and over	75 (4.5)	332 (5.2)	1,350 (20.0)	6,955 (50.8)
Employment Status				
Self-employed	106 (7.1)	457 (7.2)	474 (7.2)	944 (7.0)
Work full-time	263 (16.5)	1,269 (20.4)	2,846 (42.0)	6,305 (47.5)
Work part-time	139 (9.6)	836 (13.3)	676 (10.5)	1,046 (7.7)
Homemaker	179 (10.9)	703 (10.4)	661 (9.9)	941 (6.9)
Full-time student	126 (9.2)	727 (11.9)	372 (6.1)	127 (1.2)
Permanently sick/disabled	188 (12.3)	662 (10.5)	238 (3.6)	144 (1.1)
Unemployed or laid off	369 (26.5)	664 (11.4)	296 (5.1)	223 (1.9)
Retired	106 (7.8)	929 (14.6)	999 (15.6)	3,494 (26.7)

^aWeighted percentage.

Figure 3. Item response probability from the 4-class model.



being in the *Thinly Banked* class was 52% lower for every additional point of financial knowledge and 41% lower for receiving financial education than not receiving financial education in schools or the workplace.

There was no regional difference between the *Thinly Banked* class and the *Investors* class. Women were much less likely to be associated with the *Thinly Banked* class than men ($OR = 0.59, p < .05$). As age increased, the odds of being in the *Thinly Banked* class were very low; the odds ratio changed from 0.10 to close to <0.01 . Non-Whites were more likely to be in the *Thinly Banked* class ($OR = 3.49, p < .05$). Respondents with lower education attainment had greater odds of being in the *Thinly Banked* class ($OR = 7.01-52.30, p < .05$). Respondents who were not married or not cohabitating were more likely to be in the *Thinly Banked* class ($OR = 10.89-11.83, p < .05$). As household income increased, the odds of being in the *Thinly Banked* class decreased dramatically ($OR = 12.86-4731.51, p < .05$). Full-time students, permanently sick or disabled people, and individuals without a job were most likely in the *Thinly Banked* class ($OR = 64.07-90.56, p < .05$), followed by homemakers ($OR = 16.17, p < .05$), self-employed ($OR = 10.71, p < .05$), retired

people ($OR = 3.82, p < .05$), and part-time working people ($OR = 2.56, p < .05$).

Limited Access Class Versus Investors Class

After controlling for other variables, the odds of being in the *Limited Access* class decreased by 22% for every point increase in the spending behavior ($OR = 0.78, p < .05$) and 88% for every point increase in the financial planning ($OR = 0.12, p < .05$). Financial planning had a larger effect than the spending behavior. The odds of being in *Limited Access* class was 46% lower for every additional point of financial knowledge and 43% lower for receiving financial education than not receiving financial education in schools or the workplace.

Individuals living in the South region had 54% higher odds of being in the *Limited Access* class than those in the Northeast region ($OR = 1.54, p < .05$). There was no gender difference in the likelihood of being in the *Limited Access* class. As age increased, the odds of being in the *Limited Access* class were very low ($OR = <0.01-0.08, p < .05$). Non-Whites were more likely to be in the *Limited Access* class ($OR = 2.40, p < .05$). As education

attainment increased, the odds of being in the *Limited Access* class significantly decreased ($OR = 3.46\text{--}12.57, p < .05$). The divorced/widowed/separated or never married people were approximately nine times as likely as those who were currently married or living together to be in the *Limited Access* class ($OR = 8.92\text{--}9.47, p < .05$). As household income increased the odds of being in the *Limited Access* class decreased ($OR = 18.27\text{--}5437.09, p < .05$). Full-time students and the permanently sick and disabled respondents were much more likely to be in the *Limited Access* class ($OR = 144.89$ and $81.21, p < .05$), followed by the unemployed ($OR = 30.72, p < .05$), homemaker ($OR = 14.01, p < .05$), self-employed ($OR = 10.14, p < .05$), the retired ($OR = 4.69, p < .05$), and part-time workers ($OR = 4.37, p < .05$).

Working Families Class Versus Investors Class

After controlling for other variables, the odds of being in the *Working Families* class decreased by 31% for every point increase in spending behavior ($OR = 0.69, p < .05$) and 66% in financial planning ($OR = 0.34, p < .05$). The odds of being in the working families class was 30% lower for every additional point of financial knowledge ($OR = 0.70, p < .05$) and was not associated with receiving financial education in schools or the workplace.

There was no regional difference between the *Working Families* and the *Investors* class. For women, the odds of being in the *Working Families* class was 30% lower than the odds for men ($OR = 0.70, p < .05$). As age increased, the odds of being in the *Working Families* class were very low ($OR = <0.01\text{--}0.12, p < .05$). Non-Whites were more likely to be in the *Working Families* class ($OR = 1.62, p < .05$). As education attainment increased, the odds of being in the *Working Families* class decreased ($OR = 1.58\text{--}3.50, p < .05$). The divorced/widowed/separated or never married people were approximately three times as likely as those who were currently married or living together to be in the *Working Families* class ($OR = 3.36\text{--}3.49, p < .05$). As household income increased the odds of being in the *Working Families* class decreased ($OR = 6.59\text{--}48.57, p < .05$). Full-time students and the permanently sick and disabled respondents were much more likely to be in the *Working Families* class ($OR = 23.10$ and $6.27, p < .05$), followed by the unemployed ($OR = 4.99, p < .05$), homemaker ($OR = 3.16, p < .05$), self-employed ($OR = 2.64, p < .05$), and part-time workers ($OR = 1.71, p < .05$). The retired and people with full-time

jobs had no difference being in the *Working Families* class (Table 3).

Discussion

This study builds on the few classifications of general consumer access conducted to date, and extends the literature to examine the relationship between the four financial access classes and financial behavior. The consumers in the *Investors* class (36.7% of the sample) have the highest probability of all of the classes for optimal access. The *Working Families* class (33.9%) also has a high probability of high access but less probability, compared to *Investors*, of access to investments other than retirement accounts and home loan products. Consumers in the *Limited Access* class (23.7%) are characterized by having high probability of access to a checking and saving account, but relatively low probability of access to a credit card and mortgage or home equity loan, and very low probability of access to a retirement account and other investments. Those in the *Thinly Banked* class (5.7%) have a very low probability of access to all financial services, as compared to the *Investors* class.

These results suggest that the majority of U.S. consumers have fair to strong financial access, with the exception of retirement accounts and other investments. Results of this study also suggest that financial spending behavior and financial planning are both important for access, especially for those with the least access. Financial counseling and planning, in particular, is especially important for financial access for the *Thinly Banked*, *Limited Access*, and *Working Families* classes. For every unit increase in financial planning, the odds of being in classes with the least access (*Thinly Banked* and *Working Families* classes) each decreased by over 88%. Thus, the associations point to the importance of financial planning, especially for those with the least access. Financial spending behavior is also important for access: the odds of being in *Thinly Banked*, *Limited Access*, and *Working Families* classes instead of being in the *Investors* class decreased by 18%, 22%, and 31% for every point higher in financial spending behavior respectively. Results regarding access are generally in agreement with Gutman et al.'s (2017) findings and are lower than Birkenmaier and Fu's (2016) findings.

Previous research suggests possible explanations for the association between behavior and access. One possible linkage is consumer credit reporting. For example, potential

TABLE 3. OR and 95% CI for Financial Behavior and Other Covariates From the Multinomial Logistic Regression Model for Latent Classes of Financial Access

	Thinly Banked (5.7%)			Limited Access (23.7%)			Working Families (33.9%)		
	OR	95% CI		OR	95% CI		OR	95% CI	
Fin. behavior									
Fin. spending	0.82	0.64	1.06	0.78	0.63	0.97	0.69	0.57	0.82
Fin. planning	0.10	0.07	0.13	0.12	0.09	0.16	0.34	0.28	0.40
Fin. knowledge	0.48	0.44	0.53	0.54	0.49	0.59	0.70	0.65	0.75
Fin. education	0.59	0.40	0.87	0.57	0.41	0.79	0.78*	0.61	1.00
Region									
Northeast	Ref			Ref			Ref		
Midwest	1.11*	0.70	1.76	1.17*	0.78	1.76	0.84*	0.61	1.16
South	1.35*	0.89	2.06	1.54	1.06	2.25	1.16*	0.86	1.56
West	0.82*	0.52	1.31	1.37*	0.91	2.07	1.07*	0.79	1.46
Female	0.59	0.43	0.80	0.81*	0.62	1.07	0.70	0.56	0.87
Age (years)									
18–24	Ref			Ref			Ref		
25–34	0.07	0.03	0.16	0.08	0.03	0.19	0.12	0.05	0.28
34–44	0.04	0.02	0.11	0.04	0.02	0.10	0.07	0.03	0.17
45–54	0.02	0.01	0.05	0.02	0.01	0.05	0.05	0.02	0.12
55–64	0.01	0.00	0.02	0.01	0.00	0.02	0.03	0.02	0.08
>64	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.01	0.06
Non-Whites	3.49	2.51	4.84	2.40	1.80	3.20	1.62	1.28	2.04
Education									
Graduate	Ref			Ref			Ref		
<HS	52.30	15.88	172.20	12.57	6.34	24.90	3.50	2.07	5.93
HS graduates	22.58	7.32	69.69	5.92	3.35	10.48	2.17	1.48	3.19
College	7.01	2.38	20.66	3.46	2.11	5.66	1.58	1.19	2.11
Marital status									
Married/living together	Ref			Ref			Ref		
Single	10.89	7.08	16.76	9.47	6.52	13.74	3.49	2.60	4.68
Separated /divorced/widowed	11.83	7.35	19.05	8.92	5.97	13.33	3.36	2.46	4.60
Income									
>\$75,000	Ref			Ref			Ref		
<\$15,000	4731.51	1214.10	18439.31	5437.09	1473.86	20057.53	48.57	13.27	177.78
\$15,000–\$35,000	317.98	158.57	637.66	543.48	294.28	1003.73	34.92	22.55	54.06
\$35,000–\$75,000	12.86	7.40	22.35	18.27	11.66	28.61	6.59	5.18	8.38
Employment									
Full-time job	Ref			Ref			Ref		
Self-employed	10.71	5.89	19.47	10.14	6.11	16.81	2.64	1.80	3.87
Part-time job	2.56	1.43	4.58	4.37	2.71	7.03	1.71	1.14	2.56

(Continued)

TABLE 3. OR and 95% CI for Financial Behavior and Other Covariates From the Multinomial Logistic Regression Model for Latent Classes of Financial Access (Continued)

	Thinly Banked (5.7%)			Limited Access (23.7%)			Working Families (33.9%)		
	OR	95% CI		OR	95% CI		OR	95% CI	
Homemaker	16.17	9.28	28.15	14.01	8.77	22.39	3.16	2.19	4.57
Full-time student	90.56	7.74	1059.76	144.89	12.73	1649.72	23.10	2.02	264.61
Permanently sick/disabled	84.10	28.84	245.22	81.21	29.36	224.58	6.27	2.27	17.33
No job	64.07	28.74	142.83	30.72	14.22	66.37	4.99	2.45	10.16
Retired	3.82	1.94	7.50	4.69	2.86	7.70	1.03*	0.72	1.47

Note. CI = confidence Intervals; HS = high school; OR = odds ratios; Ref. = reference group.

* $p > .05$, not statistically significant.

lenders often use consumer credit reports and scores to gauge financial risk, make credit decisions, and set the terms of the credit (e.g., interest rate, length of loan, etc.; Brevoort, Grimm, & Kambara, 2015; Consumer Financial Protection Bureau, 2015). Consumers that exhibit less desirable behavior, are unable to adequately manage their cash flow, and pay bills late, are more likely to run into trouble that affects their credit, and subsequently, their access.

This study contains the limitations of using cross-sectional survey data. Results do not provide implications for a causal relationship. While it is likely that behaviors influence access, the reverse may provide the opportunity to gain financial knowledge that influences behaviors. For example, Frijns et al., (2014) found that financial experience positively and significantly affected financial literacy. The sample has a somewhat higher education achievement than the general U.S. population (71% of adults age 18 and older with more than a high school education, compared to more than 59% for adults age 25 or older in the general population; Ryan & Bauman, 2016), which may introduce bias. In addition, questions about access were measured differently. Future research should examine the complexity of types of access with members of entire households, rather than just one respondent and a spouse/partner. Future studies should also examine the question of how classes of access associate with behaviors by taking into account the potential roles of other predictors. Using these results, policy, and practice efforts to promote access, such as those provided by the national Bank On movement (Caplan, 2014) and Cities for Financial Empowerment through its Account Standards (Cities for Financial

Empowerment, 2015), may consider broadening their foci to include behaviors to assist those with the lowest access. As behavior and access have a strong association, consideration of this relationship can be incorporated into interventions designed to increase access. For example, the products can be designed to teach, facilitate, and encourage strong spending and planning behavior through providing structured guidance, reminders, and feedback (perhaps using technology through SMS messaging) about behaviors manifested in access.

Implications

Likewise, financial counselors, planners, and educators can also incorporate these findings into their work with consumers by pairing bank accounts, retirement saving opportunities and other suitable investments, and safe credit options with behavior guidance and boundaries. Practitioners working with all populations, but particularly for those with lowest access, can teach and support strong financial behaviors through experiential financial learning with a variety of financial products and services suitable for these populations. Using action-oriented financial guidance within which consumers are educated and counseled on appropriate products while utilizing such products may be effective. Experiential learning could use behavioral theories, such as the Transtheoretical Model of Change (Xiao, 2008; Xiao, Newman et al., 2004; Xiao, O'Neill et al., 2004), which includes stages and processes of change, to guide people toward positive financial action in stages. Leveraging the association of behavior and access can result in assisting U.S. consumers in their endeavors toward financial stability and well-being.

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Disclosure. This manuscript has not been published in any form. The material in the manuscript will not infringe upon any statutory copyright. The article will not be submitted elsewhere while under JFCP review.

Funding. The author(s) received no specific grant or financial support for the research, authorship, and/or publication of this article.