

## Knowledge Is Not Enough: Race, Gender, and the Unequal Returns to Financial Literacy in U.S. Financial Inclusion

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### Abstract

Financial inclusion, defined as access to and use of mainstream financial services, remains unequally distributed across the United States population. However, the mechanisms underlying these disparities are not well understood at the intersectional level. This study investigates how race, gender, and objective financial knowledge (OFK) jointly influence financial inclusion outcomes, utilizing data from the 2021 National Financial Capability Study. Financial inclusion is modeled as both a four-category outcome and a continuous Financial Inclusion Depth index. The analysis estimates a full three-way interaction among financial knowledge, race, and gender using weighted multinomial logistic and beta regression, with robustness checks conducted via double-debiased machine learning. The results demonstrate a fifteen-fold difference in financial knowledge returns between Black women and White men, supporting a two-component decomposition of financial knowledge effectiveness: a threshold dimension representing movement into institutional finance and a depth dimension representing deepening integration within it. For White and Asian men, financial knowledge is effective at both levels. For Black men, it predicts depth gains but not reliable entry. For Black and Hispanic women, financial knowledge is largely ineffective at both levels. These findings suggest that the gap in financial knowledge returns reflects structural inequalities embedded in the design of the American financial system, rather than individual deficits, and have implications for targeted financial inclusion interventions.

### Introduction

In 2023, approximately 4.2% of U.S. households, or 5.6 million families, were unbanked. An additional 14.2% were underbanked and continued to rely on alternative financial services (AFS), such as payday loans and check cashers (Federal Deposit Insurance Corporation [FDIC], 2024). Financial exclusion results in significant short- and long-term consequences. Unbanked households face substantially higher costs for basic transactions, while exclusion from mainstream banking limits access to wealth-building tools, including affordable credit, savings accounts, and investment products (Rhine & Greene, 2006; Barcellos & Zamarro, 2021; Friedline, 2020). In particular, racial disparities in banking access remain pronounced. Black and Hispanic households are more than five times as likely to be unbanked and more than twice as likely to be underbanked compared to White households. These disparities remain despite decades of financial inclusion initiatives (FDIC, 2024).

Existing research on financial inclusion is characterized by two main limitations. First, most studies treat financial inclusion as binary, either banked or unbanked, thereby missing the full spectrum from complete exclusion to full institutional integration. Prior studies rarely measure the depth of financial integration; for example, individuals with only a checking account and those with savings, retirement, and investment accounts are typically coded identically. Second, while race and gender have been examined as separate predictors, few studies formally test whether the combined race-gender membership shapes returns to financial knowledge.

This study explores these gaps in the literature using the 2021 National Financial Capability Study. The research studies whether financial knowledge moves individuals toward institutional banking equally across race, gender, and their intersection, and whether it deepens financial integration, as measured by the Financial Inclusion Depth index, equally across race-gender groups. Collectively, these questions assess not only whether financial knowledge is positively associated with financial inclusion, but also whether the relationship is equitable and for which groups it is less effective.

### Literature Review

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Racial disparities in banking access originate from decades of state-sanctioned exclusion. Federal policies, such as Home Owners' Loan Corporation's (HOLC) practice of redlining, systematically directed investment toward White communities while denying it to communities of color. Redlining affected both residential segregation and multigenerational access to banking, mortgage credit, and wealth-building financial products (Baradaran, 2015, 2017; Faber, 2020). These exclusions persist today: banks frequently withdraw from neighborhoods as minority populations increase, while payday lenders expand their presence. When minority households gain access to financial services, it is often through what Charron-Chénier (2020) describes as predatory inclusion, in which access is provided on exploitative terms that undermine long-term financial well-being. Even within mainstream banking, cost structures unequally burden minority consumers. Faber and Friedline (2020) report that checking account costs are approximately \$190 higher annually for Black consumers and \$262 higher for Hispanic consumers compared to Whites.

Socioeconomic factors also account for the racial gaps in financial access, though their explanatory power varies across groups. Creamer and Warren (2024) report that observable socioeconomic characteristics explain approximately 67% of the Hispanic-White unbanked gap but less than half of the Black-White gap, indicating that Black households face additional barriers beyond socioeconomic differences. Barcellos and Zamorro (2021) similarly find that income, education, employment, financial literacy, and trust largely account for the Hispanic-White disparity, while a significant Black-White gap persists after controlling for these factors. Angrisani et al. (2019) find a similar pattern using longitudinal data, finding that individual-level factors reduced the unexplained gap by 46% among Hispanic older adults but by only 19% among Black older adults. Specific barriers differ by group. Minimum balance requirements disproportionately exclude Black households, while language barriers, identification challenges, and immigration-related barriers are more prominent for Hispanic households. Institutional distrust is much higher among both groups than among White households.

Financial literacy is associated with financial inclusion. Individuals lacking adequate financial knowledge may avoid mainstream banking due to confusion about account features, fear of fees, or prior negative experiences, and instead turn to costlier alternatives (Servon, 2017; Rhine & Greene, 2013). Barcellos and Zamorro (2021) document a strong association between low financial literacy and both unbanked status and AFS use. Calem et al. (2025) provide state-level evidence, using academic proficiency as a proxy for financial knowledge.

Prior literature often treats the gains from financial literacy as uniform across the population, whereas emerging evidence suggests some heterogeneity. Al-Bahrani et al. (2019) found that financial literacy education increased knowledge for all racial groups but benefited White respondents significantly more than minority respondents, even though minority respondents were more likely to participate. Brown and Riley (2025) found that financial literacy reduced healthcare-related financial hardship for White and Asian adults, had no effect for Black adults, and increased hardship for Hispanic adults, demonstrating that financial knowledge returns are fundamentally conditional on race. However, the pattern is not simply one of diminished returns for minority groups. Kim et al. (2019) found that financial knowledge more effectively moderated AFS use among Black and Hispanic respondents than among White respondents, suggesting that it may help minority households reduce, but not entirely eliminate, their financial exclusion arising from AFS use.

### Method

Data are drawn from the 2021 National Financial Capability Study (N = 23,665), supplemented with ZIP-code-level bank and AFS provider density from the U.S. Census Bureau's ZIP Code Business Patterns and broadband subscription rates from the American Community Survey (2017-2021).

Financial inclusion is measured using two dependent variables. The first is a four-category measure that distinguishes respondents who use only institutional finance, both institutional and alternative financial services (AFS), AFS only, or neither. The second, the Financial Inclusion Depth (FID) index, is a composite score ranging from 1 to 30 that captures within-category heterogeneity by accounting for the number and types of institutional accounts held and the number and types of AFS used. The key independent variables are objective financial knowledge (a seven-item quiz scored 0–7), race (reference: non-Hispanic White), and gender (reference: female). Models control for sociodemographic characteristics, economic resources, participation in financial education, ZIP-code-level supply-side access factors, digital infrastructure, and geographic region.

A weighted multinomial logistic regression was used to model the four-category financial

inclusion outcome, and a weighted beta regression was used to model FID. Both models include a full three-way interaction of financial knowledge, race, and gender, with results reported as average marginal effects (AMEs). Robustness was assessed using double-debiased machine learning (DML) with cross-fitted random forests plus lasso and gradient-boosted nuisance functions to calculate race-gender conditional average treatment effects (CATEs).

### Results

The study documents substantial variation in financial inclusion across race-gender groups. Institutional finance-only use ranges from approximately 45% among Black men to 78% among Asian men. The dual-use category, defined as simultaneous reliance on both institutional and alternative services, is far more common among Black respondents, with nearly half of Black men in this category compared to 20–25% of White and Asian men and women.

Regarding the first research question, financial knowledge returns on the probability of institutional finance-only use differ substantially across race-gender groups and exhibit intersectional characteristics. White men and Asian men have the highest AMEs; a one-unit increase in financial knowledge raises their probability of institutional finance-only use by 4.8 and 4.5 percentage points, respectively. Black women and Hispanic women have the lowest AMEs at 0.30 and 0.87 percentage points, representing a fifteen-fold difference between Black women and White men for identical knowledge gains. The gender gap in returns is widest among Hispanic respondents and narrowest among Black respondents, confirming that race and gender interact rather than operate additively.

For the second research question, beta regression results confirm a consistent gender gap in financial knowledge returns on FID across all racial groups, with men benefiting more than women in terms of depth of inclusion. White men have the largest AME (2.08 percentage points per unit of financial knowledge), while Hispanic women's AME is statistically insignificant. Notably, Black men's ranking shifts between models: while their AME ranked near the bottom for category transition in the multinomial model, they rank second in the beta regression (AME = 1.90). This indicates that financial knowledge deepens Black men's integration within their current level of financial inclusion, without consistently moving them into the institutional-finance-only category.

Double-debiased machine learning (DML; Chernozhukov et al., 2018) results confirm the primary findings across all eight race-gender groups in terms of rank ordering and significance, with somewhat smaller point estimates attributable to more flexible control for confounding. The gender gap and the comparatively low returns for Black and Hispanic women survive this rigorous causal correction.

### Discussion and Implications

The results support a two-component decomposition of financial knowledge effectiveness: a threshold dimension, reflecting how much financial knowledge moves an individual into institutional finance, and a depth dimension, indicating how much it deepens integration once inside. For White and Asian men, financial knowledge operates at both levels. For Black men, it predicts depth gains but not reliable entry, suggesting the barrier is structural rather than informational. For Black and Hispanic women, financial knowledge is less effective at both levels.

The study's results suggest that the prevailing policy narrative should be expanded. The persistent gap in the returns to financial knowledge persists, particularly among minority women, and does not reflect a knowledge deficit. Instead, it reflects structural features of the financial system, such as income verification requirements that disadvantage part-time workers, English-only services, and caregiving burdens that limit the capacity to deal with complex institutions. Financial education alone cannot compensate for a system that is not designed to accommodate such circumstances.

The findings also suggest that interventions should be targeted differently by group. For Black men, the barrier is specifically at the institutional finance gateway, indicating that alternative pathways into the banking system, such as Bank On accounts or second-chance banking programs, might be particularly effective. For Black women and Hispanic women, the constraints are more pervasive and may require broader structural interventions on the supply side.

Several limitations of the study should be noted. First, the cross-sectional data show an association but cannot confirm the direction of causality. For example, it remains unclear whether knowledge leads to banking or banking builds knowledge. Second, the data lacks several important control variables, including trust in financial institutions, social networks, credit history, and health status. Third, the study's broad racial categories may obscure important within-group variation for subgroups,

such as Vietnamese Americans, Indian Americans, or Mexican Americans, who have distinct financial histories.

### Conclusion

This study shows that the relationship between financial knowledge and inclusion is fundamentally shaped by race-gender position. At both threshold and depth dimensions, the gender gap varies by racial group, and race-gender groups do not exhibit uniform relationships between financial knowledge and inclusion. Modeling financial inclusion along these two dimensions suggests that particular race-gender differences reflect structural inequalities rather than individual effort or capacity.

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