

FRAUD DETECTION OVERCONFIDENCE AND FINANCIAL FRAUD VICTIMIZATION

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Abstract

We use data from a nationally representative survey in the U.S. to examine whether overconfidence in the ability to detect fraud is related to self-reported fraud victimization. Results show that male, younger, and higher-income respondents are more likely to exhibit fraud detection overconfidence than their respective counterparts. Further, respondents who are overconfident in their fraud detection ability are less likely to report losing money to financial fraud.

JEL classification: D91, G41, G53

Keywords: Financial Capability, Overconfidence, Fraud Victimization, Household Finance, Investment Fraud

1. Introduction

An emerging literature has begun identifying factors associated with financial fraud victimization (DeLiema et al., 2020a, 2020b, 2023; Engels et al., 2020; Fan & Yu, 2022; Kieffer & Mottola, 2017; Wei et al., 2021). Several studies show that financial literacy may be a protective factor against financial fraud exposure and victimization (Başaran Şahin et al., 2026; Cai et al., 2025; Hsu et al., 2021; Ibrushi et al., 2026; Wang & Xu, 2026; Yang & Li, 2026). However, the role of financial literacy overconfidence in fraud susceptibility, that is, a higher-than-average level of subjective (i.e., self-assessed) financial knowledge but a lower-than-average level of objectively measured financial knowledge (Porto & Xiao, 2016), is less well understood.

Prior research suggests that financial literacy overconfidence is associated with riskier investing behaviors (Hu et al., 2024; Kim et al., 2022), but only one study, to our knowledge, has examined the link between financial literacy overconfidence and financial fraud risk. Xiao et al. (2022) studied the association between consumers' financial literacy overconfidence and fraud susceptibility and found that overconfidence is associated with a greater susceptibility to fraud victimization. However, it is unclear whether other types of overconfidence are tied to fraud victimization. In the current study, we address this gap by identifying and testing a new construct, fraud detection overconfidence, to determine whether detection-specific overconfidence is associated with financial fraud victimization. We measure fraud victimization by asking respondents whether they lost money to financial fraud, thereby directly examining the role of overconfidence in explaining fraud victimization. Note that in this study, due to the limitations of the cross-sectional survey data used, only associations between overconfidence and fraud victimization are examined and no causal effects can be implied, which is in line with previous research (e.g. Ibrushi et al., 2026).

2. Data and measures

Data were collected on September 5-8, 2025, using a sample drawn from SSRS's Opinion Panel, a mixed-mode, probability-based panel designed to be representative of the U.S. adult population (18+). Interviews were conducted in English (N=1,004). A weight variable was developed using 2023 Current Population Survey benchmarks that enabled us to produce results representative of the U.S. population 18 and older (by sex, age, education, race/ethnicity, and region). Data collection was funded by the FINRA Investor Education Foundation (Fontes et al., 2026).

Financial fraud victimization was measured using the following question: “In the past year, have you lost money as a result of a financial fraud or scam?” with possible responses including 1-Definitely yes, 2-Probably yes, 3-Probably no, and 4-Definitely no. We recoded this variable to a dummy variable, with 1 meaning “definitely or probably lost money,” and 0 otherwise.

Our fraud detection overconfidence measure was constructed using two questions, a subjective and an objective measure of respondents’ ability to detect fraud. To assess respondents’ subjective ability, we asked: “In general, how confident are you in your ability to identify a potential financial fraud or scam before it costs you any money?” with responses ranging from 1 (*Not confident at all*) to 5 (*Extremely confident*). To assess their objective ability, we asked respondents if they would invest in a hypothetical investment opportunity that had the hallmarks of investment fraud, namely a steady, guaranteed, risk-free, very high return over an extended period: “If you heard about an investment opportunity that promises a guaranteed, risk-free 25% annual return every year for the next 5 years, would you invest in it?”, with possible responses including 1 (*Definitely yes*), 2 (*Probably yes*), 3 (*Probably no*), and 4 (*Definitely no*), in which higher scores indicate greater fraud detection ability.

Using respondents’ subjective and objective assessments of their fraud detection ability, we created two overconfidence measures, following previous research (Xiao et al., 2022). First, we created a dummy variable wherein a respondent was coded as *overconfident in fraud detection ability* (value of 1) if they reported their fraud detection ability as high but indicated they would likely invest in a hypothetical investment that

was likely fraudulent or *not overconfident in fraud detection ability* (value of 0) otherwise (see Table 1). Second, we constructed a continuous variable in which a higher score means a higher level of overconfidence. To do this, we converted both the subjective and objective measures of ability to detect fraud to percentile ranks and created a continuous variable by subtracting the percentile rank for the objectively assessed fraud detection measure from the percentile rank of the subjectively assessed fraud detection ability measure.

In addition, several demographic variables were included as control variables, including age (18-29, 30-49, 50-64, 65 or older), gender (male, female, other), marital status (married, not married), education (some college or lower, college degree or higher), income (<\$50,000, \$50,000-\$74,999, \$75,000-\$99,999, \$100,000 or more), and metropolitan status (center city, center city county, suburban, non-metro). Table 2 presents the summary statistics. Relative to those who did not report losing money to financial fraud, respondents who reported losing money had lower fraud detection overconfidence using both measures.

3. Empirical strategy and results

We use the following regressions to examine the correlates of overconfidence:

$$\text{Overconfidence_dummy} = \beta_0 + \gamma X + \varepsilon \quad (1)$$

$$\text{Overconfidence_percentile} = \beta_0 + \gamma X + \varepsilon \quad (2)$$

where β_0 is the intercept, X comprises the control variables, γ represents the effects of control variables on overconfidence, and ε is the random error term. Table 3, Column 1 shows significant associations between overconfidence (dummy) and a set of demographic variables (age, gender, and income). Specifically, respondents aged 65 or

older, women (marginally, $p=0.072$), and those with incomes below \$50,000 were less likely to be overconfident than their younger (aged 18-29), male, and higher-income (\$100,000 or higher) counterparts. As shown in Table 3, Column 2, we found the similar pattern of results when overconfidence was measured using a continuous variable with two minor differences, women (compared to men) and respondents with income below \$50,000 (compared to those with income of \$75,000 or higher) were less likely to be overconfident.

We further estimated the following regressions to examine if fraud detection overconfidence is associated with self-reported financial fraud victimization:

$$\text{Victim} = \beta_0 + \beta_1 \text{Overconfidence_dummy} + \gamma X + \varepsilon \quad (3)$$

$$\text{Victim} = \beta_0 + \beta_1 \text{Overconfidence_percentile} + \gamma X + \varepsilon \quad (4)$$

where β_0 is the intercept, β_1 represents the effect of overconfidence on victimization, X comprises the control variables, γ represents the effects of control variables on victimization, and ε is the random error term.

As shown in Table 4, Columns 1 and 2, logistic regression results indicate that overconfidence measured by both a binary and a continuous variable are negatively associated with losing money to financial fraud. For example, respondents categorized as overconfident in their fraud detection ability have odds of victimization that are 49% lower than those who are not overconfident (Table 4, Column 1). Similarly, each percentage point increase in the percentile rank of overconfidence is associated with a 6.6% reduction in the odds of victimization (Table 4, Column 2). In addition, respondents with income under \$50,000 are more likely to indicate losing money than their higher-income counterparts with income \$100,000 or higher. For robustness

checks, as seen in Table 4, Columns 3 and 4, OLS regression results show a similar pattern regarding the negative association between overconfidence and fraud victimization. For demographic variables, besides the negative association between income and victimization, age and education also show differences. Respondents aged 30-49 (compared to those aged 18-29) and with some college or less education (compared to those with a college degree or more education) are more likely to report losing money from frauds.

4. Discussion and conclusion

Using data from a national survey in the U.S. drawn from a probability-based panel, we find that fraud detection overconfidence is negatively associated with self-reported financial fraud victimization. Unlike financial literacy overconfidence, which was found to be tied to greater fraud susceptibility in Xiao et al. (2022), our findings suggest that those who overestimate their fraud detection capabilities are less likely to lose money to financial fraud. Put differently, overestimating one's ability to detect fraud may serve as a protective factor against fraud victimization. While we cannot yet explain why these different types of overconfidence might result in different outcomes, there is a body of research that suggests in some circumstances overconfidence is tied to positive outcomes.

Many studies have noted the deleterious effects of overconfidence, but some scholars have identified its constructive values or strategic benefits (Page, 2025; Shapira-Ettinger & Shapira, 2008). Shapira-Ettinger and Shapira (2008) treat overconfidence in the framework of hyperbolic discounting of future utility. They argue that "By artificially raising the estimation of future rewards, overconfidence can offset the

inhibitory effects of exaggerated preference for present rewards, thus producing greater incentive, greater perseverance, resolute performance, and consequently higher achievements. (p. 751).” In terms of financial fraud, it could be that people who are overconfident in their ability to detect fraud may be less attracted to or excited by the immediate financial gains that many scams promise, making them less susceptible to fraud. In addition, Page (2025) views overconfidence from an evolutionary perspective. He suggests that “evolution likely did not select for us to form accurate beliefs, but rather beliefs that can be useful. Overconfidence may actually be an adaptive feature of our cognition, providing advantages in various situations (p. 303).” We do not currently have a hypothesis connecting the evolutionary benefits of overconfidence proposed by Page (2025) to reduce fraud susceptibility. Nevertheless, we believe further exploration of this link can be fruitful.

Additionally, given the cross-sectional nature of the data, it is possible that the causal direction is reversed. That is, those who have not lost money to financial fraud may be more overconfident because they have not yet experienced fraud and its consequences. A further consideration is that our objective fraud detection variable measures only investment fraud, whereas our victimization measure captures general financial fraud. Respondents whom we coded as “overconfident” in their fraud detection abilities, may be skilled at detecting non-investment fraud, which we do not assess in this study. Future research (longitudinal and/or experimental) should replicate these findings and, importantly, more deeply explore reasons why two different types of overconfidence are tied to fraud victimization in different ways and the implications for theory building and practical guidance on this topic.

References

- Başaran Şahin, D., Valdes, O. Mottola, G., Parker, A., Hyde, K., Smucker, S., & Hoch, E. (2026). Capturing adults' familiarity with financial fraud: Relationships with targeting, engagement, and victimization. *Journal of Consumer Affairs*, 60(3), e70051. <https://doi.org/10.1111/joca.70051>
- Cai, S., Zheng, Y., Li, J., Tu, D., & Liu, H. (2025). Research on the impact mechanism of financial fraud risk among urban elderly in the context of population aging: Empirical data from China aging finance forum. *Finance Research Letters*, 77, 107068. <https://doi.org/10.1016/j.frl.2025.107068>
- DeLiema, M., Deevy, M., Lusardi, A., & Mitchell, O. S. (2020a). Financial fraud among older Americans: Evidence and implications. *Journal of Gerontology: Series B* 75, 861–868. <https://doi.org/10.1093/geronb/gby151>
- DeLiema, M., Li, Y., & Mottola, G. (2023). Correlates of responding to and becoming victimized by fraud: Examining risk factors by scam type. *International Journal of Consumer Studies*, 47(3), 1042-1059. <https://doi.org/10.1111/ijcs.12886>
- DeLiema, M., Shadel, D., & Pak, K. (2020b). Profiling victims of investment fraud: Mindsets and risky behaviors. *Journal of Consumer Research*, 46, 904–914. <https://doi.org/10.1093/jcr/ucz020>

Engels, C., Kumar, K., & Philip, D. (2020). Financial literacy and fraud detection.

European Journal of Finance, 26, 420–442.

<https://doi.org/10.1080/1351847X.2019.1646666>

Fan, J. X. & Yu, Z. (2022). Prevalence and risk factors of consumer financial fraud in China. *Journal of Family and Economic Issues*, 43(2), 384-396.

<https://doi.org/10.1007/s10834-021-09793-1>

Fontes, A., Valdes, O., Mottola, G., Ganem, R., & Green, S. (2026). *Confident you can detect financial fraud? Think again*. FINRA Investor Education Foundation.

[https://www.finrafoundation.org/sites/finrafoundation/files/2026-](https://www.finrafoundation.org/sites/finrafoundation/files/2026-03/Consumer_Insights_Brief_Confident_You_Can_Detect_Fraud_Think_Again.pdf)

[03/Consumer_Insights_Brief_Confident_You_Can_Detect_Fraud_Think_Again.pdf](https://www.finrafoundation.org/sites/finrafoundation/files/2026-03/Consumer_Insights_Brief_Confident_You_Can_Detect_Fraud_Think_Again.pdf)

Hsu, Y. L., Chen, H. L., Huang, P. K., & Lin, W. Y. (2021). Does financial literacy mitigate gender differences in investment behavioral bias?. *Finance Research Letters*, 41, 101789.

<https://doi.org/10.1016/j.frl.2020.101789>

Hu, Z., Zhang, D., & Xiong, X. (2024). Navigating risk: Impact of overconfidence in financial literacy on retirement wealth reserves. *Finance Research Letters*, 69, 106095.

<https://doi.org/10.1016/j.frl.2024.106095>

Ibrushi, D., Diaz, M. P., & Wang, S. (2026). Financial literacy and fraud vulnerability in digital finance: Evidence from the 2024 NFCS. *Finance Research Letters*, 94, 109674.

<https://doi.org/10.1016/j.frl.2026.109674>

Kieffer, C. & Mottola, G. (2017). Understanding and combating investment fraud. In O.

Mitchell, B. Hammond, & S. Utkus (Eds.), *Financial decision making and*

retirement security in an aging world. Oxford University Press.

<https://repository.upenn.edu/server/api/core/bitstreams/74a624e5-b316-44aa-9016-1570766fbca8/content>

Kim, H., Kim, K. T., & Hanna, S. D. (2022). The effect of investment literacy on the likelihood of retail investor margin trading and having a margin call. *Finance Research Letters*, 45, 102146. <https://doi.org/10.1016/j.frl.2021.102146>

Page, L. (2025). The strategic benefits of overconfidence. *Mind & Society*, 24(2), 303-322. <https://doi.org/10.1007/s11299-025-00355-8>

Porto, N., & Xiao, J. J. (2016). Financial literacy overconfidence and financial advice seeking. *Journal of Financial Service Professionals*, 70(4), 78-88. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4051786

Shapira-Ettinger, K., & Shapira, R. (2008). The constructive value of overconfidence. *Review of Law & Economics*, 4, 751. https://access.heinonline.com/HOL/Page?handle=hein.journals/rvleco4&div=38&g_sent=1&casa_token=wTGtjztYs8EAAAAA:FIrlOulq3TnsNOKh4XnYRCGTnfbe9wvU47i27n0XRe-KDA0gXKcf5IfY8ihxoqTPSqy8LhtO&collection=journals

Wang, J., & Xu, Y. (2026). How does financial literacy inhibit financial fraud? From the perspective of household risk preference. *Finance Research Letters*, 109, 110569. <https://doi.org/10.1016/j.frl.2026.110569>

Wei, L., Peng, M., & Wu, W. (2021). Financial literacy and fraud detection: Evidence from China. *International Review of Economics and Finance*, 76, 478–494. <https://doi.org/10.1016/j.iref.2021.06.017>

Xiao, X., Li, X., & Zhou, Y. (2022). Financial literacy overconfidence and investment fraud victimization. *Economics Letters*, 212, 110308.

<https://doi.org/10.1016/j.econlet.2022.110308>

Yang, H., & Li, X. (2025). Household financial environment, financial literacy and fraud risk. *Finance Research Letters*, 86, Part A, 108385.

<https://doi.org/10.1016/j.frl.2025.108385>

Table 1. Coding of Overconfidence in Ability to Detect Fraud

Objective Measure: Willingness to Participate in a Hypothetical Investment that had the Red Flags of Investment Fraud	Subjective Measure: Self-Reported Confidence in Ability to Identify Financial Fraud	
	Not Confident (response of 1, 2, or 3 on 5- point Likert Scale)	Confident (response of 4 or 5 on 5-point Likert Scale)
Willing to Participate (response of 1 or 2)	0 (Not Overconfident)	1 (Overconfident)
Not Willing to Participate (response of 3 or 4)	0 (Not Overconfident)	0 (Not Overconfident)

Table 2. Summary Statistics

Variable	Full Sample		Fraud Victimization=0		Fraud Victimization=1	
	Mean	SD	Mean	SD	Mean	SD
Overconfidence (dummy)	0.45	0.50	0.48	0.50	0.30	0.46
Overconfidence (percentile)	-1.80	38.98	0.15	38.89	-13.56	37.60
Age: 18-29	0.19	0.39	0.20	0.40	2.14	0.90
Age: 30-49	0.35	0.48	0.34	0.47	3.30	0.95
Age: 50-64	0.23	0.42	0.24	0.43	0.16	0.37
Age: 65 or older	0.22	0.42	0.23	0.42	0.44	0.50
Gender: male	0.48	0.50	0.49	0.50	0.20	0.40
Gender: female	0.51	0.50	0.50	0.50	0.20	0.40
Gender: other	0.01	0.11	0.01	0.11	0.45	0.50
College degree	0.62	0.49	0.64	0.48	0.55	0.50
Married	0.48	0.50	0.48	0.50	0.00	0.07
Income: <50k	0.43	0.50	0.41	0.49	0.50	0.50
Income: 50k-75k	0.16	0.37	0.17	0.37	0.46	0.50
Income: 75k-100k	0.14	0.34	0.14	0.35	0.58	0.50
Income: >100k	0.27	0.44	0.28	0.45	0.13	0.34
Metro: city center	0.34	0.47	0.33	0.47	0.11	0.31
Metro: city center county	0.35	0.48	0.35	0.48	0.19	0.39
Metro: suburban	0.18	0.38	0.18	0.38	0.40	0.49
Non-metro	0.14	0.35	0.14	0.35	0.33	0.47
Proportion of Sample	100%		86.85%		13.15%	
Observations (n)	1,004		872		132	

Table 3. Results of Regressions on Consumer Overconfidence

	(1) Overconfidence (dummy) Logit: OR	(2) Overconfidence (percentile) OLS: Beta
Age: 18-29 (RC)		
Age: 30-49	0.917 (0.195)	-0.085 (0.408)
Age: 50-64	0.630 (0.150)	-1.278** (0.447)
Age: 65 or older	0.515** (0.128)	-1.331** (0.447)
Gender: male (RC)		
Gender: female	0.766 (0.113)	-1.055** (0.282)
Gender: other	1.803 (1.050)	0.285 (1.312)
College degree	1.281 (0.211)	0.352 (0.311)
Married	1.102 (0.185)	-0.362 (0.325)
Income: <50k (RC)		
Income: 50k-75k	1.173 (0.255)	0.612 (0.417)
Income: 75k-100k	1.471 (0.349)	1.224** (0.456)
Income: >100k	1.989** (0.416)	2.082** (0.406)
Metro: city center (RC)		
Metro: city center county	1.337 (0.236)	0.151 (0.340)
Metro: suburban	1.061 (0.234)	-0.082 (0.416)
Non-metro	1.236 (0.298)	-0.132 (0.452)
Constant	0.671 (0.157)	3.889** (0.431)
Observations	1,004	1,004
Pseudo R-squared/R-squared	0.0399	0.0733

RC=reference category. OR=odds ratio. ** p < .01. * p < .05

Table 4. Results of Regressions on Financial Fraud Victimization

	<u>Logit: OR</u>		<u>OLS: Beta</u>	
	(1)	(2)	(3)	(4)
Overconfidence (dummy)	0.510** (0.119)		-0.075** (0.022)	
Overconfidence (percentile)		0.934** (0.024)		-0.008** (0.002)
Age: 18-29 (RC)				
Age: 30-49	1.796 (0.599)	1.804 (0.600)	0.071* (0.032)	0.071* (0.032)
Age: 50-64	1.001 (0.379)	0.974 (0.362)	0.000 (0.035)	-0.002
Age: 65 or older	1.016 (0.400)	1.026 (0.403)	0.001 (0.035)	0.003 (0.035)
Gender: male (RC)				
Gender: female	1.104 (0.246)	1.084 (0.242)	0.013 (0.022)	0.009 (0.022)
Gender: other	0.324 (0.331)	0.306 (0.320)	-0.078 (0.103)	-0.086 (0.103)
College degree	0.659 (0.152)	0.651 (0.151)	-0.052* (0.024)	-0.054* (0.024)
Married	1.420 (0.362)	1.391 (0.357)	0.040 (0.025)	0.035 (0.026)
Income: <50k (RC)				
Income: 50k-75k	0.554 (0.170)	0.562 (0.172)	-0.072* (0.033)	-0.070* (0.033)
Income: 75k-100k	0.523 (0.224)	0.535 (0.230)	-0.078* (0.036)	-0.075* (0.036)
Income: >100k	0.487* (0.164)	0.498* (0.169)	-0.084** (0.032)	-0.080* (0.032)
Metro: city center (RC)				
Metro: city center county	0.827 (0.212)	0.804 (0.205)	-0.024 (0.027)	-0.028 (0.027)
Metro: suburban	0.803 (0.269)	0.780 (0.266)	-0.027 (0.033)	-0.029 (0.033)
Non-metro	0.609 (0.202)	0.588 (0.196)	-0.058 (0.036)	-0.063 (0.036)
Constant	0.292** (0.112)	0.289** (0.110)	0.225** (0.035)	0.225** (0.035)
Observations	1,004	1,004	1,004	1,004
R-squared/Pseudo R-squared	0.0446	0.0437	0.0554	0.0540

RC=reference category. OR=odds ratio. ** p < .01. * p < .05.