FINANCIAL LITERACY AND CRIME INCIDENCE

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Abstract

Financial literacy is a determinant of individual wealth accumulation and social well-being. In this study, we examine the relationship between financial literacy and crime incidence using financial literacy data and crime data in the U.S. from 2009 to 2018. We posit that citizens' financial literacy is negatively associated with the crime rate because financially literate citizens are better at managing their wealth and improving their economic condition. They are less likely to have unfulfilled basic needs, and thus are less prone to crimes, especially crimes driven by economic need. We find that the financial literacy of citizens is negatively associated with crime rates. Furthermore, examining on a disaggregated basis, financial literacy is negatively associated with violent crimes and property crimes. Our findings reveal the necessity of mandating financial education programs in workplaces and highlighting the role of financial literacy in corporate governance. This study is the first to empirically address the criminological consequences of low financial literacy and underline the way to improve social security by increasing people's financial condition.

Keywords: Financial Literacy, Crime Incidence, Violent Crimes, Property Crimes

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1. INTRODUCTION

Despite significant political and scholarly attention given to the issue of financial literacy, we know little about its impact on crime rates. Recently an article in *The New York Times* said that the pandemic helped stir interest in teaching financial literacy (Carrns, 2021), and high school students in 21 states must now take a personal finance course in order to graduate (Carrns, 2020). Policy-making bodies, such as the Organization for Economic Co-operation and Development (OECD, 2005) and the U.S. President's Advisory Council on Financial Literacy (PACFL, 2008), have emphasized the significance of financial literacy, which "enables consumers of all ages and economic positions to stay attuned to the changes in their financial needs and circumstances and take advantage of products and services that best meet their goals" (Bernanke, 2011, p. 2). Lusardi and Mitchell (2014) opined that "While the costs of raising financial literacy are likely to be substantial, so too are the costs of being liquidity-constrained, over-indebted, and poor" (p. 38). Financial literacy can reduce crime driven by over-indebtedness and poverty. Further, crimes against property, such as theft and burglary, are much more closely linked to the socioeconomic situation of the person who committed the crime than other types of crimes, especially violent crimes (Drotárová, Misiuk, & Gedeonová, 2021).

Financial literacy enables people to be well-informed in a dynamic and complex financial marketplace and to make informed financial decisions. Financial decisions about investment, insurance, budgeting, retirement, and tax planning, all require people's financial knowledge and their

ability to process economic information. Financial literacy helps people protect themselves against the proliferation of financial products and services that are unsuitable, exorbitantly expensive, or exploitative. Accordingly, financial literacy saves people from poverty and unsustainable debt and helps them achieve financial prosperity (Bernanke, 2011; Drotárová et al., 2021).

We investigate the association between financial literacy and crime incidence and study the channels through which financial literacy is negatively associated with the U.S. crime rate. According to United Nations Office on Drugs and Crime Statistics and Surveys Section (UNODC SASS, 2012), economic stress causes an increase in criminal behavior[1]. Unwise financial decisions resulting in lost investments and usurious borrowing rates can leave people destitute, desperate, and likely to resort to crime to meet their unfulfilled basic needs. Citing the need to quantify financial knowledge, the U.S. added financial literacy questions to national surveys. The questions had originally been designed for the health and retirement study (Lusardi & Mitchell, 2008, 2011a, 2011c). The resulting data enable us to examine the relationship between financial literacy and crime incidence.

This paper makes three contributions to the literature. First, this study is the first to empirically address the criminological consequences of low financial literacy. Second, we use financial literacy data from National Financial Capability Study (NFCS) State-by-State Surveys and combine it with criminal, socioeconomic, and demographic data sources to conduct empirical tests for interdisciplinary research. Third, our findings shed light on ways to improve the security of our society and reduce the crime rate by increasing people's financial condition and promoting societal welfare through inclusive policies.

The remainder of this paper is organized as follows. Section 2 reviews the literature on financial literacy and crime rates and develops our hypotheses on general and property crimes. Section 3 describes the data collection and research design. Section 4 analyzes our results. Section 5 concludes and discusses the implications of the findings.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Financial literacy is a combination of the awareness, knowledge, skill, attitude, and behavior necessary to make sound financial decisions and achieve individual financial wellbeing (International Network on Financial Education [INFE], 2011). Financial literacy can be defined as understanding different financial areas, such as the management of personal finances, money, and investment. Engels, Kumar, and Philip (2020) find that more financially knowledgeable individuals are more likely to detect fraud. A lack of financial literacy can lead to unwise financial decisions and interfere with economic prosperity (Drotárová et al., 2021).

Prior to 2000, few researchers incorporated financial literacy into models, partly due to the difficulty of measuring individual financial literacy (Lusardi & Mitchell, 2011a). To translate the components of financial illiteracy into easily measured metrics, Lusardi and Mitchell (2008, 2011a, 2011c) designed questions to test respondents' understanding of interest rates, inflation, risk diversification, bonds, and mortgages (see Appendix); these questions appear in the NFCS State-by-State Surveys.

In addition to the financial literacy measure, educational attainment, a factor in crime reduction, correlates strongly with financial knowledge (Nguyen, 2019). However, we distinguish education from financial literacy. Even people who have graduated from high school (the highest level of school education K-12) can have low financial literacy; multi-variant regression results show that financial literacy has an effect beyond education (Lusardi & Mitchell, 2011a; Behrman, Mitchell, Soo, & Bravo, 2012; van Rooij, Lusardi, & Alessie, 2011, 2012; Lusardi & de Bassa Scheresberg, 2013). This finding results partly from the fact that many workplaces offer financial education programs in the workplace, and some people acquire financial knowledge from their colleagues (Lusardi & Mitchell, 2011b). Similarly, Mandell and Schmid Klein (2009) raised serious concerns about the long-term effectiveness of high school financial literacy courses as they found that these courses had an insignificant impact on students' subsequent financial behavior. All of these studies point to the superiority of our financial literacy index based on NFCS and education.

With the popularity of financially complex products and services, financially unsophisticated people have more difficulty understanding economic information and making informed decisions about financial planning, wealth accumulation, debt, and pensions (Lusardi & Mitchell, 2014; Gutiérrez-Nieto, Serrano-Cinca, & de la Cuesta González, 2017; Murendo & Mutsonziwa, 2017; Bajo & Barbi, 2018; Grohmann, Klühs, & Menkhoff, 2018; Deuflhard, Georgarakos, & Inderst, 2019). Previous studies show that the least financially literate are the most likely to make bad financial decisions, such as choosing high-interest mortgages and saving less (Moore, 2003; Campbell, 2006; Stango & Zinman, 2009; Lusardi & Tufano, 2009; Mottola, 2013; Utkus & Young, 2011). In their study of marginalized Roma communities in Slovakia, Drotárová, Misiuk, and Gedeonová (2021) find that low financial literacy is closely related to involvement in petty crime and in taking out predatory loans because the financial illiterate are less likely to be approved for bank loans.

In contrast, financially literate people make informed decisions and become financially stable and build long-term wealth. Financial literacy has a positive influence on financial well-being (Lee, Lee, & Kim, 2019) as the financially literate are more likely to manage and accumulate wealth through stock market participation, retirement planning, insurance participation, mortgage decisions, and

[1] During periods of economic stress, the incidence of robbery may double, and homicide and motor vehicle theft also increase, according to the report of UNODC SASS "Monitoring the Impact of Economic Crisis on Crime". Using data recorded by police in 15 countries on the incidence of robbery, homicide, and car theft, the report focused on the possible effects of economic stress, in particular during the global financial crisis of 2008–2009. In 8 of 11 countries undergoing economic upheavals, a link between economic factors and crime was established.

financial inclusion (Lusardi & Mitchell 2007a, 2007b, 2011a; Sivaramakrishnan, Srivastava, & Rastogi, 2017; Clark, Lusardi, & Mitchell, 2017; Lin, Hsiao, & Yeh, 2017; Goyal & Kumar, 2021). Klapper, Lusardi, and Panos (2012) find that individuals with higher financial literacy have more savings and therefore higher spending capacity. This relationship is more significant during times of economic crisis, suggesting that financial literacy may better prepare individuals to withstand macroeconomic shocks. To put it another way, the financially literate are less likely to be over-indebted and poor. Thus, it is reasonable to expect that with sufficient savings the financially illiterate are less likely to resort to crime. For example, if they have less psychological and economic pressure and enjoy life with many group and family activities, they are less likely to commit violent crimes, such as homicide, rape, robbery, and assault (Ngo & Puente-Moncayo, 2022). If they save more money and are able to purchase their favorite goods, they are less likely to commit crimes against property, such as burglary, larceny, and vehicle theft. Therefore, we state the following hypotheses in their alternative form.

H1: Financial literacy is negatively correlated with crime rates.

H2: Financial literacy is negatively correlated with violent crime rates.

H3: Financial literacy is negatively correlated with property crime rates.

3. DATA AND RESEARCH DESIGN

We obtain state-level crime rates over the period 2009–2018 on Uniform Crime Rates (UCR) from the U.S. Federal Bureau of Investigation Crime Data Explorer (https://crime-data-explorer.app.cloud.gov/pages/downloads) and obtain financial literacy data from 2009, 2012, 2015, and 2018 NFCS State-by-State Surveys, each of which consists of nationwide online surveys of more than 25,000 American adults (https://www.usfinancialcapability.org). In measuring the financial literacy of Americans in each state, the NFCS survey excerpt in the Appendix includes five questions to test respondents' understanding of interest rates, inflation, risk diversification, bonds, and mortgages. We construct an index of statewide financial literacy (*Literacy*) by calculating the average ratio of correct responses to five financial literacy questions for each state for the years 2009, 2012, 2015, and 2018. We used multiple imputations to fill in the missing data for the years 2010 to 2011, 2013 to 2014, and 2016 to 2017. The final sample contains 510 state-year observations. Following previous research (Siegel, Ross, & King, 2013; Light & Miller, 2017; Donohue, Aneja, & Weber, 2019), our control variables include criminogenic variables (e.g., police numbers), economic variables (e.g., GDP level, unemployment rates, income levels), and demographic variables (educational attainment, age groups, metropolitan residents). Table 1 gives a detailed description of all the variables.

Table 1. Variable definitions

Variables	*Definitions*	*Data source*
Crime	The natural logarithm of the number of crimes known to the police (per 100,000)	Federal Bureau of Investigation Crime Data Explorer[2]
Crimetype	The natural logarithm of the number of violent crimes or Property crimes known to the police (per 100,000)	
Violent	The natural logarithm of the number of violent crimes known to the police (per 100,000) obtained from the Federal Bureau of Investigation Crime Data Explorer	
Homicide	The natural logarithm of the number of homicides known to the police (per 100,000) obtained from the Federal Bureau of Investigation Crime Data Explorer	
Rape	The natural logarithm of the number of rapes known to the police (per 100,000) obtained from the Federal Bureau of Investigation Crime Data Explorer	
Robbery	The natural logarithm of the number of robberies known to the police (per 100,000) obtained from the Federal Bureau of Investigation Crime Data Explorer	
Assault	The natural logarithm of the number of assaults known to the police (per 100,000) obtained from the Federal Bureau of Investigation Crime Data Explorer	
Property	The natural logarithm of the number of property crimes known to the police (per 100,000) obtained from the Federal Bureau of Investigation Crime Data Explorer	
Burglary	The natural logarithm of the number of burglaries known to the police (per 100,000) obtained from the Federal Bureau of Investigation Crime Data Explorer	
Larceny	The natural logarithm of the number of larcenies known to the police (per 100,000)	
Vehicle	The natural logarithm of the number of motor vehicle thefts known to the police (per 100,000)	
Police	The natural logarithm of the number of police officers per 100,000 in the population	
Literacy	The average ratio of correct responses to financial literacy questions	NFCS State-by-State Surveys[3]
Lngdp	The natural logarithm of annual state-level GDP in millions	Bureau of Economic Analysis[4]
Unemploy	The proportion of unemployed labor force	U.S. Bureau of Labor Statistics[5]
Educ	The proportion of the population over age 25 with a high school degree or higher	Current Population Survey[6]
Youthpct	Percentage of men ages 15–29	Current Population Survey
Urbanpct	Percentage of people live in a metropolitan area	Current Population Survey
Lninc	The natural logarithm of per capita personal income in dollars	Bureau of Economic Analysis

[2] https://crime-data-explorer.app.cloud.gov/pages/downloads
[3] https://www.usfinancialcapability.org/
[4] https://apps.bea.gov/iTable/iTable.cfm?reqid=99&step=1#reqid=99&step=1&isuri
[5] https://www.bls.gov/web/laus.supp.toc.html
[6] https://www.census.gov/programs-surveys/cps/data/tables.html

We run pooled regressions with robust standard errors (Moody & Marvell, 2020) to test the impact of financial literacy on crime rates.

$$Crime_{it} = \alpha_0 + \alpha_1 Literacy_{it} + \alpha_2 Police_{it} + \\ + \alpha_3 Lngdp_{it} + \alpha_4 Unemploy_{it} + \alpha_5 Educ_{it} + \\ + \alpha_6 Youthpct_{it} + \alpha_7 Urbanpct_{it} + \alpha_8 Lninc_{it} + \varepsilon_{it} \quad (1)$$

$$Crimetype_{it} = \alpha_0 + \alpha_1 Literacy_{it} + \alpha_2 Police_{it} + \\ + \alpha_3 Lngdp_{it} + \alpha_4 Unemploy_{it} + \alpha_5 Educ_{it} + \\ + \alpha_6 Youthpct_{it} + \alpha_7 Urbanpct_{it} + \alpha_8 Lninc_{it} + \varepsilon_{it} \quad (2)$$

4. RESULTS ANALYSIS

Table 2 displays the descriptive statistics of the variables. The average crime rate for the 50 states and the District of Columbia in the U.S. is 3.743, which means there are 42 crimes per 10,000 people, and its standard deviation is 0.114. Meanwhile, the average state-level financial literacy is 0.581, which means over half of the people answered the surveys correctly, and the minimum is 0.492, slightly less than 0.5. As for the control variables, the unemployment rate varies dramatically from a minimum of 2.2% (Hawaii in 2017) to a maximum of 13.8% (Nevada in 2010). Besides, the average educational attainment is 88.4%, showing that nearly 90% of people have a high school diploma. On average, over half of the people (65.5%) reside in metropolitan areas.

Table 2. Descriptive statistics

Variable	*Obs*	*Mean*	*Std*	*Min*	*Max*
Crime	510	3.743	0.114	3.161	3.807
Violentcrime	510	2.541	0.186	2.011	3.130
Propertycrime	510	3.412	0.114	3.104	3.714
Literacy	510	0.581	0.034	0.492	0.670
Police	510	5.418	0.253	4.967	6.615
Lngdp	510	12.170	1.019	10.210	14.790
Unemploy	510	6.281	2.321	2.200	13.800
Educ	510	0.884	0.032	0.800	0.979
Youthpct	510	0.106	0.007	0.089	0.135
Urbanpct	510	0.655	0.256	0	1
Lninc	510	10.710	0.181	10.310	11.290

Note: Variables are defined in Table 1.

Table 3 is the Pearson correlation analysis of all the variables. Consistent with our expectation, there is a negative correlation between financial literacy and crime rate (-0.153, significant at the 1% level). The positive correlation between the number of law enforcement officers and the crime rate is also reasonable if we interpret it as reverse causality. For example, states with high crime rates are likely to hire more police officers. The positive correlation between unemployment and crime is consistent with previous studies, and one explanation is that unemployed people are more likely to engage in crime. Therefore, the board of directors should consider the consequence of crime and incorporate this concern into the process of improving corporate governance. Both the proportion of young males and the proportion of residents in metropolitan areas are positively correlated with crime rates (Ihlanfeldt, 2006).

Table 3. Pearson correlation analysis

	Crime	*Literacy*	*Police*	*Lngdp*	*Unemploy*	*Educ*	*Youthpct*	*Urbanpct*	*Lninc*
Crime	1								
Literacy	-0.153***	1							
Police	0.305***	-0.301***	1						
Lngdp	0.089**	-0.506***	0.171***	1					
Unemploy	0.441***	0.040	0.177***	0.197***	1				
Educ	-0.419***	0.523***	-0.221***	-0.375***	-0.538***	1			
Youthpct	0.308***	0.194***	0.142***	-0.109**	0.040	0.015	1		
Urbanpct	0.216***	-0.338***	0.299***	0.673***	0.222***	-0.224***	-0.018	1	
Lninc	-0.332***	-0.040	0.347***	0.130***	-0.441***	0.480***	0.119***	0.275***	1

*Note: Continuous variables are winsorized at the top and bottom 1%. ***, **, and * indicate the statistical significance at the 1, 5, and 10% levels.*

Column 1 of Table 4 shows the results of the pooled regression. The coefficient of financial literacy (*Literacy*) is -0.616 and significant at the 1% level (*t*-value = -3.03), which supports our *H1*. The coefficient of education (*Educ*) is positive but not significant at the 10% level, which is consistent with the claim that "financial literacy has an effect above and beyond education" (Lusardi & Mitchell, 2011b, p. 504). In conclusion, the regression results support our *H1* that financial literacy has a negative impact on crime rates.

Table 4. Regression results

Independent variables	*Crime*
	(1)
Literacy	-0.616*** (-3.03)
Police	0.101*** (4.11)
Lngdp	-0.019*** (-2.62)
Unemploy	0.009*** (3.53)
Educ	0.154 (0.74)
Youthpct	5.630*** (8.67)
Urbanpct	0.135*** (5.78)
Lninc	-0.291*** (-8.76)
Constant	5.754*** (18.10)
Observations	510
R-squared	0.455

*Note: Table 4 tests H1 and reports results of regressions of financial literacy (Literacy) on crime rate (Crime). The two-tailed statistical significance is indicated by ***, **, and * for 1, 5, and 10%, and the numbers in parentheses are t-statistics.*

To test our *H2* and *H3*, we use the categories of crime in UCR as the dependent variable and run the regression using different categories of crime separately. In general, crimes can be categorized as violent crimes (e.g., homicide, rape, robbery, and assault) or as property crimes (e.g., burglary, larceny, and vehicle theft). Table 5 shows the pooled regression results. Columns 1 and 6 show the impact of financial literacy on violent crimes and property crimes, respectively. Column 1 shows that the coefficient of financial literacy (*Literacy*) is -1.352 and significant at the 1% level (*t*-value = -3.73), and Column 6 shows that the coefficient of *Literacy* is -0.491 and significant at the 5% level (*t*-value = -2.51). After decomposing the violent crimes, we find that the coefficients of financial literacy (*Literacy*) in Columns 2–5 are all negative and significant at the 1% level, suggesting that financial literacy is negatively associated with the rate of violent crimes. We then decompose property crimes into three categories. The regression results in Columns 7–9 show that financial literacy is negatively associated with the rates of burglary and vehicle theft at the 1% level but has less impact on the rate of larceny.

Table 5. Regression based on different types of crime

Independent variables	*Violent*	*Homicide*	*Rape*	*Robbery*	*Assault*	*Property*	*Burglary*	*Larceny*	*Vehicle*
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*
Literacy	-1.352***	-3.642***	-1.967***	-1.994***	-1.135***	-0.491**	-0.636***	-0.339*	-1.226***
	(-3.73)	(-9.38)	(-5.88)	(-4.80)	(-2.66)	(-2.51)	(-2.71)	(-1.75)	(-3.17)
Police	0.198***	0.360***	-0.166***	0.263***	0.203***	0.088***	0.025	0.120***	-0.065
	(4.65)	(6.51)	(-4.87)	(5.28)	(4.49)	(3.62)	(0.90)	(5.02)	(-1.47)
Lngdp	-0.016	-0.013	-0.057***	0.020	-0.018	-0.018***	-0.019**	-0.014**	-0.022
	(-1.32)	(-0.97)	(-6.38)	(1.33)	(-1.38)	(-2.61)	(-2.41)	(-2.15)	(-1.56)
Unemploy	0.008	0.009*	-0.007	0.039***	-0.000	0.009***	0.017***	0.005**	0.009*
	(1.53)	(1.67)	(-1.54)	(6.72)	(-0.08)	(3.49)	(5.48)	(2.13)	(1.68)
Educ	-0.481	-0.228	1.518***	-0.476	-0.874*	0.199	-1.028***	0.629***	-0.096
	(-1.22)	(-0.50)	(4.24)	(-1.02)	(-1.88)	(0.98)	(-3.40)	(3.03)	(-0.23)
Youthpct	7.135***	5.097***	9.357***	4.232***	7.592***	5.384***	2.818***	5.147***	14.084***
	(5.40)	(3.63)	(8.82)	(2.93)	(4.97)	(8.83)	(3.71)	(8.71)	(10.82)
Urbanpct	0.174***	0.099*	0.061*	0.606***	0.095*	0.127***	0.091***	0.115***	0.352***
	(3.88)	(1.88)	(1.84)	(11.20)	(1.85)	(5.78)	(3.36)	(5.42)	(7.18)
Lninc	-0.089	-0.288***	-0.139**	0.003	-0.155**	-0.322***	-0.522***	-0.303***	-0.160**
	(-1.36)	(-3.63)	(-2.33)	(0.04)	(-2.08)	(-10.00)	(-11.34)	(-10.08)	(-2.33)
Constant	2.908***	3.553***	3.408***	0.656	3.688***	6.009***	9.213***	5.023***	3.644***
	(5.41)	(5.73)	(6.49)	(1.00)	(5.87)	(19.36)	(25.38)	(16.45)	(5.85)
Observations	510	510	510	510	510	510	510	510	510
R-squared	0.399	0.560	0.342	0.738	0.270	0.444	0.632	0.365	0.349

*Note: Table 5 tests H2 and H3 and reports results of pooled regressions of financial literacy (Literacy) on violent crime rate (Violent) or property crime rate (Property) as well as the components (Homicide, Rape, Robbery, Burglary, Larceny, Vehicle theft). The two-tailed statistical significance is indicated by ***, **, and * for 1, 5, and 10%, and the numbers in parentheses are t-statistics.*

In a sensitivity test, we winsorize all the continuous variables at the top and bottom 1% level. The new results are very similar to our main results. Thus, our main results are robust to the winsorization of the continuous variables.

5. DISCUSSIONS

Our study is subject to several limitations. First, we find that the impact of financial literacy on crime incidence is much larger for violent crime than for property crime, while one may expect that the financially illiterate would commit property crimes rather than violent crimes. Considering that mental illness is a common motive for violent crime (Fazel & Grann, 2006), for future research, it is worth investigating the association between individual financial well-being and mental health. A possible reason is that low financial literacy is associated with more severe mental illness and therefore more violent crimes.

Second, due to the unavailability of granular data, we use state-level data to test our hypothesis. We posit that the negative effect of financial literacy on the crime rate is driven by improved economic prosperity. That is, financial literacy positively influences individuals' financial condition and thus makes them less likely to commit crimes. Future research can use county-level and individual-level data to test the proposed channel and identify the criminals or victims.

Third, we measure financial literacy using the average ratio of correct responses to five financial literacy questions in NFCS. The designed questions to measure respondents' financial literacy are standard and consistent with the literature. Although the survey is intended for citizens statewide, the financially literate may be more willing to complete the survey compared to the financially illiterate. Therefore, future research can focus on reducing the noise of this financial literacy measurement and constructing more comprehensive and representative proxies for financial literacy.

Our paper indicates that our employers, schools, and banks should offer more mandatory and voluntary financial knowledge education programs, especially to residents of low-income communities (Kaiser, Lusardi, Menkhoff, & Urban, 2022). Once they learn about financial management, they likely will share their knowledge with friends and relatives. In this way, people will be less likely to commit crimes against property or each other. The most important finding from our study is the link between citizens' safety with the accumulation of their wealth.

6. CONCLUSION

In the current dynamic and complex economy, financial education must be a lifelong pursuit. Financial literacy allows people to live with dignity (Bernanke, 2011, p. 2). Our findings show that

improving financial literacy is like teaching people to fish rather than giving them a fish, and it helps people have a high standard of living by accumulating wealth and living in a crime-free community.

This paper is the first to study the criminological consequences of financial literacy. We find that financial literacy is negatively associated with individual financial stress and deters people from engaging in crimes. More specifically, we find that financial literacy is associated with the rates of violent and property crime. This finding is a wake-up call for the policymakers and other stakeholders who should take financial literacy into account and strive to improve the financial well-being of individuals and society. As for corporate governance, the findings alert employers to the potential negative impact of crime and facilitate improving the financial literacy of employees. The consequences of low financial literacy in workplaces, especially property crimes, can be a concern in corporate governance. For example, more larceny and vehicle thefts indicate that enterprises face a higher risk of stolen assets, damaged properties, and ruined reputations. Meanwhile, employees whose decisions are of economic significance to the whole organization should also be motivated to be financially knowledgeable and stay attuned to the changes in capital markets. With improved financial literacy, enterprises may reduce corporate crime through fraud prevention (Engels et al., 2020), and promote financial performance through prudent decision-making (Drotárová et al., 2021).

The outcomes of financial literacy in extant literature mainly focus on overall financial behavior and specific behaviors such as debt behavior, savings and investment behavior, stock market participation, and retirement planning (Goyal & Kumar, 2021). This paper investigates the impact of financial literacy on criminal behavior and reveals the widespread negative consequences of low financial literacy.

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APPENDIX. FIVE FINANCIAL LITERACY QUESTIONS FROM NFCS STATE-BY-STATE SURVEYS

The National Financial Capability Study (NFCS) is funded by the FINRA Investor Education Foundation and conducted by ARC Research. The overarching research objectives of the NFCS are to benchmark key indicators of financial capability and evaluate how these indicators vary with underlying demographic, behavioral, attitudinal, and financial literacy characteristics. The 2009, 2012, 2015, and 2018 NFCS State-by-State Surveys are nationwide online surveys conducted among over 25,000 American adults. State figures are weighted to be representative of each state in terms of age, gender, ethnicity, and education.

In measuring respondents' financial knowledge, the surveys include the following five basic financial concepts questions (correct answers indicated in bold):

1) Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?
A) More than $102
B) Exactly $102
C) Less than $102
D) Don't know
E) Refuse to answer

2) Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, with the money in this account, would you be able to buy…
A) More than today
B) Exactly the same as today
C) Less than today
D) Don't know
E) Refuse to answer

3) If interest rates rise, what will typically happen to bond prices?
A) They will rise
B) They will fall
C) They will stay the same
D) There is no relationship between bond prices and the interest rate
E) Don't know
F) Prefer not to say

4) A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less.
A) True
B) False
C) Don't know
D) Prefer not to say

5) Buying a single company's stock usually provides a safer return than a stock mutual fund.
A) True
B) False
C) Don't know
D) Prefer not to say