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Correlates of responding to and becoming victimized by fraud: Examining risk factors by scam type

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Abstract

Consumer fraud reports in North America have been increasing each year along with median fraud losses. Using survey data from 1375 American and Canadian consumers who previously reported a scam to a North American consumer complaint organization, this study examines the correlates of responding to and losing money to four categories of consumer fraud: opportunity-based scams, threat-based scams, consumer purchase scams, and phishing scams. Relative to opportunity-based scams that offer the promise of rewards, consumers were less likely to respond to and report losing money when solicited by threat-based scams and phishing scams. The odds of victimization were highest for consumer purchase scams. Risk factors, including gender, race, education, income, loneliness, financial fragility, and financial literacy, differed across scam categories, suggesting that victim profiles differ across fraud types. Some of the risk factors associated with responding to the scam solicitation (vs. ignoring it outright) were different from risk factors associated with victimization. Having advance knowledge of fraud prior to being exposed was protective across nearly all scam types. Results suggest that awareness about specific scams helps protect against financial loss. Additional research is needed on how to effectively deliver fraud awareness messages to those who are most susceptible.

KEYWORDS
consumer protection, elaboration likelihood model, financial fragility, financial literacy, fraud, persuasion

1 | INTRODUCTION

Consumer fraud is an international crime wherein a perpetrator 'intentionally deceives a target by misrepresenting, concealing, or omitting facts about promised goods, services, or other benefits and consequences that are nonexistent, unnecessary, never intended to be provided, or deliberately distorted for the purpose of monetary gain' (Beals et al., 2015, p. 7). Unlike in other forms of financial exploitation, fraud perpetrators are initially strangers to the consumers they target, although they may cultivate relationships to gain trust (Burnes et al., 2017). In the United States, an estimated 15.9% consumers lost money to fraud in 2017 (Anderson, 2019). Losses reported to consumer complaint agencies in the United States reached $3.3 billion dollars in 2020 (Federal Trade Commission [FTC], 2021), but given that the majority of incidents are never reported to authorities (Raval, 2020) or acknowledged by victims in surveys (DeLiema et al., 2020), researchers estimate that true losses are closer to $40 to $50 billion each year (Deevy & Beals, 2013).

Consumer protection agencies and advocacy organizations aim to inoculate consumers against fraud through scam awareness campaigns and targeted outreach. A significant challenge is that scams vary widely, and the consumer profiles that may be more or less susceptible to different types of scams may vary as well. Consumer protection agencies need guidance on what factors are associated with susceptibility to specific categories of fraud to better target fraud awareness messaging and develop interventions specifically for those most at risk.

1.1 | Limitations of prior research

Prior research on fraud risk factors has a number of methodological limitations. First, while research indicates that different types of people are uniquely susceptible to different frauds, and many scams target certain groups of people more than others (Button et al., 2009; DeLiema et al., 2020; Hanoch & Wood, 2021; K. Pak & Shadel, 2011), many studies group victims of very different scams together in statistical models (e.g., Schoepfer & Piquero, 2009; Titus et al., 1995). This can obscure victim risk factors that vary by fraud type. For consumer protection programmes to be effective and targeted to those most at risk, susceptibility factors must be analysed separately based on the category of the scam.

Another limitation is that victim profiling studies typically use general population surveys where respondents are asked to self-report prior fraud victimization (e.g., Anderson, 2004, 2013, 2019; FINRA, 2013; Schoepfer & Piquero, 2009; Titus et al., 1995). A limitation of that approach is that fraud is underacknowledged and underreported in survey research (see DeLiema et al., 2020), likely due to social desirability bias or refusal to acknowledge victimization (Button et al., 2009). Studies that survey identified ('known') fraud victims using samples provided by law enforcement agencies or scammers' victim lists, as well as those that compare law enforcement case data to complaint data (Raval, 2020), shed light on this issue. In the Senior Fraud Risk Survey, the FINRA Investor Education Foundation (2007) found that only half of 101 known victims admitted losing money after being misled or defrauded by a broker. Similarly, DeLiema et al. (2020) found that only 48% of known investment fraud victims admitted that they invested and lost money in a scam. These studies suggest that there is substantial measurement error in general population surveys because many victims misreport that they have not experienced fraud.

The third limitation of prior research is that it fails to differentiate those who do not lose money in a scam when they are solicited from those who were never exposed to a solicitation in the first place. The latter group of unexposed non-victims may share characteristics with victims but were never targeted by the specific scam being studied. Moreover, there are also important differences among exposed non-victims. Some individuals recognize the scam immediately and do not respond, whereas others respond to the scammer or solicitation—they click on the link, pick up the phone, reply to the message—but still do not lose money. Either these targets eventually grasp the nature of the situation before paying, or a financial institution, family member, friend, or other entity intervenes before the money is lost. No prior studies have specifically examined the differences between fraud targets who initially trust and believe the scam solicitation but stop before losing money, and fraud targets who ultimately become victims.

These issues limit our understanding of who is most susceptible to fraud. The present study addresses these limitations using a survey of American and Canadian consumers who reported incidents of attempted and successful fraud to a non-governmental consumer complaint organization—the Better Business Bureau (BBB). Specifically, this study examines the demographic, psychological, and contextual factors associated with responding to different scams and losing money after weighting the data to adjust for demographic differences in the propensity to report fraud. It addresses the limitations of prior studies in the following ways.

1. The study controls for fraud exposure—all survey respondents were targeted by some type of scam, thereby avoiding misclassifying non-exposed individuals as non-victims.
2. Fraud victims in this survey acknowledged that they lost money and reported the scam to the BBB, reducing measurement error present in general population surveys in which many victims fail to acknowledge that fraud has occurred.
3. Targets and victims of a range of different scam types are included in the survey, allowing risk factors to be assessed separately by the category of scam as well as jointly for scams overall.
4. The survey captures information on whether targets initially responded to the solicitation/scammer, in addition to whether they ultimately lost money, allowing us to assess two outcomes separately—responding to fraud and victimization by fraud.

1.2 | Study purpose

At present, there is little theoretically derived research on the factors associated with responding to different types of fraud solicitations. And once a target responds to a solicitation, there is little research on what additional situational factors and emotional/psychological appraisals of the solicitation or scammer differentiate those who lose money (victims) from those who end the interaction before losing money. In the present study, we examine whether a theory of persuasion—the elaboration likelihood model (ELM; Petty & Cacioppo, 1986)—can be applied to consumer fraud and how hypothesized risk factors derived from this theory differ in their degree of influence on susceptibility to different fraud types. Frauds are categorized as either (1) *opportunity-based scams* involving positive financial or socioemotional rewards, (2) *threat-based scams* involving threats of negative consequences, (3) *consumer purchase scams* involving non-existent or unnecessary products and services, including online shopping and online marketplace frauds, and (4) *phishing scams* wherein scammers impersonate a trustworthy entity using email, websites, or text messages to elicit personal information. The goal is to inform

more targeted education and intervention to help inoculate people against fraud.

2 | LITERATURE REVIEW AND THEORETICAL BACKGROUND

2.1 | Elaboration likelihood in the context of fraud

According to the ELM of persuasion (Petty & Cacioppo, 1986), an individual's assessment of a persuasion message is affected by the degree to which they elaborate on (think about) information related to a position advocated by the persuader. In the case of *low* elaboration, information is processed via a 'peripheral route' in which the individual relies on heuristic shortcuts and basic cues to quickly assess whether they agree or disagree. In the case of *high* elaboration, the model proposes that individuals process information via a 'central route' that involves dedicating attentional resources to carefully scrutinize the persuader's arguments and cross-reference the message with existing knowledge. In the decision-making literature, Kahneman (2011) refers to these two routes as System 1—fast, shallow information processing—and System 2—slow, effortful, conscious processing.

Both forms of processing can lead to agreement with the persuader. An individual who processes the arguments via the central route (System 2) has engaged in issue-relevant thinking, carefully considering their preexisting attitudes and goals in relation to the position advocated by the persuader. If their attitudes already align with those of the persuader, and if the arguments are perceived to be sound, elaboration will likely lead to agreement (Petty et al., 1981). If persuasion is achieved through the peripheral route (System 1), the individual relied on peripheral cues rather than intentional thinking to arrive at the advocated position.

Many factors affect the degree of elaboration and likelihood of agreeing with a persuader. For example, the greater the personal relevance of an issue, the greater the likelihood of elaboration (Petty & Cacioppo, 1986), whereas the 'liking heuristic' (Cialdini, 2007) prompts lower elaboration, particularly on issues that are less personally relevant. In the liking heuristic, the more the target likes the persuader, the more they rely on a simple decision rule: *I like the source, so I agree* (Chaiken, 1980). In the context of scams, having favourable feelings towards a fraudulent product advertisement or a friendly scammer may lead to knee-jerk appraisals of credibility and incorrect risk appraisals.

2.2 | Elaboration in the context of loneliness and social isolation

Social isolation—the extent to which a person spends their time alone—and loneliness, an emotional state in which a person subjectively feels alone (Holt-Lunstad et al., 2015), are hypothesized risk factors for fraud. A recent study found that loneliness was associated with poorer financial and healthcare decision making among subjects with low cognitive ability (Stewart et al., 2020). Lonely consumers may elaborate more on personally-relevant offers that present a chance to feel special or important, such as lottery and sweepstakes scams, or the feeling of being loved and needed, such as romance scams (Buchanan & Whitty, 2014). These are common examples of 'opportunity-based scams'. If the targets' existing needs and desires align with the persuader's promises, they may be more drawn to respond. Our hypothesis is as follows:

> **Hypothesis 1.** *Loneliness is positively associated with responding to and victimization by opportunity-based scams.*

Scammers also use social isolation as a tactic to actively manipulate targets to hide information from trusted friends and family members (DeLiema, 2018). In the 'grandparent scam' and government imposter scams, for example, scammers instruct their targets to keep the interaction confidential. This prevents targets from seeking advice from others that could induce greater elaboration, thereby foiling the scheme. Among those who respond to a scam, we predict the following:

> **Hypothesis 2.** *Having no one available to talk with about the solicitation is positively associated with victimization across all scam types.*

2.3 | Financial fragility increases the personal relevance of opportunity-based scams

Many scams use phantom fixation—dangling the promise of rewards—to entice their targets to comply (Whitty, 2013). 'Get rich quick' schemes and other scams that promise a windfall of money or an easy way to eliminate debt may be more persuasive among those experiencing financial hardship because this condition increases the personal relevance of the offer, leading to more elaboration. Indeed, prior research has shown that victims with lower housing wealth are more susceptible to prize and lottery fraud (DeLiema et al., 2020). We therefore predict the following:

> **Hypothesis 3.** *Financial fragility—defined as having little to no access to emergency funds—is positively associated with responding to and victimization by opportunity-based scams.*

2.4 | Prior scam knowledge and elaboration

Of paramount interest to consumer protection agencies and consumer advocates is whether efforts to improve financial literacy and educate the public about fraud are effective. According to the ELM, individuals are more likely to elaborate on a persuasion message when they have prior knowledge about the topic. Using central route processing, the

target can cross-reference the offer or threat with their existing knowledge of fraud. Scheibe et al. (2014) conducted a study where at-risk consumers were called by a volunteer fraud educator and forewarned about one of two different scams. Two weeks later they received a mock scam sales pitch over the phone. The consumers who had been forewarned about the same scam that was later pitched to them were significantly less likely to respond to the solicitation than were consumers who were forewarned about a different scam. Although the mechanism driving this forewarning effect is not known, the Scheibe et al. (2014) study supports the ELM by showing that arming individuals with scam-specific knowledge has an important effect on subsequent persuasion. In the present study, we predict the following:

Hypothesis 4. *Knowledge about the scam in advance of being targeted is negatively associated with responding to the scam solicitation, and this relationship will hold across all scam categories.*

2.5 | Financial literacy and perceived financial competence as forms of prior knowledge

Financial literacy is a broad concept that assesses one's 'ability to use knowledge and skills to manage financial resources effectively for lifetime financial security' (Goyal & Kumar, 2020, p. 81). Studies show that higher financial literacy is associated with better financial decision making, including repaying credit card debt (Hamid & Loke, 2021), lower mortgage and credit card interest rates (Huston, 2012), and refinancing to secure more favourable mortgage terms (Bialowolski et al., 2021). Researchers have proposed that poor financial literacy plays a role in fraud susceptibility as well, indicating that individuals with lower literacy may engage in more peripheral route processing of a persuasive message, especially in scams that involve financial concepts. For example, Pak and Shadel (2011) found that older lottery fraud victims scored poorly on a test of financial literacy, and DeLiema et al. (2018) found that financial literacy was negatively associated with investing with an unknown person. It is unknown whether poor financial literacy is associated with susceptibility to scams that are unrelated to money-making or purchase opportunities, such as threat-based and phishing scams.

Perceived financial competence (i.e., perceived ability to manage day-to-day financial matters such as paying bills and tracking expenses) may also affect the degree of information processing when confronted with financial fraud. Those who assign a high rating to their financial competence may be less likely to engage in elaboration and instead rely on heuristic shortcuts, particularly when persuaders use emotional arousal and other forms of distraction that encourage peripheral processing. Based on prior research and the ELM, our predictions related to financial literacy and perceived financial competence are as follows:

Hypothesis 5. *Financial literacy is negatively associated with victimization by opportunity-based scams and consumer purchase scams but not associated with threat-based and phishing scams.*

Hypothesis 6. *Perceived financial competence is positively associated with victimization by opportunity-based scams and consumer purchase scams but not associated with threat-based and phishing scams.*

2.6 | The impact of emotion on elaboration likelihood

Many frauds incorporate powerful visceral appeals to put the target in a state of high emotional arousal. Positive and negative emotions limit elaboration and encourage the use of heuristic shortcuts (Kahneman, 2011). Some scams evoke positive emotional arousal by promising the target an opportunity to make money, find romance, or get out of debt easily. Other threat-based scams evoke fear and anxiety to convince the target that they must pay money to avoid a negative consequence, such as a computer virus or legal problems, or to get a loved one out of serious trouble. Kircanski et al. (2018) found that older adults in positive and negative arousal states were more likely to want to purchase a product in a misleading advertisement than older adults in a neutral emotional state, perhaps because emotional arousal inhibits elaboration.

Despite extensive research on the impact of emotional arousal on decision making, no studies have examined the differential effects of positive and negative emotions on susceptibility to different forms of fraud that incorporate diverse visceral appeals. Based on research on how emotions affect elaboration likelihood (see Petty & Briñol, 2015), our hypotheses are as follows:

Hypothesis 7. *Having an opportunity-seeking mindset is positively associated with responding to and victimization by opportunity-based scams.*

Hypothesis 8. *Feeling intimidated is positively associated with responding to and victimization by threat-based scams.*

We do not predict that positive, opportunity-seeking feelings are associated with responding to threat-based scams or phishing scams or, conversely, that negative feelings of fear and anxiety increase the likelihood of responding to opportunity-based scams or consumer purchase scams.

3 | METHODS

3.1 | Survey development and administration

In 2017 and 2018, a study author collaborated with the FINRA Investor Education Foundation and BBB Institute for Marketplace Trust to

conduct a study focusing on the process of fraud victimization. To inform survey development, 18 in-depth interviews were conducted with individuals local to the Washington, D.C., area who were targeted by fraud and reported a scam through the BBB Scam Tracker website (BBB.org/ScamTracker). All reports were reviewed by BBB staff and confirmed as fraud. Half of these participants lost money, and half did not. Interviews revealed situational characteristics of the scam encounters and illustrated the personal knowledge, beliefs, and values of the targets. Findings were used to inform survey items and formulate hypotheses.

An online survey was developed and piloted with a sample of 108 individuals who reported fraud to BBB; 31% were victims. Several items were revised after the pilot phase and a final 89-item online survey was fielded in August 2018. Survey invitations were emailed to approximately 90,000 United States and Canadian residents who submitted a fraud report to Scam Tracker between 2015 and 2018. Participants were told that the purpose of the survey was to learn more about the scam they reported and the factors related to being targeted by scams. A reminder email was sent 1 week later.

Before entering the survey, participants read an online consent form and agreed to participate. The study protocol was reviewed and approved by Sterling IRB, ID6442. The survey (Appendix A) asked respondents specific questions about the scam they reported in addition to demographic, psychological, and contextual questions. No personally identifying information was collected. Respondents were immediately discontinued if they had submitted a fraud report on behalf of someone else and were not the targets of the solicitation themselves. A total of 2364 respondents started the survey (~2.3% response rate) and there were 1407 completes.

3.2 | Categorizing scams

Unlike financial institution-specific complaints submitted to the Consumer Financial Protection Bureau or the U.S. Federal Reserve System (see Hogarth & English, 2002), BBB receives consumer complaints about a wide variety of consumer fraud. Survey respondents could select the scam they initially reported to BBB from a dropdown list of the 12 most common reported scams or could select 'other' and self-describe the scam they experienced. Narrative descriptions of 'other' scams were read and categorized by a member of the research team, generating a new total of 27 distinct scam types, including the original 12.

Scams were divided into four categories based on the primary story—that is, offer, promise, or threat—used to convince targets to comply with the solicitation. *Opportunity-based scams* (n = 387, 27.5%) are frauds that promise the target something positive and rewarding—lottery winnings, a prize, a chance to receive significant money either through a job opportunity, government grant, advance fee loan, or investment; the chance to reduce debt; or the promise of romance/partnership. *Threat-based scams* ($n = 562$, 39.9%) are frauds in which scammers convince the target that something bad has happened and they must pay money to avoid a negative consequence. Frauds include bogus tax collection, government impostor, debt collection, tech support, grandparent scam, extortion, and unnecessary home repairs. *Consumer purchase scams* ($n = 226$, 16.1%) involve paying for products and services that do not exist or that were intentionally misrepresented to consumers. They include online marketplace scams, pet adoption, health insurance enrolment, bogus charities, and other general consumer scams like home repair and billing for nonexistent subscriptions. *Phishing scams* ($n = 200$, 14.2%) are fraudulent emails, text messages, or fake websites that impersonate a trustworthy entity and are intended to mislead the target into providing personal information or passwords.

A final group of scams were uncategorizable because the respondent did not provide sufficient information or because they were reporting a scam targeting a business entity. Thirty-two uncategorizable reports were removed from the analysis: fake invoices, credit card fraud, and scams recorded as 'other' without any description provided ($n = 32$, 2.3%). Table 1 presents information on the proportion of respondents who reported each of these scam types and whether they responded and lost money.

3.3 | Variables

3.3.1 | Dependent variables

Scam response was assessed by asking respondents, 'Which of the following best describes your experience with the scam you reported?' Those who selected, 'I suspected it might be a scam but continued' or 'I didn't know or suspect it was a scam' were coded as responded = '1'. Fifty-two percent of the sample were coded as 'responded to the scam' (= 1). Respondents who selected the last option, 'I immediately knew it was a scam and did not engage at all (ignored the email/letter/phone call/salesperson, hung up the phone, etc.)' were coded as '0' (did not respond).

Victimization was measured by asking those who responded to the scam: 'Did you lose money on the scam?' Those who selected 'yes' were coded as '1' (victims), and those who selected 'no' were coded as '0' (non-victims). Those who selected 'not sure' ($n = 28$) were dropped from the victimization analyses. Of the 1347 valid responses, 307 people were victims (22.8%). Median reported losses were $650 but ranged from $7 to $980,000. Because victimization is treated dichotomously in the models, outliers were retained after assessing the participant's other survey responses and determining that they were reasonable.

3.3.2 | Independent variables

Table 2 presents overall sample characteristics. Demographic variables include gender (male = 1, 32.7%) and age (continuous, mean = 56.4, standard deviation [*SD*] = 14.1). Other demographic and income categories were condensed for the analysis. These include race (non-Hispanic white = 1, 79.6%), marital status (married/partnered = 1,

TABLE 1 Sample size and percent of respondent who engaged and who were victims, overall and by scam type

	N	% of total	Responded, *n* (%)	Victimized, *n* (%)
Opportunity-based scams	387	27.5%	279 (72.1)	111 (29.2)
Threat-based scams	562	39.9%	229 (40.8)	97 (17.6)
Consumer purchase scams	226	16.1%	175 (77.4)	92 (42.1)
Phishing scams	200	14.2%	36 (18.0)	7 (3.5)
Uncategorizable scams	32	2.3%	21 (65.6)	8 (25.0)
All scams	1407	100.0%	740 (53.0)	315 (22.8)

Note: Twenty-eight respondents selected 'not sure' when asked if they lost money. These individuals were not included in the % victim calculation. Those who reported uncategorizable scams were not included in regression and SEM models.

46.8%), education [high school degree or less = reference (14.6%), some college/associate degree (38.6%), bachelor's degree (46.8%)], and income [less than $25,000 = reference (14.1%), $25,000–$50,000 (27.6%), $50,001–$100,000 (29.6%), greater than $100,000 (20.7%)].

Loneliness was assessed using a three-item scale from Hughes et al. (2004) that has a reliability coefficient (α) of .72. Participants were asked how often they (1) lack companionship, (2) feel left out, and (3) feel isolated from others, where 1 = often; 2 = some of the time; and 3 = hardly ever or never. Items were reverse scored. Total loneliness was calculated by summing responses to the three items (mean = 4.13, *SD* = 1.64).

Financial fragility is defined as a lack of liquidity to deal with an unexpected emergency expense (Hasler et al., 2018). Participants were asked if they would be able to come up with $2000 if an unexpected need arose in the next month. The item was dichotomized such that those who said they *probably could not* (6.3%), *certainly could not* (12.9%), or *not sure* (4.9%) were coded as financially fragile (*n* = 263, 24.1%). Those who *definitely could* and *probably could* were coded as '0'. Twenty-one percent of respondents refused to answer. These individuals were coded as missing.

Financial literacy was scored by summing the number of correct responses to five multiple choice and true/false questions that assess fundamental personal finance concepts, including compound interest, inflation, and diversification (Lusardi et al., 2014). Responses ranged from 0 (*none correct*) to 5 (*all correct*) (mean = 3.1, *SD* = 1.5). Internal reliability was α = .65. To measure perceived financial competence, respondents rated the extent to which they are good at dealing with day-to-day financial matters, such as checking accounts, credit and debit cards, and tracking expenses, on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). Despite mediocre average scores on the financial literacy test (mean 3.1 out of 5), participants rated their financial competence as very high (mean = 6.0, *SD* = 1.4).

All respondents were asked whether they knew about the specific scam before they were targeted, such as from friends/family, the news, and social media (prior knowledge = 1, 40.1%), and whether they had lost money in a previous scam (prior victim = 1, 18.8%).

Participants who indicated that they responded to the scam were asked additional items, including whether anyone had tried to intervene to stop them from paying (*n* = 141, 10.3%) and the extent to which they agreed with 14 items that characterize many consumer interactions with scams. These items measure respondents' perceptions of the situation (e.g., 'I felt under time pressure', 'I felt afraid of being punished for something I had done'); their appraisals of the scammer (e.g., 'I thought the person was nice', 'The person seemed official'); their feelings towards the offer or solicitation (e.g., 'I felt that I had an opportunity to get ahead financially'); and the context (e.g., 'There was no one available to talk to about the offer at the time'). Items were rated on a scale from 1 (*completely disagree*) to 7 (*completely agree*). Bivariate correlations among all variables used in the analysis are presented in a correlation matrix in Appendix B.

3.4 | Analytic approach

Three sets of multivariable models are used to address the research questions. The first set of models examine risk factors associated with responding to scams—that is, engaging with the solicitation or scammer, independent of losing money ($N_{\text{all respondents}}$ = 1375). The second set of models examine the risk factors associated with victimization for the full sample ($N_{\text{all respondents}}$ = 1347), excluding only those who answered 'don't know' when asked if they lost money. The final set of models examine additional risk factors for victimization following scam engagement, excluding those who did not respond to the scam and who therefore were not asked situational/appraisal questions ($N_{\text{scam responders only}}$ = 701).

Models were analysed using MPlus 8.4 software with additional model diagnostic tests assessed in SAS 9.4. A full information maximum likelihood approach with robust standard errors was used for all models to ensure inclusion of cases with missing data on independent variables. Analyses were performed to examine the correlates of any fraud type (Model 1), as well as separately by fraud subgroup: opportunity-based scams (Model 2; *N* = 387), threat-based scams (Model 3; *N* = 562), consumer purchase scams (Model 4; *N* = 226), and phishing scams (Model 5; *N* = 200).

Independent variables included gender (male = 1), age (continuous), race (non-Hispanic White = 1), education [high school or less (*reference*), some college/associate degree, bachelor's degree or higher], annual household income [less than or equal to $25,000 (*reference*), $25,001-50,000, $50,001-100,000, greater than $100,000], loneliness

TABLE 2 Unweighted sample characteristics ($N = 1375$)

	Frequency/*mean*	Percent/*standard deviation*
Age	*56.42*	*14.10*
Gender		
Female	912	66.33
Male	449	32.65
Annual household income		
Less than $25,000	194	14.11
$25,001–$35,000	149	10.84
$35,001–$50,000	230	16.73
$50,001–$75,000	243	17.67
$75,001–$100,000	164	11.93
$100,001–$125,000	121	8.80
$125,001–$150,000	61	4.44
Greater than $150,000	103	7.49
Race/ethnicity		
Non-Latino White/Caucasian	1094	79.56
Asian/Pacific Islander	29	2.11
Black/African American	117	8.51
Hispanic/Latino	49	3.56
Other	49	3.56
Educational attainment		
Less than high school	11	0.80
High school/GED	189	13.79
Some college/associate degree	529	38.58
4-Year college or higher	642	46.80
Marital status		
Married/partnered/cohabitating	821	59.71
Divorced/separated	231	16.80
Widowed	88	6.40
Single (never married)	204	14.84
Residential location		
Urban	391	28.44
Suburban	650	47.27
Rural	327	23.78
Loneliness score (range 3–9)	*4.13*	*1.64*
Financially fragile	263	24.1
Financial literacy score (range 0–5)	*3.11*	*1.51*
Perceived financial competence (range 0–7)	*6.04*	*1.38*
Heard about the scam before targeted	551	40.07
Prior scam victim	259	18.84
Mean (*SD*) agreement with factors associated with scam interactions (range 1–7)		
I felt afraid of being punished for something I had done	*2.06*	*1.88*
I felt I was under time pressure	*3.86*	*2.47*
I felt intimidated by the person I was dealing with	*2.99*	*2.27*
I felt that I had an opportunity to get ahead financially	*2.92*	*2.36*
I felt that I had an opportunity to make good on past mistakes	*2.28*	*1.96*
I felt that it was 'my time' and I deserved to be rewarded	*2.24*	*1.93*

TABLE 2 (Continued)

	Frequency/*mean*	Percent/*standard deviation*
I worried about missing out on an opportunity	*3.20*	*2.33*
I choose not to discuss the offer with anyone	*2.82*	*2.12*
No one was available to discuss offer/threat with	*3.21*	*2.34*
I had little knowledge about the offer/threat	*3.89*	*2.22*
Person/organization seemed official	*5.14*	*2.03*
Person/organization knew my personal details	*3.27*	*2.28*
Person/organization seemed nice	*3.59*	*2.12*
Someone tried to intervene	141	10.25

(range = 3–9), financial fragility (yes = 1), financial literacy score (range 0–5), perceived financial competence (range 0–7), whether the respondent heard about the exact scam before being targeted (yes = 1), and whether they had lost money in a prior scam (yes = 1). The first models in each table incorporate 'scam type' as an independent variable, where opportunity-based scams is the reference category.

New variables were added to the final set of models in Table 5 where the sample represents only those who responded to the scam and who answered additional items about their experience. These 14 questions measure the context of the fraud interaction and respondents' perceptions of the situation, solicitation message, and the scammer. Because some of these items measure the same two concepts, a structural equation modelling (SEM) approach was used to estimate the effects of one or two latent factors on the odds of victimization, in addition to the direct effects of other observed variables. An advantage of SEM is that it only uses one statistical estimation procedure and reduces measurement error.

We first conducted an exploratory factor analysis to identify the underlying factor structure. The first latent factor—'opportunity seeking'—included three observed items: (1) 'I felt that I had an opportunity to get ahead financially'; (2) 'I felt that it was "my time" and I deserved to be rewarded'; and (3) 'I worried about missing out on an opportunity'. This factor was included in the full SEM model (all scam types, Table 5, Model 1), in addition to the SEM models analysing the factors associated with victimization by opportunity-based scams (Table 5, Model 2), and consumer purchase scams (Table 5, Model 4). Because there is no theoretical rationale that having an 'opportunity seeking' mindset would affect the risk of threat-based scam victimization, this latent factor it was not included as a covariate in Model 3.

The second latent factor—'felt intimidated'—was regressed on three observed items: (1) 'I felt afraid of being punished for something I had done'; (2) 'I felt under time pressure'; and (3) 'I felt intimidated by the person I was dealing with'. This latent factor was included in the SEM models estimating the correlates of victimization for all scam types (Table 5, Model 1), and for threat-based scams specifically (Table 5, Model 3).

Because some of the observed items that loaded onto the two factors were not normally distributed, models were estimated using the Satorra–Bentler method (Satorra & Bentler, 1994). The measurement and structural model is presented in Appendix C, and fit statistics for Model 1 through Model 4 are presented in Appendix D and discussed in the results.

Additional items were introduced separately in the SEM models as covariates. These items included, 'I chose not to discuss it [*the scam*] with anyone', 'no one available to discuss it [*the scam*] with', 'had little knowledge about the offer', 'person/organization seemed official', 'person/organization seemed nice', 'person/organization knew personal details about me', and 'someone tried to intervene'. Responses ranged from 1 (*completely disagree*) to 7 (*completely agree*). The effects of loneliness, financial literacy, perceived financial competence, financial fragility, scam knowledge, and prior victimization were also estimated, but demographic variables were not included to accommodate smaller sample sizes for categorical independent variables.

Evidence suggests that, across a range of fraud types, consumers from zip codes with high minority populations report fraud at lower rates relative to their actual rate of victimization (Raval, 2020). To account for demographic and community-level differences in the propensity to report fraud, we used statistical weights obtained from an independent dataset on fraud victimization. Weights were created using law enforcement case data on victims of nine scams along with consumer complaint data on those same scams and community level demographic data from the 2008–2012 American Community Survey (Raval, 2020). Respondents from zip codes that are less likely to report receive a greater weight to adjust for self-selection in reporting. See Raval (2020) for detailed information on how the statistical weights were constructed.

The independent dataset only included weights associated with U.S. zip codes with resident populations above 100 people. To retain sample size, Canadians and respondents reporting from zip codes associated with post office boxes or business and universities that have zip codes with no resident populations were assigned the mean statistical weight for the sample, 1.197 ($SD = 0.29$, range = 0.46 to 2.64).

4 | RESULTS

4.1 | Correlates of engaging with scammers and scam solicitations

Table 3 presents the correlates of responding to fraud ($N = 1375$). Significantly fewer individuals who were targeted by threat-based

TABLE 3 Correlates of deciding to respond to a scammer/scam solicitation among all respondents, overall and by scam category

	Model 1 All scam types ($N = 1375$)				Model 2 Opportunity-based scams ($n = 387$)				Model 3 Threat-based scams ($n = 562$)				Model 4 Consumer purchase scams ($n = 226$)				Model 5 Phishing scams ($n = 200$)			
	OR	95%CI			OR	95%CI			OR	95%CI			OR	95%CI			OR	95%CI		
Male	1.18	0.88	1.58		1.01	0.58	1.76		1.35	0.87	2.10		1.06	0.49	2.30		1.22	0.46	3.25	
Age	1.00	0.99	1.01		1.00	0.98	1.02		1.00	0.98	1.01		1.00	0.97	1.03		1.00	0.97	1.04	
Non-Hispanic white	0.85	0.58	1.23		1.34	0.73	2.45		0.74	0.42	1.29		0.87	0.29	2.60		0.18	0.06	0.54	**
Married/partnered	0.88	0.65	1.21		0.57	0.31	1.05		0.96	0.60	1.55		1.39	0.62	3.11		0.92	0.37	2.31	
High school or less (reference)	–	–	–		–	–	–		–	–	–		–	–	–		–	–	–	
Some college/associate degree	0.98	0.64	1.51		1.57	0.74	3.33		0.80	0.43	1.47		1.31	0.48	3.54		0.23	0.05	1.08	†
Bachelor's degree or higher	0.81	0.53	1.25		1.31	0.61	2.80		0.59	0.32	1.11		1.61	0.59	4.43		0.17	0.04	0.77	*
HH income ≤$25,000 (reference)	–	–	–		–	–	–		–	–	–		–	–	–		–	–	–	
HH income $25,001–$50,000	1.08	0.69	1.69		0.77	0.35	1.73		1.15	0.58	2.27		1.66	0.45	6.19		0.48	0.09	2.63	
HH income $50,001–$100,000	0.97	0.60	1.59		1.21	0.48	3.08		0.72	0.34	1.53		2.08	0.47	9.21		0.56	0.14	2.29	
HH income ≥ $100,000	1.09	0.63	1.89		2.08	0.70	6.15		0.70	0.30	1.62		1.75	0.32	9.59		0.91	0.17	4.91	
Loneliness	1.15	1.05	1.25	**	1.18	1.00	1.39	†	1.14	1.00	1.30	†	1.22	0.93	1.61		0.95	0.68	1.33	
Financially fragile	0.93	0.62	1.39		1.08	0.54	2.15		0.50	0.26	0.97	*	2.71	0.77	9.55		3.75	0.60	23.3	
Financial literacy	0.95	0.86	1.05		0.98	0.79	1.21		0.91	0.79	1.06		1.00	0.78	1.28		1.20	0.79	1.82	
Perceived financial competence	0.98	0.89	1.08		0.86	0.71	1.04		0.99	0.84	1.17		1.02	0.83	1.26		1.19	0.87	1.64	
Heard about scam before	0.19	0.14	0.25	***	0.14	0.08	0.26	***	0.15	0.10	0.23	***	0.38	0.19	0.76	**	0.14	0.05	0.41	***
Prior scam victim	1.01	0.70	1.43		1.85	0.93	3.71	†	0.96	0.55	1.67		0.54	0.22	1.31		0.66	0.19	2.27	
Opportunity-based scams (reference)	–	–	–		–	–	–		–	–	–		–	–	–		–	–	---	
Threat-based scams	0.33	0.24	0.45	***	–	–	–		–	–	–		–	–	–		–	–	–	
Consumer purchase scams	1.47	0.94	2.31	†	–	–	–		–	–	–		–	–	–		–	–	–	
Phishing scams	0.12	0.07	0.19	***	–	–	–		–	–	–		–	–	–		–	–	–	

Note: All analyses are weighted using weights generated by Raval (2020).
Abbreviation: OR, odds ratio.
†$p < .1$;
*$p < .05$; **$p < .01$; ***$p < .001$.

scams (e.g., government imposter, tech support) responded to the scam relative to those targeted by opportunity-based scams (odds ratio [OR] = 0.33; 95% confidence interval [95%CI = 0.24, 0.45, $p < .001$]). A similar pattern was observed for phishing scams. Phishing scam targets were significantly less likely to respond relative to opportunity-based scam targets (Model 1; OR = 0.12, 95%CI = 0.07, 0.19, $p < .001$). Loneliness increased the probability of responding to scam types combined (Model 1; OR = 1.15, 95%CI = 1.05, 1.25, $p < .01$) but only trended towards significance for opportunity-based and threat-based scams ($p < .1$). Those who were financially fragile were approximately half as likely to respond to threat-based scams (Model 3; OR = 0.50; 95%CI = 0.26, 0.97, $p < .05$).

Among those who reported phishing scams, non-Hispanic white respondents were 82% less likely to respond than those belonging to a race or ethnic minority group (Model 4; OR = 0.18, 95%CI = 0.06, 0.54, $p < .01$), and college graduates were 83% less likely to respond (Model 4; OR = 0.17, 95%CI = 0.04, 0.77, $p < .05$). The only statistically significant factor for consumer purchase scams was having heard about the exact scam before being targeted (Model 4; OR = 0.38, 95%CI = 0.19, 0.76, $p < .01$), which was also significantly protective against responding to other types of fraud solicitations. Across scam types, individuals were between 62% and 86% less likely to respond if they knew about the scam beforehand.

4.2 | Correlates of victimization among all respondents

More factors were associated with scam victimization (Table 4). Regressing the same factors on victimization (losing money) suggests that, among all respondents with data on victimization ($n = 1347$), loneliness is a significant risk factor (Model 1; OR = 1.17, 95%CI = 1.06, 1.28, $p < .01$), as is low financial literacy (Model 1; OR = 0.84, 95%CI = 0.76, 0.94, $p < .01$). Financially fragile respondents were 86% more likely to report victimization (Model 1; OR = 1.86, 95%CI = 1.22, 2.82, $p < .01$). Those who knew about the specific scam before they were targeted were 78% less likely to be victimized following fraud exposure (Model 1; OR = 0.22, 95%CI = 0.16, 0.32, $p < .001$). Respondents targeted by consumer purchase scams were significantly more likely to report victimization relative to opportunity-based scams (Model 1; OR = 2.10, 95%CI = 1.40, 3.15, $p < .001$), and those targeted by phishing scams were significantly less likely to report victimization (Model 1; OR = 0.15, 95%CI = 0.07, 0.36, $p < .001$). Threat-based scam targets trended towards having lower odds of victimization relative to opportunity-based scam targets (Model 1; OR = 0.72, 95%CI = 0.51, 1.03, $p < .1$).

Among those targeted by opportunity-based scams (Model 2), males were 95% more likely to be victims (Model 2; OR = 1.95, 95%CI = 1.07, 3.53, $p < .05$). Married/partnered respondents were half as likely to report victimization compared to those who were single, widowed, or divorced (Model 2; OR = 0.46, 95%CI = 0.24, 0.86, $p < .05$). Individuals who reported a household income between $50,001 and $100,000 were 150% more likely to be victims than those with incomes of $25,000 or less (Model 2; OR = 2.50, 95%CI = 1.04, 6.01, $p < .05$), and those with household incomes greater than $100,000 were 200% more likely to be victims (Model 2; OR = 3.04, 95%CI = 1.04, 8.92, $p < .05$). However even after controlling for income, being financially fragile significantly increased risk of victimization by more than three times (Model 2; OR = 4.21, 95%CI = 2.12, 8.38, $p < .001$). Financial literacy was negatively associated with victimization by opportunity-based scams (Model 2; OR = 0.74, 95%CI = 0.61, 0.91, $p < .01$), meaning that those with higher literacy were less likely to report a financial loss. Poor financial literacy was marginally associated with losing money in threat-based scams (Model 3; OR = 0.84, 95% CI = 0.70, 1.00, $p < .01$). Despite lower financial literacy, perceived financial competence was positively associated with victimization by threat-based scams (Model 3; OR = 1.35, 95%CI = 1.04, 1.74, $p < .05$).

Having prior knowledge of the scam prior to being targeted was significantly protective for opportunity-based scams (Model 2; OR = 0.19, 95%CI = 0.09, 0.40, $p < .001$) and threat-based scams (Model 3; OR = 0.12, 95%CI = 0.06, 0.21, $p < .001$) but not consumer purchase scams (Model 4; OR = 0.55, 95%CI = 0.28, 1.08). The only significant risk factor for consumer purchase scam victimization was loneliness (Model 4; OR = 1.30, 95%CI = 1.04, 1.63, $p < .05$).

The correlates of victimization by phishing scams could not be estimated because only seven out of 200 respondents lost money and the model could not converge on a solution.

4.3 | Correlates of victimization among those who responded

Table 5 reports the results of the SEM models analysing the correlates of moving from responding to a scam to victimization by a scam ($N = 719$). Those who did not respond to the scam solicitation were excluded from these analyses, as were those who were not sure whether they had lost money. Model fit (Appendix D) was good for Model 1 (all scam types together and both latent factors included in the SEM) and Model 2 (opportunity-based scams only). Both had comparative fit index (CFI) and adjusted goodness of fit (GFI) scores greater than 0.945, and Root Mean Square Error of Approximation (RMSEA) values of 0.07 and 0.05, respectively. Good fit was also achieved for threat-based scams (Model 3; CFI = .984, GFI = .953, RMSEA = .07) and consumer purchase scams (Model 4; CFI = .984, GFI = .948, RMSEA = .07).

In Model 1, the odds of victimization were significantly higher for those who were exposed and responded to consumer purchase scams (OR = 2.60, 95%CI = 1.51, 4.51, $p < .01$) and marginally higher for threat-based scams (OR = 1.85, 95%CI = 0.92, 3.69, $p < .1$) relative to opportunity-based scams. This represents a reversal from the previous model that included respondents who immediately knew it was a scam and did not respond.

TABLE 4 Correlates of scam victimization (financial loss) among all respondents, overall and by scam category

	Model 1 All scam types ($N = 1347$)				Model 2 Opportunity-based scams ($N = 380$)				Model 3 Threat-based scams ($N = 550$)				Model 4 Consumer purchase scams ($n = 219$)			
	OR	95%CI			OR	95%CI			OR	95%CI			OR	95%CI		
Male	1.22	0.88	1.68		1.95	1.07	3.53	*	1.10	0.64	1.91		1.04	0.54	2.01	
Age	1.01	1.00	1.02		1.01	0.99	1.03		1.01	0.99	1.03		0.99	0.97	1.02	
Non-Hispanic white	0.88	0.60	1.31		1.05	0.53	2.10		0.81	0.41	1.61		0.99	0.41	2.38	
Married/partnered	1.10	0.78	1.56		0.46	0.24	0.86	*	1.28	0.70	2.31		1.93	0.96	3.88	
High school or less (reference)	–	–	–		–	–	–		–	–	–		–	–	–	
Some college/associate degree	0.98	0.62	1.54		1.74	0.78	3.88		0.78	0.36	1.68		0.73	0.32	1.65	
Bachelor's degree or higher	1.18	0.74	1.87		2.19	0.98	4.92	†	0.81	0.36	1.78		1.35	0.58	3.17	
HH income ≤$25,000 (reference)	–	–	–		–	–	–		–	–	–		–	–	–	
HH income $25,001–$50,000	1.33	0.82	2.14		1.02	0.47	2.21		1.83	0.73	4.64		1.44	0.47	4.42	
HH income $50,001–$100,000	1.37	0.80	2.36		2.50	1.04	6.01	*	1.15	0.40	3.31		1.59	0.49	5.19	
HH income >$100,000	1.05	0.56	1.98		3.04	1.04	8.92	*	0.89	0.27	2.91		0.71	0.18	2.74	
Loneliness	1.17	1.06	1.28	**	1.04	0.89	1.22		1.28	1.09	1.51	**	1.30	1.04	1.63	*
Financially fragile	1.86	1.22	2.82	**	4.21	2.12	8.38	***	0.78	0.33	1.86		1.64	0.60	4.44	
Financial literacy	0.84	0.76	0.94	**	0.74	0.61	0.91	**	0.84	0.70	1.00	†	0.95	0.76	1.18	
Perceived financial competence	1.08	0.97	1.21		1.00	0.84	1.18		1.35	1.04	1.74	*	1.00	0.81	1.25	
Heard about scam before	0.22	0.16	0.32	***	0.19	0.09	0.40	***	0.12	0.06	0.21	***	0.55	0.28	1.08	
Prior scam victim	1.04	0.72	1.50		1.47	0.75	2.87		0.93	0.45	1.92		1.01	0.49	2.10	
Opportunity-based scams (reference)	––	–	–		–	–	–		–	–	–		–	–	–	
Threat-based scams	0.72	0.51	1.03	†	–	–	–		–	–	–		–	–	–	
Consumer purchase scams	2.10	1.40	3.15	***	–	–	–		–	–	–		–	–	–	
Phishing scams	0.15	0.07	0.36	***	–	–	–		–	–	–		–	–	–	

Note: Models exclude the minority of respondents who were not sure whether they lost money in the scam. All analyses are weighted using weights generated by Raval (2020). Phishing scams excluded because only seven respondents reported losing money.
Abbreviation: OR, odds ratio.
†$p < .1$;
*$p < .05$; **$p < .01$; ***$p < .001$.

Being financially fragile increased the odds of victimization after responding to scams overall by 72% (Model 1; OR = 1.72, 95% CI = 1.05, 2.82, $p < .05$). More specifically, financial fragility was significantly associated with losing money in opportunity-based scams following scam response (Model 2; OR = 2.64, 95%CI = 1.32, 5.31, $p < .01$), but not with threat-based or consumer purchase scams. Knowing about the exact scam reduced risk of victimization by scams in general by 42%, even after deciding to respond to the solicitation (Model 1; OR = 0.58, 95%CI = 0.37, 0.92, $p < .05$). Prior knowledge was significantly protective for opportunity-based scams (Model 2; OR = 0.37, 95%CI = 0.15, 0.93, $p < .05$) but only marginally protective for threat-based scams (Model 3; OR = 0.48, 95%CI = 0.22, 1.05, $p < .1$).

Models in Table 5 include measures of the respondents' assumptions, feelings, and perceptions of the interaction while they were engaging. Contrary to predictions, the latent factor 'seeking opportunity' was not a significant predictor of victimization for opportunity-based scams or for consumer purchase scams, and the latent factor 'felt intimidated' was not significantly associated with victimization by threat-based scams. Choosing not to discuss the offer/threat with others significantly increased the odds of losing money in opportunity-based scams only (Model 2; OR = 1.34, 95%CI = 1.13, 1.58, $p < .01$). Having no one available to discuss the offer/threat with increased the risk of victimization by consumer purchase scams (Model 4; OR = 1.28, 95%CI = 1.06, 1.55, $p < .01$) and trended

TABLE 5 Correlates of victimization among respondents who engaged with a scam solicitation, overall and by scam category

	Model 1 All scam types ($N = 719$)				Model 2 Opportunity-based scams ($n = 279$)				Model 3 Threat-based scams ($n = 229$)				Model 4 Consumer purchase scams ($n = 175$)			
	OR	95%CI			OR	95%CI			OR	95%CI			OR	95%CI		
Loneliness	0.99	0.88	1.10		0.89	0.75	1.07		1.18	0.93	1.48		0.99	0.75	1.32	
Financially fragile	1.72	1.05	2.83	*	2.64	1.32	5.31	**	1.00	0.34	2.94		1.82	0.54	6.15	
Financial literacy	0.91	0.80	1.04		0.82	0.65	1.03	†	0.93	0.72	1.20		1.06	0.81	1.40	
Perceived financial competence	1.09	0.95	1.26		1.06	0.86	1.30		1.41	1.01	1.97	*	1.02	0.78	1.33	
Heard about scam before being targeted	0.58	0.37	0.92	*	0.37	0.15	0.93	*	0.48	0.22	1.05	†	0.93	0.38	2.29	
Prior scam victim	0.89	0.56	1.42		0.95	0.43	2.09		1.02	0.39	2.63		0.98	0.37	2.60	
Factor 1: Felt intimidated	1.08	0.77	1.51		–	–	–		0.78	0.45	1.34		–	–	–	
Factor 2: Seeking opportunity	1.22	0.86	1.75		1.29	0.95	1.76		–	–	–		1.28	0.74	2.23	
Chose not to discuss w/anyone	1.11	1.01	1.23	*	1.34	1.13	1.58	**	1.07	0.87	1.31		0.91	0.74	1.12	
No one available to discuss with	1.15	1.05	1.27	**	1.09	0.92	1.29		1.17	0.99	1.39	†	1.28	1.06	1.55	*
I had little knowledge about the offer	0.93	0.84	1.02		0.87	0.73	1.03	†	1.04	0.85	1.28		0.93	0.77	1.12	
Person/organization seemed official	1.42	1.27	1.59	***	1.34	1.09	1.65	**	1.82	1.36	2.44	***	1.36	1.12	1.65	**
Person/organization knew my personal details	0.95	0.86	1.05		1.01	0.86	1.18		0.94	0.79	1.11		0.87	0.71	1.06	
Person/organization seemed nice	1.14	1.03	1.27	*	1.02	0.85	1.23		1.18	0.97	1.45		1.08	0.86	1.36	
Someone tried to intervene	0.91	0.56	1.47		1.54	0.69	3.47		0.90	0.33	2.46		0.36	0.14	0.93	*
Opportunity-based scams (reference)	–	–	–		–	–	–		–	–	–		–	–	–	
Threat-based scams	1.85	0.92	3.69	†	–	–	–		–	–	–		–	–	–	
Consumer purchase scams	2.60	1.51	4.51	**	–	–	–		–	–	–		–	–	–	
Phishing scams	0.42	0.14	1.20		–	–	–		–	–	–		–	–	–	

Note: Models exclude the minority of respondents who were not sure whether they lost money in the scam. All analyses are weighted using weights generated by Raval (2020). Phishing scams excluded due to sample size of 34 targets who engaged.
Abbreviation: OR, odds ratio.
†$p < .1$;
*$p < .05$; **$p < .01$; ***$p < .001$.

towards increasing the likelihood of victimization for threat-based scams (Model 3; OR = 1.17, 95%CI = 0.99, 1.39, $p < .1$). The more the respondent agreed that the scammer seemed nice, the higher their odds of victimization for all scams combined (Model 1; OR = 1.14, 95%CI = 1.03, 1.27, $p < .05$), but this factor did not rise to significance for any individual category of fraud. Those who reported that someone tried to intervene were 64% less likely to become a victim of consumer purchase scams (Model 4; OR = 0.36, 95%CI = 0.14, 0.93, $p < .05$). Agreeing that the scammer or offer/threat seemed official was a significant risk factor for all categories of scams, increasing the risk of victimization by 36% (consumer purchase scams) to 82% (threat-based scams).

5 | DISCUSSION

This study examines the correlates associated with both responding to and losing money following exposure to four major categories of fraud—opportunity-based scams, threat-based scams, consumer purchase scams, and phishing scams, in addition to scams overall. The current investigation contributes to the literature in several ways. First, we investigate the relative likelihood of responding to different forms of fraud, independent of subsequent victimization. In support of the ELM (Petty & Cacioppo, 1986), results suggest that prior knowledge helps protect consumers from responding to fraud solicitations (Hypothesis 4) and from victimization even if they do ultimately

respond, perhaps because prior fraud knowledge promotes greater elaboration and more critical appraisals of the message or context of the solicitation. Second, findings are not subject to fraud reporting errors as all participants acknowledged and reported a scam and had their entries reviewed and confirmed as scams by BBB staff. Third, this study controls for targeting/exposure, solving a common survey limitation in which some respondents who are classified as non-victims were never targeted to begin with. Overall, results show that some risk and protective factors—such as the solicitation seeming official and knowing about the scam in advance of being targeted—are largely significant across scam types, but many other factors are specific to scam type.

5.1 | Implications for theory

Loneliness and social isolation are frequently cited as risk factors for fraud, particularly for older adults (Alves & Wilson, 2008; Cross, 2016; DeLiema, 2018; Lee & Soberon-Ferrer, 1997). Results from this study add nuance to qualitative findings reported in prior literature by showing that the effects of loneliness differ by scam type. Partially supporting our hypothesis (Hypothesis 1), loneliness trended towards being significantly associated with responding to opportunity-based scams but, unpredicted, loneliness was also significantly associated with victimization by threat-based scams and consumer purchase scams. Other studies have found a link between feeling lonely and the desire to go shopping (Kim et al., 2005), as well as a link between loneliness and parasocial connections to TV home shopping hosts (Lim & Kim, 2011). This suggests that lonely consumers may use consumption as a mood enhancement strategy. Future research should examine the mechanisms through which loneliness increases fraud susceptibility. Does loneliness impair information processing, leading to lower elaboration and reliance on heuristic shortcuts, or does loneliness increase the personal relevance of products and services that offer social or emotional benefits, increasing elaboration and persuasion through central route processing?

Similarly, the more that respondents agreed with the statement that they had no one available to talk to about the solicitation, the more likely they were to be victims (Hypothesis 2), but only for consumer purchase scams. They were marginally more likely to be victims of threat-based scams, which thrive on isolating the target from trusted third parties who might intervene: family, friends, and institutions. In other words, being physically alone—a more objective measure of social isolation—may increase the odds of victimization by these scam types, controlling for other factors like loneliness. The survey did not ask those who rejected the scam solicitation outright if there was someone present who deterred them from responding in the first place. This should be explored in future research as third-party interventions may be the most effective tool in fraud prevention.

As hypothesized in Hypothesis 3, there was a significant association between financial fragility and susceptibility to opportunity-based scams that offer rewarding promises of financial returns and security. Findings support the ELM, which proposes that when information is personally relevant, individuals will elaborate more on the persuader's arguments. If the persuader's arguments already align with the need state of the target, agreement will likely be the outcome.

Interestingly, respondents who reported more than $100,000 in household income also faced significantly greater risk of opportunity-based scam victimization compared to low-income households, even when controlling for financial fragility. One possible explanation is that high earners can become financial fragile if they overspend. Money-making or debt reduction schemes may be particularly appealing to those trying to maintain a high-cost, luxury lifestyle. Also, regardless of financial fragility, high-income earners may be more exposed to wealth-building schemes since fraud criminals may deliberately target people with more disposable income. Future research may test this by examining the risk of opportunity-based fraud exposure by income status.

Hypothesis 5 was partially supported. Financial literacy, a form of prior knowledge, emerged as a protective factor against losing money in opportunity-based scams, though it was not a protective factor with consumer purchase scams. Those who understand financial concepts such as inflation and investing may activate this knowledge to elaborate on money-making offers. When there is limited information about the risks of a financial offer, consumers may rely more on their existing financial knowledge to guide decision-making. Pak (2018) investigated the impact of information access on the relationship between financial literacy and the use of high-cost alternative financial services—for example, check-cashing, payday loans, and rent-to-own. When information about the risks of alternative financial services was limited, the negative relationship between financial literacy and the use of alternative financial services was stronger. The implication is that financial literacy may be particularly important in fraudulent situations where consumers have very little information because scammers disguise and downplay the risks. It is also possible that consumers with higher financial literacy are more active in the marketplace and therefore more exposed to fraud. Future research is needed to determine whether literacy works to offset increased fraud exposure.

Among respondents who reported threat-based scams, those who had lower financial literacy and higher perceived financial competence showed greater odds of victimization. This was not predicted. Contrary to predictions in Hypothesis 6, perceived financial competence was not a risk factor for consumer purchase scams or opportunity-based scams. This finding suggests that the effects of financial literacy and how one views their financial competence on fraud victimization may be more nuanced than initially believed. More research is needed to better understand the relationships among these variables.

A significant body of psychological evidence indicates that positive and negative emotions have opposing effects on information processing. Positive emotions tend to promote simple, Type II heuristic processing of a persuasion message, whereas negative emotions tend to facilitate more systematic scrutiny (see Griskevicius et al., 2010). In the context of consumer fraud, this differential processing of

persuasion messages suggests that positive scams are more likely to result in a financial loss than negative and emotionally neutral scams. This could explain why opportunity-based scams and consumer purchase scams elicited relatively more response and victimization than threat-based scams and phishing scams. However, when looking specifically at respondents' thoughts, feelings, and emotions during the fraud interaction, we did not find overall support for our Hypotheses 7 and 8 on the effects of positive and negative emotions on specific forms of fraud. Respondents who identified as feeling more intimidated during the interaction (Factor 2) were not more likely to lose money in threat-based scams as predicted, and respondents who identified as seeking an opportunity (Factor 1) were not more likely to be victims of opportunity-based scams or consumer purchase scams after adjusting for all covariates.

A significant contribution of this study is that risk factors differ by scam type. For example, low-income and minority respondents were more likely to report engaging in phishing scams. Factors such as being male, unmarried, having higher household income, and financial fragility were associated with reporting losses in opportunity-based scams. These combinations of risk factors did not emerge for the other fraud categories.

This variation in demographic correlates adds to previous literature indicating that different people are uniquely susceptible to different scams or are exposed to different types of fraud (e.g., Button et al., 2009; Pak & Shadel, 2011). The promises scammers make, the products and services they tout, and the elements of persuasion are tailored to appeal to certain people more than others based on scammers' assumptions about who is most likely to respond. For example, someone who is financially insecure may be seeking money-making opportunities that will help improve their financial situation, making them more prone to opportunity-based frauds. Having financial troubles, however, would not necessarily make that person more likely to believe they are in trouble with the government or want to purchase a fake product advertised in an online marketplace.

We found relatively few correlates of consumer products fraud, which had the greatest proportion of victims (42% reported losing money) relative to other scam types. It is possible that this category is too broadly defined. It includes online marketplace fraud where consumers have no direct interaction with the scammer, as well as scams in which consumers are solicited face-to-face by unscrupulous salespeople (e.g., door-to-door solar panel installation). Another issue is that the types of fraudulent products and services vary widely—pets, medical insurance, car repair, and so forth—thereby appealing to consumers from various demographic groups. Furthermore, the sample size for consumer purchase scams was relatively small, and this reduced statistical power may have resulted in a higher Type II error rate.

Despite large variation in correlates across scam categories, we found that knowing about the specific scam before being targeted significantly reduced the odds of responding and the odds of victimization for opportunity and threat-based scams in particular, supporting Hypothesis 4. This was the first study to use self-report data to examine the impact of prior scam knowledge on fraud victimization and provides support for the ELM in the context of fraud: Prior knowledge may promote greater elaboration, leading to more critical appraisals of fraudulent solicitations. Findings suggest that efforts to inform consumers about scams may be effective, although an alternative explanation is that consumers who knew about the scam were more motivated to report their experience to BBB.

The second consistent factor associated with victimization was 'seeming official'. Once they responded to the scam, participants were between 34% and 67% more likely to report victimization for each degree they perceived it to be more official. The use of authority is a common persuasion tactic in marketing and advertising and, according to the ELM, the use of authority promotes more superficial processing of a persuasion message. Research on phishing emails (Ferreira & Teles, 2019), deceptive annuity sales (DeLiema et al., 2016), and advance fee fraud (Chang, 2008) show that fraudulent communications mimic or reference well-known people and organizations (e.g., Publisher's Clearinghouse, Microsoft, Social Security Administration), use professional titles and insignias (e.g., 'Special Agent', 'Financial Accounts Manager'), and present other indicators of legitimacy to appear trustworthy. Our survey did not specifically ask respondents to describe what about the solicitation made it seem official but, in the qualitative responses, consumers provided comments such as '[He] sounded like a sheriff's deputy and he was threatening me with immediate arrest if I didn't comply', and 'The phone ID had said "Apple" and I had been having trouble with my computer'.

5.2 | Implications for practice

Consumer awareness about specific scams may reduce vulnerability to those scams by up to 85%, yet results also suggest that different demographic, financial, and psychosocial characteristics play a role in vulnerability to different scams. This adds evidence to the literature that there is not a single victim profile for which to direct fraud education. To be most effective, consumer fraud education should be scam-specific and delivered to those who have a set of characteristics that make them uniquely vulnerable to that scam type. For example, opportunity-based scam education should target individuals who are financially insecure, and threat-based scam education should focus on those who experience loneliness and who have low financial literacy. For phishing scams, cybersecurity campaigns should target minorities and those with low educational attainment, including those who do not receive mandatory cybersecurity training through their employer, as is the case with many white-collar professionals.

Although specific information about scams may offer the best protection against future fraud susceptibility, studies suggest that general financial literacy education increases financial capability in a number of domains (Xiao & O'Neill, 2016), perhaps by increasing elaboration and attention to the details of a persuasion message as proposed by the ELM. Financial literacy programmes offered in schools, universities, and workplaces may consider adding fraud awareness to the curriculum.

Given that victim profiles vary by scam type, the challenge for protection agencies and consumer advocates is deciding which scams to prioritize in education and awareness efforts—the scams that are the most common or the scams that result in the greatest losses? Another open question is where to broadcast information about fraud. This study did not ask consumers who knew about the scam before they were targeted where their knowledge came from. Future work might aim to determine what media sources are most influential among vulnerable consumers who vary in their demographic and lifestyle profiles.

The consumer scams examined in this study represent just a piece of the ever-expanding fraud landscape. Covid-19 has exacerbated financial scams by creating an environment ripe for fraud (Ma & McKinnon, 2021). Scammers capitalize on economic disruption, fear, and misinformation to deceive their targets (Balleisen, 2018). Social distancing and job loss brought on by the pandemic has increased loneliness and financial fragility for many, which our study suggests may lead to increased susceptibility to certain scams. Because the present data was collected prior to 2019, future research should explore whether the risk factors identified in this study map on to risk factors for Covid-19 scams specifically, such as fake vaccines, treatments, cures, and online shopping fraud.

5.3 | Limitations and directions for future research

Survey data is self-reported, cross sectional, retrospective, and not nationally representative, limiting the conclusions that can be drawn from the study and its generalizability. Because respondents completed the survey following the incident, data does not allow us to determine whether certain situational factors, like loneliness and financial fragility, precede or follow the scam. Longitudinal research is needed to disentangle the predictors from the consequences of fraud. Relatedly, accounts of what respondents were thinking and how they were feeling during the scam solicitation may have changed over time, and recall may be biased.

The response rate to this unpaid voluntary survey was poor. Only 2.3% completed the survey following sequential email solicitations from BBB. Survey respondents were slightly older than Scam Tracker reporters on average, and median losses were $448 higher than the median losses reported by victims in the full 2018 Scam Tracker database. (For comparison, see the Risk Report from BBB Institute for Marketplace Trust, 2018). This discrepancy suggests that higher financial losses may have motivated survey response.

Survey respondents, and BBB Scam Tracker reporters as a whole, also differ from the general population and are non-representative. Compared to the 2017 U.S. population, they are significantly older, more likely to be non-Hispanic white, have higher educational attainment, and are more likely to fall into middle income brackets. This could reflect disproportionate targeting or victimization of these demographic groups or may indicate selection effects in fraud reporting and survey response. We attempted to reduce selection effects by weighting the data so that consumers reporting from areas with greater rates of victimization (relative to rates reporting) are statistically overweighted. But even with statistical weights, survey respondents are not representative of the total universe of fraud targets and victims. Fraud is ubiquitous, and the vast majority of individuals do not file reports when they are targeted. Fraud is also underreported by most victims, particularly those who do not identify their experience as a scam or who feel too ashamed to share details about their experience.

Our study does not allow us to investigate differences in the true rate of victimization for each category of scam. This would require having access to scammers' 'lead/hit lists' and information on which targeted individuals complied. Scams that are tailored to specific consumer profiles may have higher victimization rates than scams using generalist mass marketing approaches, but there is no systematic research in that area. Surveying individuals who are listed on scammers' lead lists may better represent those known to be targeted by fraudsters. This approach would also control for targeting and would avoid selection bias by not relying on consumers who reported fraud to consumer protection agencies.

Small sample size and a low victimization rate impeded our ability to model the correlates of victimization by phishing scams, but risk factors for engaging included being non-Hispanic white and having low educational attainment. Prior research has shown that more cybersecurity awareness and Web experience protect against phishing attacks (Wright & Marett, 2010), and these characteristics may be less prevalent among individuals with low educational attainment. Future research should sample more targets and victims of phishing scams to improve statistical power.

Future research must move beyond self-reported data to determine the differential roles of emotion in susceptibility to scams that incorporate positive or negative emotional arousal as a persuasion tactic. Manipulating participants' emotions in a controlled laboratory experiment would help isolate the effects of emotional arousal on participants' appraisals of the credibility of threats versus opportunities and consumer products.

Last, this survey did not gather data on targets' prior exposure to each of the main categories of fraud. Prior exposure could have a forewarning effect and protect against future fraud attempts, or it may increase victimization risk if the individual responds and their contact information is added to scammers' lead lists. Future research may attempt to assess how exposure to one type of fraud influences susceptibility to other fraud types.

6 | CONCLUSION

This is the first study to show that the factors associated with responding to fraud are not necessarily the same factors associated with victimization and that risk factors such as income, education, financial fragility, loneliness, and financial literacy vary by the category of scam. While low-income and minority respondents were more likely to report engaging in phishing scams, factors such as being male, unmarried, having higher household income, and being financially

fragile were associated with losing money in opportunity-based scams. Importantly, we show that greater scam awareness may protect consumers against responding to specific scams and losing money if they do respond. Widespread consumer awareness campaigns from government, nonprofit, and private sector stakeholders are needed to enhance consumer safety, and messages should be targeted to specific populations.

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CONFLICT OF INTEREST

The authors have no financial conflicts of interest to disclose.

DATA AVAILABILITY STATEMENT

BBB Scam Tracker survey data used for this research paper is available for request through BBB Institute for Marketplace Trust, the Better Business Bureau's educational foundation. Researchers interested in accessing the data should send an inquiry to institute@iabbb.org.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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