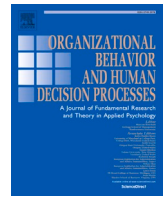




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## Financial shame spirals: How shame intensifies financial hardship

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## ABSTRACT

Financial hardship is an established source of shame. This research explores whether shame is also a driver and exacerbator of financial hardship. Six experimental, archival, and correlational studies ( $N = 9,110$ )—including data from customer bank account histories and several longitudinal surveys that allow for participant fixed effects and identical twin comparisons—provide evidence for a vicious cycle between shame and financial hardship: Shame induces financial withdrawal, which increases the probability of counterproductive financial decisions that only deepen one's financial hardship. Consistent with this model, shame was a stronger driver of financial hardship than the related emotion of guilt because shame increases withdrawal behaviors more than guilt. We also found that a theoretically motivated intervention—affirming acts of kindness—can break this cycle by reducing the link between financial shame and financial disengagement. This research suggests that shame helps set a poverty trap by creating a self-reinforcing cycle of financial hardship.

## 1. Introduction

Even in non-pandemic times and even in developed and wealthy countries, large proportions of the population experience day-to-day financial hardship. Indeed, one 2011 study found that nearly half of U.S. households were so cash-strapped that they would be unable to come up with \$2,000 in an emergency (Lusardi, Schneider, & Tufano, 2011), a percentage that is much higher in 2021 given the financial challenges created by the COVID-19 pandemic (Adams-Prassl, Boneva, Golin, & Rauh, 2020). Living with these financial pressures is a major source of emotional distress (Greenberg & Mogilner, 2020; Porcelli & Delgado, 2009; Ruberton, Gladstone, & Lyubomirsky, 2016), which in turn worsens general well-being (Jachimowicz, Mo, Greenberg, Jeronimus, & Whillans, 2020; Netemeyer et al., 2018). The emotional consequences of financial difficulties can even be life-threatening: Seemingly insurmountable financial difficulties are an important predictor of depression and suicide (Hempstead & Phillips, 2015; Phillips & Nugent, 2014). In sum, prior research has clearly established that financial hardship produces negative emotions.

Our research explores the reverse path, investigating whether negative emotions can also create and exacerbate financial hardship.

Specifically, we explore whether the emotion of shame plays a key role in intensifying financial difficulties. Shame is intimately connected with financial suffering as people often feel ashamed about their financial hardships, regardless of whether they arise from financial stress (Starrin, Åslund, & Nilsson, 2009), unemployment (Rantakeisu, Starrin, & Hagquist, 1999; Starrin & Jönsson, 2006), economic recessions (Starrin, Rantakeisu, & Hagquist, 1997), or international emergencies (such as COVID-19; Adams-Prassl et al., 2020). But shame is also tightly linked to avoidance behaviors, where people withdraw and disengage from shame-inducing information. Integrating these findings, we propose that feeling ashamed about one's financial difficulties will lead people to financially disengage in ways that harm their long-term economic interests, thereby intensifying their financial hardship.

By proposing that shame intensifies financial hardship by increasing financial disengagement, we conceptually distinguish the financial effects of shame from the related negative emotion of guilt. We propose that experiencing shame in response to one's financial situation will subsequently lead to worse financial outcomes because feelings of shame prompt individuals to disengage from their shame-inducing circumstances (Sznycer, 2019; Tangney, Miller, Flicker, & Barlow, 1996; Wicker, Payne, & Morgan, 1983). In contrast, guilt does not lead people

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to the same levels of disengagement that shame does (Conroy, Becker, & Menges, 2016; Tangney & Fischer, 1995; Tangney, Stuewig, & Mashek, 2007). Thus, we predict that shame will exacerbate financial hardship more than the related emotion of guilt because shame leads to greater disengagement than guilt.

We report six studies ( $N = 9,110$ )—including archival, field, longitudinal, and experimental data—that provide evidence that shame increases financial withdrawal and disengagement behaviors, which in turn prompts greater financial hardship. Our research highlights that finances not only produce emotional reactions, but emotional experiences also steer financial outcomes. Moreover, the current research also shows that the effect of shame on financial hardship helps set up a potential “poverty trap” (Bowles, Durlauf, & Hoff, 2006; Haushofer & Fehr, 2014), a self-reinforcing cycle in which the shame induced by one’s financial situation leads to future financial difficulties. We next review the literature on financial behaviors and negative emotions and propose a theoretical model for how shame promotes financial hardship.

### 1.1. Why shame will intensify financial hardship: The role of avoidant behaviors

Maintaining and improving one’s financial situation often requires careful monitoring, including timely attention to bills, routine checking of one’s balances, steady awareness of cash flows, and regular payments toward reducing overall debt burden (Chang, Webb, Benn, & Reynolds, 2017). This is especially true when experiencing financial hardship because, without careful attention, people can miss financially stabilizing opportunities or neglect important deadlines that can create cascading levels of penalties. Despite the benefits of carefully attending to one’s finances, we propose that feelings of shame lead to the avoidance of shame-relevant information (Custers, 2015; Golman, Hagmann, & Loewenstein, 2017; Sweeny, Melnyk, Miller, & Shepperd, 2010; Woolley & Risen, 2018). Generally, people attend less to information about their finances when the economic road is rocky; for example, people engage with their investment portfolios less frequently when markets are falling versus rising (Karlsson, Loewenstein, & Seppi, 2009). But we suggest that shame intensifies this general tendency to avoid financial matters during downturns, causing individuals to disengage from essential information about their financial situation (Webb, Chang, & Benn, 2013). As a result, we propose that feelings of shame—due to increasing financial disengagement—will lead people to be insufficiently capable of making financial decisions that serve their long-term interests (Custers, 2015), thereby increasing their financial hardship over time (Custers, 2017).

Our theoretical perspective that shame increases financial avoidance draws from information threat theory, which proposes that shame evolved as an adaptive response to reduce the threat of social devaluation when negative self-relevant information reaches others (Sznycer et al., 2016). Viewed from this perspective, shame motivates individuals to avoid behaviors that could cause devaluation and to conceal damaging information from others. This lens helps to explain why shame mobilizes the psychosocial barriers of withdrawal and disengagement: it protects the shamed individual from further stigma and devaluation.

Information threat theory also identifies why shame and stigma often accompany financial hardship. While there is limited empirical evidence investigating the link between shame and financial outcomes in psychology, the relationship has been explored by legal scholars through the concept of “bankruptcy stigma” (Stanley & Girth, 1971). In interviews with those who have filed for bankruptcy, debtors often expressed feelings of shame, with many actively concealing their bankruptcy filings from their parents, coworkers, and employers; indeed, this fear of stigmatization motivated debtors to engage in a variety of avoidance behaviors, including not answering their phone, ignoring mail, and even physically hiding from friends and family members, to avoid their economic situation being exposed (Thorne & Anderson, 2006). This shame-induced avoidance of loved ones was

dramatized on the TV show *Seinfeld*: When one of the main characters, Elaine, suspects that her boyfriend is married, it turns out that his avoidant behaviors merely stem from his poverty; she declares, “he’s not married... he’s poor.” This example provides a window into the reciprocal relationship between shame and financial hardship.

Survey research further supports the important role of shame in producing financial disengagement, which often worsens one’s financial outcomes. An analysis of the Consumer Bankruptcy Study (Warren, Westbrook, & Sullivan, 2006)—three large studies covering twenty years of bankruptcy filings—concludes that families have become more reluctant to file for bankruptcy over time. This trend has occurred, the authors suggest, because the stigma of a bankruptcy filing has intensified, with most respondents reporting a desire to conceal their bankruptcy filings from at least some of their family, coworkers, friends, and neighbors. Viewed from the lens of information threat theory, individuals may therefore disengage from their financial situation to escape from the likely stigmatization resulting from others becoming aware of their financial troubles. This financial concealment can then worsen people’s financial situation. For example, the stigma associated with bankruptcy deters people from declaring it even when it is in their financial interest to do so (Fay, Hurst, & White, 2002). Similarly, the stigma associated with taking out loans can keep people in short-term, high-interest debt (Greenberg & Hershfield, 2019b).

### 1.2. Shame versus guilt in intensifying financial hardship

We note that shame is not the only emotion people report feeling in response to financial hardship. A related but distinct emotion commonly experienced in reaction to financial hardship is guilt. While colloquially the terms shame and guilt are often used interchangeably, research has found them to be distinct in both their emotional and behavioral components (Cohen, Wolf, Panter, & Insko, 2011; Wolf, Cohen, Panter & Insko, 2010). Both shame and guilt are experienced as feelings of distress but diverge in the focus of that distress. Individuals experiencing shame are more likely to think of their entire self in a negative light, while those experiencing guilt view only one aspect of themselves as having behaved unfavorably (Tangney et al., 2007). Therefore, when individuals feel shame, they focus on *who they are*, the bad self; when they feel guilt, they emphasize *what they did*, the bad act. Correspondingly, both shame and guilt prompt distinct sets of behaviors (Tangney et al., 2007). Whereas shame prompts withdrawal and escape from the shame-inducing event, guilt promotes reparative actions, including apology, confession, and pro-social behaviors (Amodio, Devine, & Harmon-Jones, 2007; Bastian, Jetten, & Fasoli, 2011; Tangney & Dearey, 2002).

As a result, although an individual may experience feelings of both shame and guilt in response to their financial difficulties, the two emotions may manifest in different ways in terms of their behavioral effects. We predict that shame—more so than guilt—will negatively affect financial outcomes because it will lead to an avoidance of financial information and disengagement from one’s financial situation. As a result, we propose that only feelings of shame will exacerbate financial hardship because shame is uniquely related to disengagement.

**Hypothesis 1.** Shame will increase financial hardship over and above the related emotion guilt.

### 1.3. Differentiating the behavioral and emotional components of shame

Prior research has also further divided shame into distinct behavioral and emotional components, along two separate sub-components (Cohen et al., 2011; Wolf et al., 2010): negative self-evaluations (the emotional component) and withdrawal tendencies (the behavioral component). We propose that the behavioral component will be the key factor driving the link between shame and financial hardship. That is, financial shame exacerbates financial hardship because it leads people to financially disengage (e.g., by ignoring low bank account balance), as information

threat theory would suggest. Although avoiding one’s financial situation may temporarily reduce anxiety and self-image concerns, this disengagement will likely be detrimental to one’s financial situation.<sup>2</sup> Overall, we propose that the behavioral component of shame—disengaging and withdrawing from one’s financial situation—will subsequently exacerbate one’s financial hardship because it will leave one ill-equipped to make sound financial decisions (Custers, 2015; Golman et al., 2017; Karlsson et al., 2009). That is, we predict:

**Hypothesis 2.** The relationship between feelings of shame and financial hardship will be mediated by the behavioral component of shame (withdrawal and disengagement).

1.4. Breaking the shame-hardship cycle

Given that our model proposes that shame exacerbates financial hardship by increasing withdrawal behaviors, we identified interventions designed to break the link from shame to withdrawal. Our suggested intervention builds upon classic and contemporary work on self-affirmation, which proposes that affirming valued aspects of the self generally reduces defensive processing and self-protective but counterproductive behaviors (Sherman & Cohen, 2006).

We suggest that shame and affirmation are opposite sides of the same coin: Whereas shame is the feeling that there is something inherently bad or wrong within oneself, affirmation represents the feeling that one has internal goodness or positive value. Steele (1988) proposed that the desire to affirm the overall worth and integrity of the self is a fundamental motive that drives people’s responses to a host of different self-threats (see also: Sherman & Cohen, 2006; Tesser, 2000). To maintain perceptions of overall worth in the face of threat, people can defensively attempt to directly discredit or counteract threatening information to minimize its credulity and impact. People can also indirectly emphasize alternative sources of self-worth that are not currently being threatened (Sherman & Cohen, 2006). As a result, affirmations decrease defensiveness and avoidance by fostering an approach orientation to threat (Kang, Galinsky, Kray, & Shirako, 2015). Affirmation allows individuals to face threatening information in a constructive way, rather than spend mental energy on avoidance, suppression, and rationalization (see Koole, Smeets, van Knippenberg, & Dijksterhuis, 1999; Taylor & Walton, 2011). Thus, affirming valued aspects of the self should decrease the probability that people will disengage from the threat.

**Hypothesis 3.** Self-affirmation will reduce the relationship between feelings of shame and financial withdrawal.

1.5. Overview of studies

We conducted six studies (N = 9,110) to explore how shame influences financial hardship by increasing financial disengagement. The data and code required to reproduce the results discussed below are available on the Open Science Framework ([https://osf.io/7vjks/?view\\_only=ee5283c84d77400db83fd86a80fff155](https://osf.io/7vjks/?view_only=ee5283c84d77400db83fd86a80fff155)).

Study 1 tests the correlations between shame, withdrawal, and financial hardship. Study 2 explores whether shame is related to subjective and objective measures of financial hardship. Study 3 provides causal evidence for the effect of shame on withdrawal behavior by experimentally manipulating shame. Studies 4 and 5 provide longitudinal and within-person evidence for the link between shame and financial hardship and shed light on one potential mechanism underlying this effect (i.e., withdrawal). Finally, Study 6 experimentally

<sup>2</sup> We note that there are some occasions where withdrawing from a financial situation is beneficial for one’s financial hardship; for example, withdrawing can prevent investors from panic-selling when markets are down (Karlsson et al., 2009). Typically, however, withdrawing from financial difficulties tends to exacerbate financial difficulties (Custers, 2015; Golman et al., 2017).

manipulates one variable—self-affirmation—that we hypothesize will reduce the relationship between shame and counterproductive financial decisions.

A major challenge in investigating our research question is that our hypothesized causal chain takes place over time. While withdrawal behaviors may have a deleterious influence on a person’s finances, this influence may manifest over several months or even years. This means that our theoretical model—financial shame leading to financial disengagement, which in turn promotes greater financial distress—cannot be fully tested in a time-constrained controlled experiment. As a result, we also utilize secondary datasets that follow people repeatedly over time (e.g., over five consecutive years in Study 4) and include measures that capture elements from our theoretical model repeatedly; this strategy also helps us test our causal model through statistical techniques which rule out alternative explanations (e.g., by including participant-level fixed effects, or by comparing identical twins in Study 5). Finally, we also include outcome measures that capture financial behaviors over extended periods, such as credit scores. Through this combination of analytical strategies, we have attempted to provide convergent evidence that shame leads to increased financial hardship by prompting withdrawal behaviors. Table 1 provides an overview of the studies discussed in detail below. In the Supplementary Information, we also report four additional studies that provide further correlational and experimental evidence, which we briefly outline in the General Discussion.

We also make an important distinction in our studies between general shame and financial shame, the latter of which is shame experienced specifically in response to one’s financial situation. Although the studies we conducted (Studies 1–3 and 6) measure financial shame, the archival data we accessed (Studies 4 and 5) only contain measures of general shame. Many sources of evidence suggest that financial shame is closely related to general shame, including work by legal scholars on the “bankruptcy stigma” that we described earlier (e.g., Stanley & Girth, 1971; Thorne & Anderson, 2006; Warren et al., 2006), prior research showing when and why people avoid helpful information (e.g., Golman et al., 2017; Szyzner, 2019; Szyzner et al., 2016; Woolley & Risen, 2018), and the literature highlighting the role of shame as a moral emotion (e.g., Keltner & Buswell, 1997; Tangney, Wagner, & Gramzow,

**Table 1**  
Overview of Studies.

Aim	Study	Description and Source	N
Correlations between Shame, Withdrawal and Financial Hardship	1	Survey Recruited from Prolific	589
	2	Data from Bank Account Records	912
Causal Evidence that Shame Leads to Withdrawal	3	Experiment using Videos	301
Longitudinal and Within-Person Evidence for Link between Shame and Financial Hardship	4	Study of Women’s Health Across the Nation (SWAN); five waves	2,867
	5	National Survey of Midlife Development in the United States (MIDUS); two waves	3,693
Self-Affirmation Intervention Reduces Link Between Financial Shame and Withdrawal	6	Experiment using Self-Affirmation as a Moderator (Prolific)	748
	SI Part E	Survey using Guilt and Shame Proneness (GASP) Scale (MTurk)	368
	SI Part F	Experiment Manipulating Stigma on Consequential Behavior (Prolific)	770
	SI Part G	Experiment Manipulating Stigma on Social Withdrawal (Prolific)	304
	SI Part H	Health and Retirement Study (HRS); two waves	9,275

1992; Tangney et al., 1996). Thus, we expect that people who feel more ashamed generally will also be more likely to feel ashamed in relation to their financial situation, which subsequently translates into withdrawal behavior. Individuals who feel ashamed more generally may withdraw from threatening information, including information relevant to their financial situation. In addition, we expect that financial shame will increase withdrawal behavior particularly towards financial information. As a result, we suggest that both general shame and financial shame are related to financial hardship—the key dependent variable across our studies—because they both prompt withdrawal behaviors. We provide empirical evidence that highlights the connections and distinctions between these constructs in Study 1.

**2. Study 1: Correlational study of shame and withdrawal**

Study 1 investigated the correlation between proneness to shame and propensity to withdraw. We also explored the difference between proneness to experience “general shame” and shame specific to one’s financial circumstances (“financial shame”). Similarly, we aimed to unpack the tendency to withdraw generally (e.g., avoiding people and information; “general withdrawal”) and specifically from finances (“financial withdrawal”). Whereas past research has shown that general shame is correlated with general withdrawal (Cohen et al., 2011; de Hooge, Breugelmans, Wagemans, & Zeelenberg, 2018; Roos, Hodges, & Salmivalli, 2014), we also test the relationship between financial shame and financial withdrawal.

**2.1. Method**

**2.1.1. Participants and dataset**

A sample of 589 British adults ( $M_{age} = 33.5$ , 59.8% female) was recruited via Prolific in exchange for £1 per participant. The target sample size (600) was determined before data collection began, and eleven participants who did not complete all measures were excluded from subsequent analyses. Participants responded to questions in five blocks, presented in a randomized order: general shame, financial shame, general withdrawal, financial withdrawal, and financial hardship. The survey ended with basic demographic questions.

**2.1.2. General shame**

We measured general proneness to experience shame using the 10-item Personal Feelings Questionnaire 2 (PFQ2; Harder & Zalma, 1990), in which participants are presented with a list of affective states (including “embarrassment” and “feeling humiliated”) and asked how frequently they felt each one (0 = *You never experience the feeling*, 4 = *You experience the feeling continuously or almost continuously*;  $M = 2.63$ ,  $SD = 0.74$ ,  $\alpha = 0.89$ ).

**2.1.3. Financial shame**

Financial shame was measured through a composite of four items. The items were adapted from existing measures of shame and worded to focus on the respondent’s current financial circumstances. The items were: “My financial situation makes me feel ashamed,” “When I think about my finances, I want to hide,” “My financial affairs sometimes make me feel small, worthless,” and “My finances make me feel humiliated, disgraced.” (1 = *strongly disagree*, 7 = *strongly agree*;  $M = 3.15$ ,  $SD = 1.75$ ,  $\alpha = 0.95$ ).

**2.1.4. General withdrawal**

General withdrawal was measured using five items, several of which were adapted from the Adult Self-Report scale (ASR; Achenbach, Dumenci, & Rescorla, 2003): “I am secretive or keep things to myself,” “I avoid information I find unpleasant,” “I keep from getting involved with others,” “I keep personal information to myself,” and “I would rather be alone than with others” (1 = *strongly disagree*, 7 = *strongly agree*;  $M = 4.29$ ,  $SD = 1.12$ ;  $\alpha = 0.76$ ).

**2.1.5. Financial withdrawal**

We developed a measure of financial withdrawal using five items: “I avoid opening bills,” “I don’t tell anyone about my financial situation,” “I would not answer a phone call if I knew it was from my bank,” “I ignore emails if they are about my finances,” and “I hide my money worries from friends and family” (1 = *strongly disagree*, 7 = *strongly agree*;  $M = 2.83$ ,  $SD = 1.34$ ;  $\alpha = 0.86$ ).

**2.1.6. Financial hardship**

Financial hardship was measured using the current money well-being subscale of the financial well-being scale (Netemeyer et al., 2018). Items include “Because of my money situation, I feel I will never have the things I want in life” and “My finances control my life” (1 = *Does not describe me at all*, 5 = *Describes me perfectly*,  $M = 2.67$ ,  $SD = 0.97$ ;  $\alpha = 0.85$ ).

**2.2. Results**

Given the high degree of conceptual overlap between our measures, we first conducted Confirmatory Factor Analyses that explored the five-factor structure of our model, with each item loading on their hypothesized construct (i.e., general shame, financial shame, general withdrawal, financial withdrawal, and financial hardship). Results suggest an acceptable fit for this five-factor model ( $\chi^2(367) = 1245.76$ ,  $CFI = 0.91$ ,  $RMSEA = 0.064$ ,  $SRMR = 0.059$ ) and a poorer model fit for all alternative four-factor models in which two of the factors were combined. For example, the five-factor model fits the data significantly better than four-factor models that combine financial shame and general shame ( $\chi^2(4) = 1560.2$ ,  $p < .001$ ), financial withdrawal and general withdrawal ( $\chi^2(4) = 682.7$ ,  $p < .001$ ), or general shame and financial hardship ( $\chi^2(4) = 99.11$ ,  $p < .001$ ). These analyses highlight that despite the high positive correlations between constructs, they are nevertheless distinct.

The pairwise correlations between each of our measures are presented in Table 2. As expected, general shame and financial shame were positively correlated; that is, those who feel more ashamed generally are also more likely to feel ashamed in relation to their finances ( $r(588) = 0.50$ ,  $p < .001$ ). We also tested whether the two measures of shame covary to different degrees with the urge to withdraw, as we expected individuals who feel financial shame to have a stronger urge to withdraw from financial (as opposed to more general) information and contexts.

Our evidence is consistent with this expectation. While general shame is correlated with the general tendency to withdraw ( $r(588) = 0.37$ ,  $p < .001$ ), the correlation between financial shame and the tendency to withdraw financially is even stronger ( $r(588) = 0.59$ ,  $p < .001$ ). Importantly, each of the two measures of shame appears to explain unique variance in the tendency to withdraw that is not captured by the other. Those prone to feelings of general shame are also more likely to withdraw financially ( $r(588) = 0.42$ ,  $p < .001$ ), even when controlling for the extent to which they feel financial shame (partial  $r(587) = 0.17$ ,  $p < .001$ ).

We next consider the correlations between the two measures of shame and financial hardship. Those who feel ashamed more generally report greater financial hardship ( $r(588) = 0.48$ ,  $p < .001$ ); this relationship weakens but remains statistically significant when controlling

**Table 2**  
Pairwise Correlation Coefficients in Study 1.

	1	2	3	4
1. General Shame				
2. Financial Shame	0.50***			
3. General Withdrawal	0.37***	0.29***		
4. Financial Withdrawal	0.42***	0.59***	0.34***	
5. Financial Hardship	0.48***	0.79***	0.29***	0.56***

Note. \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ .

for financial shame (partial  $r(587) = 0.15, p < .001$ ). Similarly, proneness to financial shame is highly correlated with financial hardship ( $r(588) = 0.79, p < .001$ ), and this relationship persists when controlling for general shame (partial  $r(587) = 0.73, p < .001$ ).

General withdrawal is also significantly related to financial hardship ( $r(588) = 0.29, p < .001$ ), even when controlling for financial withdrawal (partial  $r(587) = 0.13, p = .003$ ). These correlations highlight the possibility that the general propensity to withdraw from information and social contexts across domains may lead to financial hardship. This could potentially arise from a breakdown in social support networks or an avoidance of possible solutions. Put simply, general withdrawal may lead to greater financial hardship above and beyond withdrawal that is specific to finances.

Finally, although not central to our theorizing, we find that financial shame is more prevalent among younger and lower-income individuals. These and other demographic-specific analyses appear in the [Supplementary Information](#) (Part A).

### 2.3. Discussion

The results of Study 1 empirically distinguish between financial and general shame. Our results show that both forms of shame are correlated with financial hardship but that the relationship is stronger for financial shame, supporting [Hypothesis 1](#). However, the measure of financial hardship in Study 1 was based on a subjective, perceived measure. While subjective measures may capture the psychological toll of financial hardship, they may not reflect objective behaviors which themselves create the conditions for it, such as missed payments and reduced creditworthiness. We address these limitations in our next study.

## 3. Study 2: Financial shame, financial guilt, and objective financial hardship

Study 2 explored whether financial shame and guilt relate to objective measures of financial hardship using financial data held by banks on their customers. We collected a dataset in collaboration with a United Kingdom-based multinational bank, comprising customers of the bank who consented to share one year of personal account data and provided self-reported responses of the extent to which they felt shame and guilt about their financial situation. Financial hardship was measured objectively through two measures: the extent to which participants engaged in counterproductive financial decisions (e.g., taking out payday loans, incurring fines through missed payments), and their credit scores. In addition, participants indicated a self-reported measure of their financial hardship. These data allowed us to further test [Hypothesis 1](#)—that is, whether people who feel a greater sense of shame experience greater financial hardship.

### 3.1. Method

#### 3.1.1. Participants and dataset

Participants were customers of the bank who consented to share one year of personal account data and provided self-reported responses about the extent to which they felt shame and guilt about their financial difficulties. Bank customers were sent a survey link via email. Of 1,013 people who completed the survey, 912 agreed to have their responses matched with personal account data. The sample size was selected to maximize the number of survey recipients without interfering with other surveys administered by the bank, and no incentives were offered for completing the survey. We analyzed data from participants who reported that their account was their primary bank account, who had at least twelve months of data, and for whom no study variables were missing ( $M_{\text{age}} = 37.4, 53.7\%$  female). Variables from this dataset have previously been used to look at the relationship between spending and subjective well-being ([Matz, Gladstone, & Stillwell, 2016](#)).

#### 3.1.2. Financial shame and guilt

Participants answered the questions “When I experience financial difficulties, I feel ashamed” and “When I experience financial difficulties, I feel guilty” on separate five-point scales (1 = *strongly disagree*, 5 = *strongly agree*).

#### 3.1.3. Counterproductive financial decisions

The first method of assessing financial hardship objectively was through individuals’ counterproductive financial decisions. The linked bank data included measures of five counterproductive financial decisions the bank routinely uses in assessing an individual’s financial situation. These were behaviors that had occurred within the previous twelve-month period: being charged a late payment fee on a credit card ( $N = 28$ ), exceeding an overdraft limit ( $N = 18$ ), being charged a returned transaction fee for insufficient funds ( $N = 160$ ), taking out a payday loan ( $N = 14$ ), or withdrawing a cash advance on a credit card ( $N = 26$ ). We collapsed across all behaviors to create a measure that captured whether individuals had engaged in at least one behavior indicating counterproductive financial decisions in the last twelve months ( $N = 206, 33.4\%$  of sample).

#### 3.1.4. Credit scores

The second method we used to objectively assess financial hardship was via credit scores, a metric based on prior individual behavior used by companies to measure the probability of default. This data was available for a subset of participants ( $N = 542, M = 652.43, SD = 41.78$ ). A benefit of credit scores is that they incorporate a wide range of behaviors not directly recorded by the bank (e.g., missed utility bills, rent arrears) and are shared across financial institutions ([Meier & Sprenger, 2012](#)). Thus, credit scores provide a broader, more comprehensive measure of an individual’s financial hardship.

#### 3.1.5. Self-reported financial hardship

In addition, we assessed financial hardship through self-report: Participants were asked to respond to three questions ( $\alpha = 0.66$ ) assessing their financial circumstances subjectively (1 = *strongly disagree*, 5 = *strongly agree*), with the items being “I often lose sleep worrying about my finances,” “I am confident in my ability to handle an unexpected expenditure up to £500” (*reverse-scored*), and “I am satisfied with my financial situation” (*reverse-scored*).

#### 3.1.6. Control variables

Covariates included known predictors of financial well-being ([Greenberg & Hershfield, 2019a](#); [Greenberg & Mogilner, 2020](#); [Greenberg, Sussman, & Hershfield, 2020](#); [Lusardi et al., 2011](#)): financial variables including savings and debt; basic demographic information, including gender, age, employment status, and whether they had children; and proxies for monthly income (i.e., the average of credits to a participant’s checking account) and total spending (i.e., the amount of money leaving a participant’s bank account in the last twelve months) reported by the bank.

### 3.2. Results

The correlation of shame and guilt was statistically significant, positive, and sizable ( $r(615) = 0.61, p < .001$ ), suggesting that shame and guilt shared 37% of their variance. To estimate the unique effect of shame and guilt on financial hardship, we present models where both are regressed simultaneously. Zero-order correlation tables for Study 2 and subsequent studies are reported in the [Supplementary Information](#), Part B.

#### 3.2.1. Counterproductive financial decisions

To explore how financial shame and financial guilt relate to counterproductive financial decisions, we conducted a logistic regression with both as simultaneous predictors. In line with [Hypothesis 1](#), the

relationship between financial shame and counterproductive financial decisions was statistically significant and positive ( $b_{\text{shame}} = 0.242, SE = 0.094, z = 2.57, p = .010$ ; see Table 3, Model 1), such that higher shame was associated with a higher likelihood of engaging in counterproductive financial decisions. In contrast, financial guilt was not significantly related to counterproductive financial decisions ( $b_{\text{guilt}} = 0.016, SE = 0.098, z = 0.16, p = .873$ ; see Table 3, Model 1). Controlling for financial (income, savings, spending, and debt) and demographic (age, gender, employment, and number of children) covariates did not substantively change the results ( $b_{\text{shame}} = 0.224, SE = 0.093, z = 2.40, p = .016$ ;  $b_{\text{guilt}} = 0.018, SE = 0.098, z = 0.19, p = .850$ ; see Table 3, Model 2).

3.2.2. Credit scores

We next tested whether financial shame and financial guilt were related to credit scores and find that the relationship between financial shame and credit scores was statistically significant and negative ( $b_{\text{shame}} = -4.889, SE = 1.655, t(540) = -2.95, p = .003$ ; see Table 3, Model 3), such that greater financial shame predicted lower credit scores. In contrast, there was no statistically significant relationship between financial guilt and credit scores ( $b_{\text{guilt}} = 0.877, SE = 1.782, t(540) = 0.49, p = .623$ ; see Table 3, Model 3). Again, the inclusion of financial and demographic covariates did not substantively change the results ( $b_{\text{shame}} = -3.048, SE = 1.413, t(528) = -2.16, p = .032$ ;  $b_{\text{guilt}} = 1.263, SE = 1.422, t(528) = 0.89, p = .375$ ; see Table 3, Model 4).

3.2.3. Self-reported financial hardship

Finally, we tested whether financial shame and financial guilt were related to the self-reported measure of financial hardship. We found that the relationship between financial shame and self-reported financial hardship was statistically significant and positive ( $b_{\text{shame}} = 0.609, SE = 0.114, t(614) = 6.35, p < .001$ ; see Table 3, Model 5), with higher financial shame associated with greater self-reported financial hardship.

This result remained statistically significant when including financial and demographic control variables ( $b_{\text{shame}} = 0.553, SE = 0.108, t(602) = 5.13, p < .001$ ; see Table 3, Model 6). While there was a marginally significant relationship between financial guilt and self-reported financial hardship ( $b_{\text{guilt}} = 0.234, SE = 0.128, t(614) = 1.83, p = .068$ ; see Table 3, Model 5), this was no longer the case when including the financial and demographic control variables ( $b_{\text{guilt}} = 0.184, SE = 0.117, t(602) = 1.58, p = .114$ ; see Table 3, Model 6).

4. Discussion

Across two objective measures and one subjective measure of financial hardship, Study 2 provides support for the idea that financial shame predicts greater financial hardship (Hypothesis 1). It is worth noting that this pattern of results could be partially explained by selection effects or unmeasured confounding variables, and that it is not possible to test the causal links between shame and financial hardship in this dataset. We turn next to establishing causal evidence that financial shame increases financial disengagement.

5. Study 3: Financial shame causes financial disengagement

Our previous studies have demonstrated that shame and financial hardship are positively correlated. In Study 3, we utilized an experimental approach to ask whether feeling financial shame leads people to financially disengage.

5.1. Method

5.1.1. Participants

A sample of 301 adults was recruited via Prolific ( $M_{\text{age}} = 33.4, 54.2\%$  female). Participants were paid \$0.69 (equivalent to £0.50) for

**Table 3**  
Financial Hardship Predicted by Financial Shame in Study 2.

	Counterproductive Financial Decisions		Credit Scores		SR Financial Hardship	
	Model 1 Logit	Model 2 Logit	Model 3 OLS	Model 4 OLS	Model 5 OLS	Model 6 OLS
Financial Shame	0.242* (0.094)	0.224* (0.093)	-4.889** (1.655)	-3.048* (1.413)	0.609*** (0.114)	0.553*** (0.108)
Financial Guilt	0.016 (0.098)	0.018 (0.098)	0.877 (1.782)	1.263 (1.423)	0.234 (0.128)	0.185 (0.117)
Monthly Income		0.046 (0.087)		-1.850 (1.261)		-0.102 (0.085)
Monthly Spending		0.133 (0.142)		13.633*** (2.514)		-0.308 (0.172)
Savings		-0.015 (0.020)		0.381** (0.138)		-0.030*** (0.007)
Debt		0.008 (0.011)		-0.161 (0.261)		0.040* (0.018)
Age		0.002 (0.008)		0.530*** (0.152)		0.022* (0.009)
Female		-0.183 (0.183)		2.005 (2.991)		0.419 (0.214)
Has Children		-0.066 (0.208)		-7.643* (3.590)		0.758** (0.240)
Full-Time Student		-1.905** (0.603)		17.097* (8.687)		-2.243*** (0.554)
Retired		-1.405** (0.541)		43.940*** (8.257)		-1.984*** (0.572)
Working Full-Time		-0.204 (0.294)		30.620*** (6.473)		-1.478*** (0.359)
Working Part-Time		-0.222 (0.348)		23.773** (7.403)		-0.905* (0.427)
Constant	-1.576*** (0.324)	-1.316* (0.562)	665.554*** (6.546)	598.178*** (10.568)	5.198*** (0.394)	6.272*** (0.635)
R <sup>2</sup> /Pseudo R <sup>2</sup>	0.016	0.065	0.017	0.330	0.102	0.251
Num. obs.	617	616	543	542	617	616

Note. \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ . Robust standard errors in parentheses. Omitted employment category represented by unemployment. Financial variables reported in units of £1,000.

completing the survey. The target sample size (300) was determined before data collection began. The hypotheses, methods, and analyses were pre-registered (<https://aspredicted.org/n4ty5.pdf>) and the pre-registered analysis plan was followed completely.

**Financial Shame Manipulation.** We adapted a typical shame manipulation in which people either consider their feelings of shame or instead recount neutral activities or emotions (de Hooge, Breugelmans, & Zeelenberg, 2008; Han, Duhachek, & Agrawal, 2014). To make the experience of financial shame salient and self-relevant, we employed a commonly used perspective-taking technique by asking participants to put themselves in an actor’s shoes (Galinsky & Moskowitz, 2000; Galinsky, Wang, & Ku, 2008). Participants were asked to watch a short video about a man named Dave who was “currently struggling with his finances.” In the video, a professional actor performed a vignette that either highlighted his financial shame or detailed the activities of his day.

The vignettes spoken by the actor were as follows.

**Treatment Condition.** “Hello, my name is Dave. I’m [actor’s age: 31] years old from Baldwin, Michigan. Here’s the situation I find myself in. I have money problems... Big problems. I owe thousands, tens-of-thousands on credit cards, a useless student loan, and medical bills. I’ve dug myself a hole I can’t seem to crawl out of. The debts crept up and up over the years, they’re unbearable now. I’ve kept this all to myself and it’s been isolating. I get calls from debt collection agencies for loans I’ve fallen behind on. I stuff all the bills and final notices into a little drawer. I cry myself to sleep at night because I’m so disappointed in myself. I’m a grown man and should be able to pull my financial life together. I’m just grateful that nobody else knows about this. These dark

feelings have been eating at me. I feel disgusted with the situation. I have these thoughts telling me how horrible I am for getting into this mess. I loathe what’s happening. I try not to make a big deal about it, but it hurts. I just want to fix this, to get out of this mess.”

**Control Condition.** “Hello, my name is Dave. I’m [actor’s age: 31] years old from Baldwin, Michigan. And here’s what I did yesterday. I woke up a few minutes before my alarm. I got washed and dressed and had some oatmeal and a banana for breakfast. Then I headed out for work. I got a coffee on the way. The commute was pretty smooth; the roads were clear. I got to work right on time. I said hello to my colleagues, who are a nice bunch. For lunch, I brought some pasta with me in a Tupperware box. My workday was pretty productive overall—I crossed off all my To Dos. On the way home I got stuck in some traffic. But it was a nice evening out—so I didn’t mind too much. When I got home, I watched my favorite TV show and did the laundry. I was pretty tired after that, and so I headed to bed for an early night.”

5.1.2. Financial disengagement

Participants were given a list of fifteen randomly ordered subject lines from their hypothetical “email inbox.” They were asked to indicate, for each subject line, whether they would choose to read the email now, read the email later, or delete the email. While participants were asked to indicate how they would like to act upon the email, they were not subsequently asked to read beyond the subject lines. Although most of the subject lines were typical (e.g., “An update to our Terms & Conditions,” “Please add me to your LinkedIn network”), one contained financially relevant information indicating “Your auto payment is past due.” Financial disengagement was thus measured by the action taken

Below are subject lines in your email inbox.

Indicate which action, if any, you would be inclined to take.

	READ NOW	READ LATER	DELETE
(no subject)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An update to our Terms & Conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Save the date	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Please add me to your LinkedIn network.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spring sales offers up to 75% off!	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can you edit this for me?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your friend sent you a \$20 purchase credit!	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
So glad we caught up the other day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Could you make sure...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hey	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weekly Digest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your auto payment is past due	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hey, thought you would like this picture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super interesting article-takes 3 mins to read	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Please fill out this survey	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Fig. 1. Task Measuring Financial Disengagement.

on this email about the past-due payment. Fig. 1 depicts how this measure was presented to participants.

### 5.1.3. Manipulation check

After the task, participants were asked to indicate their agreement with the statement “Dave expressed a lot of shame” (1 = *strongly disagree*, 7 = *strongly agree*).

## 5.2. Results

### 5.2.1. Manipulation check

The manipulation was successful. The financial shame condition ( $M = 5.96$ ,  $SD = 1.11$ ) resulted in greater ratings of shame than the control condition ( $M = 1.47$ ,  $SD = 0.87$ ;  $t(299) = -38.95$ ,  $p < .001$ ).

### 5.2.2. Financial disengagement

In line with the pre-registration, financial disengagement was operationalized as the choice to either postpone reading or delete the email about the past-due payment rather than read it immediately. A linear probability model predicting the choice to read the focal email (1 = read now, 0 = otherwise) as a function of the financial shame condition (1 = financial shame condition, 0 = control) yielded the predicted result. Being randomly assigned to the financial shame condition had a significantly negative effect on the choice to engage with the financially relevant email ( $b = -0.209$ ,  $SE = 0.053$ ,  $t(299) = -3.98$ ,  $p < .001$ ). Whereas 78.4% of participants in the control condition chose to read the email now, only 57.5% of those in the financial shame condition opted to do so. The results are substantively similar when a logistic regression is conducted instead ( $b = -0.985$ ,  $SE = 0.258$ ,  $z = -3.82$ ,  $p < .001$ ).

One potential concern is that financial shame could affect the likelihood of opening any emails, and that these findings are not specific to financial disengagement. Notably, financial shame does not have an effect on the number of non-target emails chosen for immediate reading (range: 0–13;  $b = -0.002$ ,  $SE = 0.283$ ,  $t(299) = -0.01$ ,  $p = .994$ ), and including this baseline as a covariate in our focal analysis has no impact on the effect of financial shame on the choice to read the email about the past-due payment ( $b = -0.209$ ,  $SE = 0.053$ ,  $t(298) = -3.96$ ,  $p < .001$ ).

## 5.3. Discussion

The results from Study 3 provide causal support for the idea that shame from financial hardship causes people to avoid information pertaining to their financial situation. Participants randomly assigned to a condition in which they were prompted to consider feeling ashamed of their financial difficulties were subsequently less likely to engage with financial information that could help them repair those difficulties.

## 6. Study 4: Within-participant analysis in longitudinal data

One concern from the previous studies is that our results could be driven by omitted variable bias, such that the relationship between shame and financial hardship is due to some unobserved individual difference that we are unable to control for. To address this concern, we drew on panel data in Study 4 in which general shame and financial hardship are measured at five points in time. Leveraging the longitudinal nature of the data, we were able to test whether changes in shame over time were related to changes in financial hardship over time. As these so-called first-difference analyses hold the participant constant—effectively accounting for unobserved heterogeneity (e.g., see Wooldridge, 2010)—we are able to reduce concerns about omitted variable bias. In our analyses, we also control for time-specific fixed effects, ruling out any shocks that occurred in a particular year.

## 6.1. Method

### 6.1.1. Participants and dataset

Our data comes from the Study of Women’s Health Across the Nation (SWAN), a multisite, prospective study that was intended to examine psychosocial changes during the menopausal transition among a cohort of midlife women between ages 42 and 52. For additional details of recruitment procedures, study design, and study components, see Sowers et al. (2007). Although there were ten waves in total, the independent and dependent variables of interest were measured only in the latter five (waves 6–10), which comprise our full sample for analysis ( $N = 2,867$ ,  $M_{age} = 46.9$ , 100% female).

### 6.1.2. General shame

Within SWAN, general shame was assessed using responses to a single item in which participants were asked to indicate “how strongly you have experienced these feelings this past week: Ashamed” (1 = *not at all/very slightly*, 2 = *a little*, 3 = *moderately*, 4 = *quite a bit*, 5 = *extremely*;  $M = 1.24$ ,  $SD = 0.61$ ).

### 6.1.3. Self-reported financial hardship

Financial hardship was assessed with a single item that asked each participant whether they had had financial difficulties and how upset they were about them (0 = *no*; 1 = *yes, not at all upsetting*; 2 = *yes, somewhat upsetting*; 3 = *yes, very upsetting*; 4 = *yes, very upsetting & still upsetting*;  $M = 0.60$ ,  $SD = 1.14$ ).

### 6.1.4. Control variables

We also controlled for changes in income over time to more precisely estimate the relationship between shame and changes in financial hardship as opposed to changes in earnings more generally. We did not include the control variables used in Study 2 (e.g., age) because our model focuses on within-person change over time and so cannot model variables that do not vary across the waves in the survey.

## 6.2. Results

### 6.2.1. Cross-sectional analyses

We first conducted analyses on the cross-sectional data, pooling observations across time points and nesting by participant and time. We regressed financial hardship on general shame and find that the relationship is statistically significant and positive ( $b = 0.414$ ,  $SE = 0.031$ ,  $p < .001$ ), such that higher levels of general shame are related to greater financial hardship. This replicates our earlier findings showing that shame and financial hardship are positively related.

### 6.2.2. First-difference analyses

We next conducted OLS regressions using first-difference analyses to explore whether changes in general shame are related to changes in financial hardship. First-difference analysis is considered an alternative to fixed-effects estimation; when there are only two time periods, they are equivalent methods. However, when there are multiple time periods, as is the case here, first-difference estimation is preferable under some conditions. In particular, when errors are serially correlated (e.g., when shame in one period is correlated with shame in the prior period, or financial hardship in one period is correlated with financial hardship in the prior period; see Hamilton, 1994), regressions that use changes over time rather than levels are preferred. Similar to fixed-effects regressions, first-difference regressions effectively rule out unobserved, time-invariant individual differences that could account for the relationship in question, thus addressing concerns about omitted variables.

We therefore calculated changes in general shame and financial hardship between each wave, and subsequently collapsed these across all time points. When we regressed changes in financial hardship on changes in general shame, nesting by time and participant, we found a statistically significant and positive relationship ( $b = 0.097$ ,  $SE = 0.026$ ,



$p < .001$ ), such that more pronounced changes in feelings of general shame were positively associated with greater changes in financial hardship. This effect remained statistically significant when additionally controlling for changes in income ( $b = 0.101, SE = 0.026, p < .001$ ).

In the [Supplementary Information](#), Part C, we also report an autoregressive cross-lagged path model, where we find that shame was consistently positively correlated with future financial hardship. More precisely, three out of four of the cross-lagged effects of shame on financial hardship were statistically significant, which is consistent with our prediction that higher levels of shame lead to greater financial hardship, even when controlling for participants' previous levels of financial hardship. There is also evidence of reciprocity: Those experiencing financial hardship in one period are more likely to experience greater shame in the subsequent period, even when controlling for prior levels of shame.

### 6.3. Discussion

Study 4 helps rule out all time-invariant unobserved differences in the relationship between shame and financial hardship by showing that changes in shame are related to changes in financial hardship in a longitudinal dataset. Building on this, we provided evidence consistent with the notion that general shame leads to greater financial hardship.

## 7. Study 5: Testing the role of disengagement through a longitudinal survey

In Study 5, we analyzed a longitudinal and representative sample to explore whether the behavioral disengagement prompted by general shame would be associated with greater financial hardship, in line with [Hypothesis 2](#). This dataset also allowed us to rule out potential alternative explanations through a co-twin analysis, described in further detail below.

### 7.1. Method

#### 7.1.1. Participants and dataset

The participants in Study 5 comprised American adults between the ages of 30 and 84 years (second wave:  $N = 3,693; M_{age} = 54.5, 55.0\%$  female; combined waves with relevant variables:  $N = 2,377$ ) who responded to the second and third waves of the National Survey of Midlife Development in the United States (MIDUS II), and who completed all measures of interest.

#### 7.1.2. General shame

Within MIDUS, general shame was assessed by a question about the frequency with which participants had felt shame over the previous 30 days on a five-point scale (1 = none of the time, 2 = a little of the time, 3 = some of the time, 4 = most of the time, 5 = all of the time).

#### 7.1.3. Behavioral disengagement

As a proxy for the tendency to withdraw, we use a measure of behavioral disengagement included in the second wave of MIDUS (Carver, Scheier, & Weintraub, 1989) in which participants were asked to indicate how they usually experience a stressful event (1 = a lot, 4 = not at all): "I give up trying to reach my goal," "I admit to myself that I can't deal with it, and quit trying," "I give up the attempt to get what I want," and "I reduce the amount of effort I'm putting into solving the problem." The four items were reverse-scored and combined into a single composite measure of behavioral disengagement and showed acceptable reliability ( $\alpha = 0.73$ ).

#### 7.1.4. Self-reported financial hardship

In MIDUS, financial hardship was assessed using five items, including participants' ratings of their current financial situation (0 = worst possible financial situation, 10 = best possible financial situation), the

amount of control they have over their financial situation (0 = no control at all, 10 = very much control), how much thought and effort they put into their financial situation (0 = no thought or effort, 10 = very much thought and effort), how much money they have to meet their needs (1 = more money, 2 = just enough money, 3 = not enough money), and how difficult it is to pay monthly bills (1 = very difficult, 4 = not at all difficult). All measures except the self-assessment of needs were first reverse-coded, such that higher scores reflected greater financial hardship. Because each item was rated on a different scale, we standardized each item's responses into z-scores before combining them into a single composite measure (both waves:  $\alpha = 0.75$ ).

### 7.1.5. Control variables

Analyses are reported both with and without controlling for income, age, and the number of children each participant had; these are variables known to correlate with financial well-being in past research (Lusardi et al., 2011).

## 7.2. Results

### 7.2.1. Longitudinal analyses

We combined the second and third waves into a panel dataset and regressed self-reported financial hardship on general shame, with fixed effects for participant and clustered robust standard errors. Participants who reported greater feelings of general shame also reported greater financial hardship ( $b = 0.058, SE = 0.024, p = .013$ ; [Table 4](#), Model 1). The effect of general shame on financial hardship persisted when controlling for time-variant covariates, income, and the number of children ( $b = 0.083, SE = 0.026, p = .001$ ; [Table 4](#), Model 2). Replicating results from our prior studies, these analyses show that general shame is positively related to financial hardship.

### 7.2.2. Cross-sectional behavioral disengagement mediation

The availability of the behavioral disengagement measure in the second wave of data afforded us the opportunity to test for the underlying mechanism linking general shame to financial hardship. Note that the next set of analyses relies solely on second-wave data for all measures (second wave:  $M_{age} = 55.4, 53.3\%$  female), including participants who did not participate in the third wave. We first aimed to test whether behavioral disengagement was related to financial hardship, in line with [Hypothesis 2](#). In support of this idea, we find that the relationship between behavioral disengagement and financial hardship was statistically significant and positive ( $b = 0.058, SE = 0.005, p < .001$ ), such that higher levels of behavioral disengagement were related to increased financial hardship.

Next, to test [Hypothesis 2](#) that behavioral disengagement underlies

**Table 4**  
Within-Person Changes in General Shame Predicting Financial Hardship, Study 5.

	Model 1	Model 2
General Shame	0.058* (0.024)	0.083** (0.026)
Income		-0.000 (0.000)
Number of Children		-0.037 (0.022)
Constant	1.183*** (0.029)	1.268*** (0.067)
R <sup>2</sup>	0.003	0.010
Num. obs.	4,754	4,296
Num. clusters	2,377	2,337

Note. \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ . Robust standard errors in parentheses. Financial variables reported in units of \$1,000. We note that the inclusion of person-level fixed effects means the income coefficient represents the effect of within-person changes in income over time. As expected, income is strongly correlated with financial hardship cross-sectionally.

the relationship between general shame and financial hardship, we conducted a mediation model using second-wave data with general shame as the independent variable, behavioral disengagement as a mediator, and financial hardship as the dependent variable. The coefficients appear in Fig. 2. A bootstrapped (10,000 resamples) model with bias-corrected confidence estimates (Preacher & Hayes, 2004) showed a statistically significant indirect effect (the confidence interval of the indirect effect excluded zero, 95% CI [0.030, 0.052], 99% CI [0.026; 0.055]). These results thus provide correlational evidence consistent with Hypothesis 2: Higher levels of shame prompt individuals to disengage from their financial situation, and this further exacerbates their financial hardship.

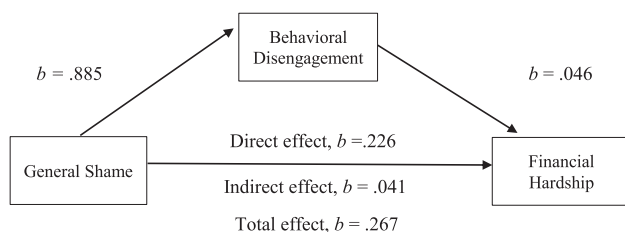
We also test whether general shame and behavioral engagement measured in the second wave predict financial hardship in the third wave. While the available measures do not allow us to establish temporal precedence, we present this test to provide a more complete analysis. A bootstrapped (10,000 resamples) model with bias-corrected confidence estimates (Preacher & Hayes, 2004) showed a statistically significant indirect effect linking shame and behavioral disengagement in the second wave to financial hardship in the third wave (the confidence interval of the indirect effect again excluded zero, 95% CI [0.010, 0.034]).

### 7.2.3. Co-twin control analysis

To rule out the possibility that individual factors account for the relationship between shame and financial hardship, we also present a co-twin control analysis (McGue, Osler, & Christensen, 2010) that makes use of the representative sample of twins recruited within MIDUS. By comparing twins who share the same genes and upbringing (i.e., monozygotic, identical twins), we can rule out many potential unobserved confounds—such as heritable psychological traits, early-life socialization, and family background—that could account for the correlation between shame and financial hardship. In the twin sample, the within-twin-pair estimate of general shame on financial hardship remains statistically significant and positive ( $\beta_W = 0.326$ ,  $SE = 0.142$ ,  $z = 2.29$ ,  $p = .022$ ), indicating that stable differences are unlikely to account for this relationship. Further details and results are provided in the Supplementary Information, Part D.

## 7.3. Discussion

The results from Study 5 complement our earlier findings and highlight that shame may exacerbate financial hardship by prompting behavioral disengagement. That is, our evidence is consistent with higher levels of shame increasing individuals' tendency to withdraw, which can help explain a subsequent escalation in financial hardship. Moreover, by studying twins, we provide additional evidence in favor of a causal relationship between shame and financial hardship by ruling out genetic and early-environment confounds as alternative explanations. Although these analyses based on twins do not provide perfect causal evidence, they suggest that the relationship between shame and financial hardship is unlikely due to stable differences between



**Fig. 2. Mediation Model Linking Shame to Financial Hardship through Behavioral Disengagement, Study 5.** Note. Mediation by behavioral disengagement on the shame-financial hardship relationship in Study 5, using second-wave data.

individuals.

## 8. Study 6: The buffering influence of self-affirmation

Our model suggests there is a vicious cycle between shame and financial hardship, in which shame-induced withdrawal increases the probability of counterproductive financial decisions, thereby deepening one's financial hardship. Study 6 explored whether a theoretically motivated intervention could break this cycle by cutting the chord between financial shame and withdrawal. We build upon self-affirmation theory, which states that people are motivated to preserve a positive self-image. One way that people maintain a positive self-image is through defensive processing and the avoidance of threatening information. Alternatively, one can reduce defensive processing and avoidance by reinforcing core values that are particularly important to oneself (Steele, 1988). Thus, self-affirmation can serve as a buffer or resource that allows people to more directly and productively cope with information that is threatening to the self (Steele & Liu, 1983). Past research has shown that affirmations foster an approach orientation to threat rather than avoidance, such that affirmations can make people better able to cope with threats in a constructive way rather than one in which mental energy is spent on avoidance and suppression (Koole et al., 1999; Taylor & Walton, 2011). We predicted, consistent with Hypothesis 3, that offering individuals an opportunity to self-affirm on their important values would weaken the relationship between financial shame and withdrawal.

We included two different self-affirmation manipulations and randomly assigned participants to one of the two different versions. The first manipulation (Cohen, Aronson, & Steele, 2000) asked individuals to rank eleven different values in order of most to least important and write a brief essay about their most important value (henceforth the *values* condition). The second condition (Reed & Aspinwall, 1998) encouraged participants to elaborate on prior acts of kindness (henceforth the *kindness* condition). Although prior literature does not explicitly distinguish between these different modes of self-affirmation, we note that the *target* of the self-affirmation in these manipulations is different: whereas the target is the focal individual in the *values* condition, the target is other people in the *kindness* manipulation. Given the interpersonal nature of shame and the potential stigma of financial difficulties (Custers, 2015; Golman et al., 2017; Sweeny et al., 2010; Woolley & Risen, 2018), it is possible that the *kindness* self-affirmation—because it is targeted toward affirming those interpersonal relationships—may affect the relationship between financial shame and withdrawal differently than the *values* self-affirmation. As such, both interventions were included in this study. We explore and discuss the differences between them in more detail below.

### 8.1. Method

#### 8.1.1. Participants

A sample of 748 adults was recruited via Prolific ( $M_{age} = 33.9$ , 66.3% female). Participants were paid £0.75 for completing the study. The target sample size (750) was determined before data collection began. The hypotheses, methods, and analyses were pre-registered (<https://aspredicted.org/eu2tj.pdf>) and the pre-registered analysis plan was followed completely.

#### 8.1.2. Self-affirmation manipulation

Participants were randomly assigned to one of three conditions: two conditions designed to induce high self-affirmation (*kindness* and *values*) and a *control* condition. The *kindness* condition included the 10-question kindness questionnaire (Reed & Aspinwall, 1998), which encourages participants to elaborate on prior acts of kindness (e.g., “Have you ever forgiven another person when they have hurt you?”, “Have you ever been considerate of another person's feelings?”). Affirmative responses were followed with prompts for examples of past behavior. The *values*

condition draws from the values essay technique (Cohen et al., 2000), in which participants rank eleven different values (e.g., relations with friends/family, sense of humor) in order of most to least important, and write a brief essay about the most important value to them on the list. Finally, in the *control* condition, participants responded to a set of questions unrelated to the content (Critcher, Dunning, & Armor, 2010) that served neither as a threat nor a self-affirmation of personal characteristics. In particular, they responded to the Jelly Bean Flavor Scale (Critcher et al., 2010) in which they ranked Jelly Bean flavors in order of perceived tastiness and wrote a paragraph describing the flavor of the Jelly Bean they ranked the tastiest.

### 8.1.3. Financial shame

Financial shame was assessed using a composite of the four questions used in Study 1 ( $M = 3.40, SD = 1.79; \alpha = 0.95$ ).

### 8.1.4. Financial withdrawal

The dependent variable, financial withdrawal, was a composite of questions similar to those used in Study 1. In particular, participants responded to five items adapted to thoughts about the specific moment: “I would avoid opening a bill,” “I would not tell anyone about my financial situation,” “I would not answer a phone call if I knew it was from my bank,” “I would ignore an email if it was about my finances,” and “I would hide my money worries from friends and family” (1 = *strongly disagree*, 7 = *strongly agree*;  $M = 2.99, SD = 1.32; \alpha = 0.83$ ).

## 8.2. Results

We first tested whether financial shame predicts likelihood to withdraw. In a linear regression controlling for age and income, we find the expected positive relationship ( $b = 0.494, SE = 0.021, t(744) = 23.89, p < .001$ ); every one-point increase in financial shame was associated with a 0.49 (7% on a seven-point scale) increase in financial withdrawal.

We next included indicator variables representing the experimental conditions and their interaction with financial shame. The interaction between the *values* condition and financial shame was small and not statistically significant ( $b = -0.027, SE = 0.089, t(740) = -0.31, p = .759$ ). In contrast, the interaction between the *kindness* condition and financial shame was larger ( $b = -0.196, SE = 0.088, t(740) = -2.23, p = .026$ ; after Bonferroni correction for multiple-hypothesis testing:  $p = .052$ ), suggesting that the buffering effect of the kindness affirmation on withdrawal was strongest for those who felt greater financial shame. Fig. 3 depicts the marginal effect of the kindness condition across the values of financial shame and demonstrates that the intervention

significantly reduces financial withdrawal (the 95% CI crosses zero) for those approximately 0.6 standard deviations above the mean in financial shame.

## 8.3. Discussion

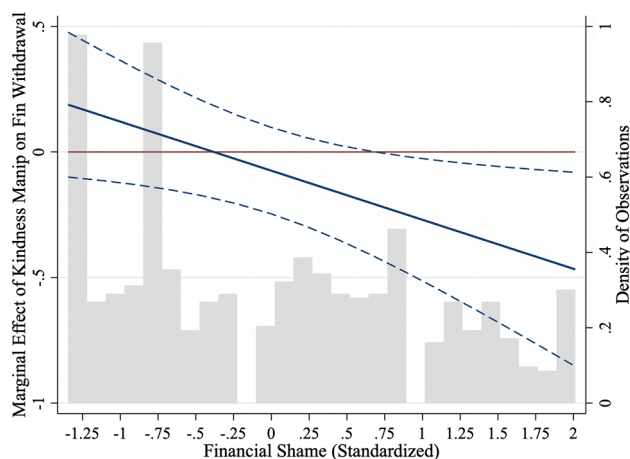
Study 6 tested the possibility that two self-affirmation interventions would attenuate the relationship between financial shame and withdrawal. We found that engaging in a kindness intervention reduced the likelihood of withdrawing for those who were experiencing high levels of financial shame. We can only speculate as to why the kindness intervention was successful in buffering the relationship between financial shame and financial hardship, while the values condition was not. One possibility is that, given the interpersonal nature of shame, the kindness manipulation was more effective because it focused on one’s relationship with others. Another possibility is that the kindness manipulation encouraged participants to spend more time thinking about and listing specific memories, an exercise that acted as a more powerful affirmation than the values exercise. We encourage future research to further explore the differences in the effects of the kindness and values self-affirmation manipulations.

## 9. General Discussion

Across six studies, we found evidence for a vicious cycle between shame and financial hardship: shame induces withdrawal, which increases the probability of counterproductive financial decisions that only deepen one’s financial hardship. We also found that a theoretically motivated intervention—affirming acts of kindness—can break this vicious cycle by reducing the link between financial shame and financial disengagement (Study 6). In addition to establishing that shame is correlated with subjective assessments of financial withdrawal and hardship, we demonstrated that the relationship maps onto real-world, objective financial hardships reported by a financial institution (Study 2) that financial shame is causally and uniquely connected to financial disengagement (Study 3), and that this relationship cannot be explained by unobserved heterogeneity (within-participant analyses in Study 4) or stable differences (identical twin analyses in Study 5).

Our research extends the literature on financial decision-making and emotions in a number of ways. Many individuals live in precarious financial situations (Lusardi et al., 2011), in part because they engage in behaviors that are not in their long-term financial interest (Madrian & Shea, 2000; Porcelli & Delgado, 2009; Stango & Zinman, 2014; Sussman & Alter, 2012). Our research contributes to this line of work by testing the emotional drivers of these counterproductive financial decisions. In contrast to prior research that has investigated the role of emotions in financial difficulties by demonstrating how the latter can trigger negative feelings (Bradshaw & Ellison, 2010; Gabler, 2016; Ruberton et al., 2016; Yi & Baumgartner, 2011), we provide evidence for a reciprocal path: Feeling shame about one’s financial difficulties also influences what financial behaviors individuals engage in by prompting counterproductive financial decisions. Thus, individuals may be more likely to avoid counterproductive financial decisions and create greater financial well-being if they can find ways to reduce their feelings of shame.

The current research also extends the literature on the behavioral effects of shame. We find that shame is impairing in a context—financial affairs—that requires active engagement. For example, people typically need to budget to avoid excessive consumption or unmanageable debts. Similar situations where engagement is necessary to mitigate future consequences—and where shame-induced withdrawal may impair its resolution—include getting tested for a sexually transmitted illness (Barth, Cook, Downs, Switzer, & Fischhoff, 2002) or seeking help with mental health (Gulliver, Griffiths, & Christensen, 2010; Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999). Our results suggest that reducing the sense of shame that accompanies such situations may help to improve social outcomes in contexts where individuals need to



**Fig. 3. Marginal Effect of Kindness Manipulation on Financial Withdrawal Across Financial Shame Levels.** Note. This figure represents the change in financial withdrawal resulting from the kindness manipulation across the range of financial shame. Error bands represent the uncorrected 95% CI.

engage proactively to improve their future situation (e.g., earlier interventions and detection rates). In this way, our findings help to demonstrate the importance of further integrating the literature on approach and avoidance motivations that result from distinct emotions into financial decision-making (Elliot, Eder, & Harmon-Jones, 2013). Emotional responses that prompt avoidance motivations—such as shame—may exacerbate financial hardship.

Given our focus on the link between financial disengagement and hardship, we also predicted and found that shame but not guilt predicted financial hardship because shame but not guilt induces withdrawal behaviors. This finding further establishes that similar negative emotions may have distinct consequences for financial decision-making, and in particular highlights the unique effects of shame in shaping subsequent financial hardship (Andrade & Ariely, 2009; Greenberg & Hershfield, 2019b; Ifcher & Zarghamee, 2011; Rick & Loewenstein, 2008).

This research also offers a novel conceptual window into understanding the stigma surrounding bankruptcy, one of the most significant markers of financial hardship. Previous research has documented that the stigma of bankruptcy has increased over time (Warren et al., 2006), such that those on the brink of bankruptcy often feel too ashamed to tell others about their financial hardship. Our research suggests that the shame triggered by financial hardship may lead individuals to engage in behaviors that exacerbate rather than ameliorate their existing hardship. In doing so, it can help explain behaviors found in past research. For example, individuals who declare bankruptcy are more likely to have spent money on consumption goods such as automobiles and houses (Zhu, 2011), indicating that they may have withdrawn from a precarious financial situation to continue spending at unsustainable levels.

In addition, feelings of shame may make it less likely that individuals facing financial hardship reach out to other community members who would be able to provide them with the support necessary to ease their difficulties; this may be exacerbated in situations in which economic inequality is higher and social comparisons are intensified (Jachimowicz, Chafik, Munrat, Prabhu, & Weber, 2017; Jachimowicz, Szasi, et al., 2020). We provide evidence in support of this perspective in Appendices F and G, where we present two studies that experimentally manipulated the stigma surrounding financial hardship to determine how financial shame affects people's propensity to withdraw from other people. Findings from these studies suggest that people who are ashamed about their finances are less likely to desire to engage with others; for example, participants randomly assigned to feel stigmatized about their financial difficulties were subsequently less likely to reach out to a financial planner if that involved talking to a friend about their financial difficulties. These studies suggest that financial shame can hurt well-being beyond financial hardship by creating social isolation.

### 9.1. Limitations and future directions

We note several shortcomings of our research. First, most of the evidence we report linking shame with financial hardship is correlational, with some studies making use of secondary data sources. Although we demonstrate a positive relationship between shame and financial hardship consistently across a number of archival data sources, no individual study is immune to the typical limitations of such data, including the fact that financial hardship and shame are not always measured consistently.

Second, our reliance on observational data raises concerns about potential alternative explanations, including that the effect of shame on financial hardship may be due to a lack of self-efficacy or loss of control (Caplan & Schooler, 2007). To rule out this alternative account, we report studies in the [Supplementary Information](#) (Parts G and H) in which we test whether the relationship between shame and financial hardship holds above and beyond perceived control. Specifically, we control for perceived constraints (i.e., the extent to which one believes there are obstacles interfering with goal attainment) and personal

mastery (i.e., one's sense of efficacy in carrying out goals; Lachman & Weaver, 1998). These studies suggest that the relationship between shame and financial hardship cannot be fully explained by these individual differences.

Third, although we demonstrate a causal link between financial shame and financial withdrawal in an experimental study (Study 3), it is likely that the relationship between shame and financial hardship unfolds over a longer timeframe, which necessitates the use of surveys to measure changes longitudinally. However, it is difficult to ensure the ecological validity of the measures absent a highly consequential choice such as through a large-scale field experiment. Given that manipulating shame in the field may not be ethically admissible, we hope that future research can rely on a form of natural experiment in which there is exogenous variation in shame. While our use of panel datasets allowed us to rule out unobserved heterogeneity, and additional analysis of identical twins allowed us to rule out genetic and early-environment confounds, exogenous variation in the field (e.g., with a natural experiment) could provide a stronger test of the causal path while ensuring a high degree of ecological validity.

Financial hardship is typically considered a relatively enduring characteristic of individuals over time. This comparatively low degree of variation makes it challenging to explore the long-term dynamics of shame and financial hardship. Indeed, in Study 4, the correlations of financial hardship between waves were moderate to high, ranging between 0.58 and 0.62. An alternative approach would be to investigate the day-to-day dynamics of financial hardship and shame, such as by using diary studies where variation in financial worries at a more granular level (e.g., money running out before payday, unexpected expenditure) can be more directly linked to shameful feelings and subsequent financial decisions.

Future research could also explore the role of other emotions on financial withdrawal and hardship beyond shame and guilt. For example, it is possible that experiencing positive emotions could have a buffering effect, mitigating the role of shame in financial decisions. This is supported by research on the dynamic affect model (Zautra, Smith, Affleck, & Tennen, 2001), which argues that when stressful events are coupled with experiencing positive emotions, this attenuates negative emotional responses (Ong, Bergeman, Bisconti, & Wallace, 2006; Zautra, Affleck, Tennen, Reich, & Davis, 2005). This idea of the benefits of positive emotions in the face of a stressor (such as financial hardship) is also in line with broaden-and-build theory (Fredrickson, 2001), which posits that these emotions facilitate a faster recovery once negative responses have occurred.

One area of further inquiry is to investigate how to increase individuals' engagement in situations that carry social stigma and induce shame, such as when experiencing financial difficulties. Interventions could be developed aimed at encouraging individuals—especially those predisposed to feelings of shame—to reappraise their financial difficulties from shame to guilt, i.e., shifting the focus away from *who* they are towards *what* they did. Another strategy could be to communicate that these difficulties are not viewed as shameful by important others, such as family members or colleagues. That is, in situations requiring engagement, interventions that de-shame the situation could catalyze individuals to take positive steps towards improving their circumstances (González-Gómez & Richter, 2014; Ray, Wilhelm, & Gross, 2008; Tracy & Robins, 2006; Wolf, Lee, Sah, & Brooks, 2016). In particular, the disengagement that shame promotes means individuals may frequently fail to communicate their financial difficulties to others, even though honest and direct communication may be crucial to overcoming serious financial challenges. Therefore, interventions that reduce the shame associated with finances may represent a fruitful pathway for financial institutions and governments to improve consumer well-being.

An important distinction to note in our evidence is that some of our studies measure financial shame (Studies 1–3, Study 6), whereas other studies—those that rely on archival data (Studies 4–5)—measure general shame. Study 1 demonstrates that both are related to financial

withdrawal—that is, while general shame appears to be related to withdrawal from a broad range of information (including information relevant to financial decision-making), financial shame appears to be more strongly correlated with the specific urge to withdraw from financial information. Future research could test whether this distinction helps to predict the specific actions individuals take to reduce these negative feelings. That is, prior research suggests that shame experienced in response to specific decision-making contexts can prompt engagement in related actions that seek to reduce feelings of shame and increase their social desirability in the eyes of others (de Hooge et al., 2008). For example, while financial shame may prompt withdrawal from financial information, it could also prompt engagement in more socially desirable behaviors—including pro-social or pro-environmental—a possibility that future research should explore.

Finally, we also encourage future research to explore additional boundary conditions of our effects. People may vary in their psychological and behavioral responses to identical financial circumstances, and thus identifying moderators of the effect of shame on withdrawal and financial hardship can help illuminate the considerable variation that exists in the relationship between psychological traits and financial behavior (Gerhard, Gladstone, & Hoffmann, 2018). While many potential moderators could act to strengthen or weaken the effect, we document one of these in Study 6, in which we show that the relationship between financial shame and withdrawal is mitigated by a manipulation that affirmed one's kindness. This is consistent with past evidence from other domains, such as in healthcare, that self-affirmed people experience beneficial outcomes through more active engagement with information (Klein & Harris, 2009; van Koningsbruggen, Stroebe, Papiés, & Aarts, 2011). An additional moderator that future research could explore is the degree to which individuals are naturally predisposed to seek or avoid information. As illustrated in a recently published scale (Ho, Hagmann, & Loewenstein, 2020), some people seek out information across domains to a greater degree than others. We encourage future research to explore these and other potential boundary conditions.

## 9.2. Conclusion

While past research has demonstrated that financial hardship induces shame, the studies presented here provide evidence that feelings of shame can fuel counterproductive financial decisions through increased behavioral disengagement. Understanding the mechanisms that relate emotions such as shame to financial hardship might help in formulating effective interventions to reduce financial distress in the population. Scientists and practitioners could devise methods to break this self-perpetuating shame cycle through increasing direct engagement with one's financial situation. By reducing the shame associated with financial hardship, the current research offers the hope of breaking the financial shame spiral, improving people's financial decisions and ultimately their well-being.

## CRedit authorship contribution statement

**Joe J. Gladstone:** Conceptualization, Methodology, Software, Formal analysis, Data curation, Visualization, Project administration. **Jon M. Jachimowicz:** Conceptualization, Methodology, Software, Formal analysis, Data curation, Project administration. **Adam Eric Greenberg:** Conceptualization, Methodology, Software, Formal analysis, Data curation, Project administration. **Adam D. Galinsky:** Supervision.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Appendix A. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.obhdp.2021.06.002>.

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