

Let your past define your future? How recalling successful financial experiences can increase beliefs of self-efficacy in financial planning

Arvid O. I. Hoffmann¹ | Daria Plotkina²

¹University of Adelaide Business School,
Adelaide, South Australia, Australia

²EM Strasbourg Business School,
University of Strasbourg, Strasbourg,
France

Correspondence

Arvid O. I. Hoffmann, University of
Adelaide Business School, Adelaide,
South Australia, Australia.
Email: arvid.hoffmann@adelaide.edu.au

Funding information

EM Strasbourg Business School;
University of Adelaide Business School

Abstract

Financial self-efficacy, or the perceived ability to succeed in managing one's personal financial affairs, is fundamental to effective consumer financial decision making. However, little is known about how to improve consumers' financial self-efficacy and which consumers are more or less responsive to potential policy interventions. We address these questions through an experimental study among US consumers. We find that asking consumers to recall and analyze successful (unsuccessful) experiences regarding the management of their personal finances is associated with higher (lower) financial self-efficacy. We provide insight into the underlying process of this effect through moderation and mediation analyses. In particular, we show that the effect of a recall and analyze intervention utilizing a successful previous experience is more pronounced for consumers with a more optimistic personality. Finally, consumers who develop greater financial self-efficacy as a result of our intervention display more self-control, leading to a higher financial planning propensity and actual planning.

KEYWORDS

enactive mastery, financial self-efficacy, propensity to plan, self-control

Arvid O. I. Hoffmann and Daria Plotkina contributed equally to this article and are listed in alphabetical order.



1 | INTRODUCTION

Today's consumers are increasingly expected to manage and prepare for a financially secure future themselves (Lynch *et al.*, 2010). Unfortunately, many people struggle with making important financial decisions owing to limited financial literacy and increasing complexity in the financial environment (Lusardi and Mitchell, 2011). Indeed, generally low levels of financial self-efficacy suggest that many consumers lack the perceived ability to successfully manage their personal financial affairs (Montford and Goldsmith, 2016; Peeters *et al.*, 2018). Echoing this sentiment, most Americans do not expect to be financially secure when they retire (Forbes, 2019).

A growing literature suggests that consumers' beliefs of financial self-efficacy can be even more crucial than their objective financial knowledge in improving financial behavior (Allgood and Walstad, 2016; Anderson *et al.*, 2017; Lind *et al.*, 2020). Indeed, consumers with higher financial self-efficacy are more disciplined and long-term-oriented (Chen *et al.*, 2001), more responsible in their financial behavior (Hadar *et al.*, 2013), and tend to experience more positive financial outcomes (Hoffmann and McNair, 2019). While overconfidence in one's ability to manage one's personal finances is risky, as it can result in experiencing more negative financial outcomes (Balasubramnian and Sargent, 2020; Kim *et al.*, 2020), prior work argues that the perceived ability to manage one's finances has to be sufficiently developed for people to get hold of their finances (Barbić *et al.*, 2019), and explicitly calls for policy makers to act on consumers' financial self-efficacy in order to stimulate sound financial behavior (Wiener and Doescher, 2008).

Against this backdrop, our study addresses the following research question: what can be done to improve consumers' financial self-efficacy and thereby enhance their propensity to plan for a financially secure future? Although prior research suggests that *general* self-efficacy is crucial to motivating individuals to set and attain goals (Gist and Mitchell, 1992), and proposes ways in which this can be developed (Bandura, 1977, 1986), to date no study has examined how consumers' *financial* self-efficacy can be improved. Gist and Mitchell (1992), however, propose a helpful model of the determinants of general self-efficacy, which stipulates that enactive (i.e., lived) experience, through the attributional analysis of this experience, leads to the adjustment of self-efficacy and consequent intentions and behavior. Yet, to date much remains to be learned about: (a) *whether* recalling and analyzing previous financial experiences can improve consumers' financial self-efficacy; (b) *which* consumers are more responsive to such interventions; (c) *how* increased financial self-efficacy improves consumers' propensity for financial planning; and (d) *if* an increased financial planning propensity translates into actual planning behavior in the period following the intervention.

To learn more on these matters, we draw on a diverse sample of 550 US consumers for performing an experimental study. We find that asking these consumers to recall and analyze successful (unsuccessful) experiences regarding managing their personal finances is associated with higher (lower) financial self-efficacy. We also document that the effect of such a recall and analyze intervention utilizing a successful previous experience on consumers' financial self-efficacy is more pronounced for those with a more optimistic personality. We also show that consumers who develop greater financial self-efficacy as a result of the recall and analyze intervention display more self-control, leading to a higher financial planning propensity. Finally, when recontacting the same consumers 3 months after the initial intervention, we find that those who stated a higher financial planning propensity also show more active financial planning behavior.



Our study makes several contributions to the existing literature. From a theoretical perspective, we adapt the general self-efficacy–performance model of Gist and Mitchell (1992) and use it to empirically investigate the antecedents and consequences of financial self-efficacy. That is, we mobilize enactive experience and the attributional analysis of this experience as the main levers to develop consumers' financial self-efficacy and investigate the consequent self-control and financial planning goals and performance. Indeed, the belief in one's ability to successfully manage financial affairs and plan for a financially secure future is crucial for consumers to be more proactive in financial management (Hoffmann and McNair, 2019). Although prior work identified the importance of financial self-efficacy, we are the first to test the effectiveness of an intervention aimed at *improving* financial self-efficacy. In doing so, we respond to calls for more research identifying the determinants of financial self-efficacy (Farrell *et al.*, 2016). Additionally, by examining the moderating role of consumer optimism and the mediating role of self-control, we provide valuable insights regarding the boundary conditions as well as the underlying process of our results. In doing so, we also heed the call of previous research which has highlighted the necessity of accounting for such psychological characteristics when trying to explain consumers' financial behavior (see e.g., Fernandes *et al.*, 2014). Finally, we address the actual behavioral change of consumers by recontacting them after 3 months to complete a follow-up questionnaire.

From a practical perspective, we provide guidelines on improving consumers' financial self-efficacy to assist practitioners in empowering consumers and stimulating their engagement in financial planning (Consumer Financial Protection Bureau, 2013). Doing so is important given the increasing self-responsibility of consumers for making consequential financial decisions such as managing their retirement savings (Hentzen *et al.*, 2021), combined with a growing financial fragility due to fraying social safety nets (McCloud and Dwyer, 2011). A key implication of our results is that it seems more effective to focus on successful rather than unsuccessful experiences to induce more active financial planning intentions and behavior. Indeed, while some studies suggest that negative appeals can be effective in such consumer behavior contexts as personal health (Kellaris *et al.*, 1995, e.g., Block and Keller, 1995), others stipulate that the effect of fear appeals is limited and they only work when individuals have high self-efficacy perceptions (Witte, 1996).

The remainder of this study is organized as follows. We start by discussing the relevant literature and developing our hypotheses. Next, we present information on our data and method. Subsequently, we provide an overview of our results. We finish by a discussion and conclusion, including an overview of our theoretical contributions, practical implications, and limitations.

2 | THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

We conceptualize the antecedents and consequences of financial self-efficacy using Gist and Mitchell's (1992) model, which argues that the analysis of previous performance (i.e., enactive mastery) has a direct effect on individuals' evaluation of their ability to accomplish similar tasks in the future (i.e., self-efficacy). This belief of self-efficacy, in turn, affects an individual's intermediate psychological outcomes, subsequent behavioral intentions, and actual behavior (Figure 1). In the context of this study, the analysis of one's previous performance refers to the process of individuals thinking about what contributed to their previous successful or unsuccessful financial experience and what it taught them about the management of their personal finances.

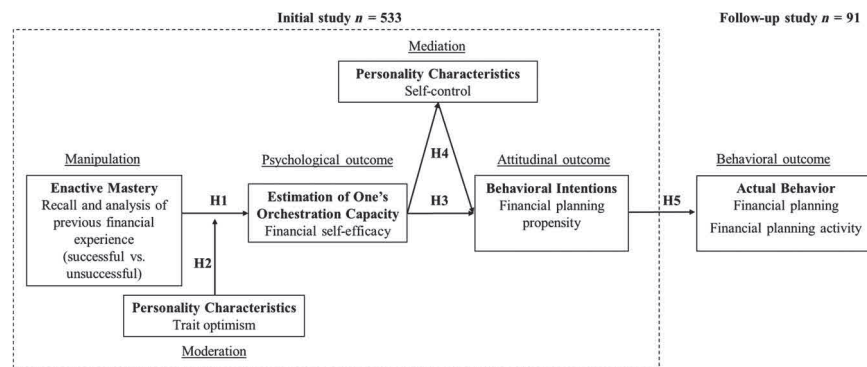


FIGURE 1 Conceptual model

In this study, we examine self-control as an intermediate psychological outcome of financial self-efficacy, because self-efficacy relates to the exercise of control (Bandura, 1997), which again is critical for consumers' financial decision making and well-being (Perry and Morris, 2005; Strömbäck *et al.*, 2017). To better understand which individuals are more receptive to an intervention of recalling and analyzing previous personal financial experiences, we examine the moderating role of trait optimism. Prior work shows that optimism is an important adjacent condition to self-efficacy that helps explain consumer behavior (Phan, 2016). In terms of behavioral intentions, we examine how changes in financial self-efficacy affect individuals' financial planning propensity given that this propensity is critical in understanding intertemporal choice (Lynch *et al.*, 2010). To explicate the underlying process of this effect, we examine the mediating role of self-control. Finally, we study if the behavioral intentions we observe also lead to actual financial planning behavior. In the following, we discuss the relevant literature regarding each of these variables and the relationships we expect.

2.1 | The impact of recalling and analyzing previous experiences on financial self-efficacy

Enactive mastery, or drawing from one's personal experience and achievements, is an important source of people's self-efficacy (Bandura, 1977, 1986). In particular, lived experiences help people judge whether they can successfully engage in certain behaviors given contextual and personal factors (Bandura, 1997). Indeed, Gist and Mitchell (1992) stipulate that individuals involve in attributional analysis of lived experiences to shape their self-efficacy beliefs. Such analysis relates to a rationalization of the lived experience—what has happened and why. Studies in education report a positive effect of reporting and formalizing previous achievements on the formation of individuals' self-efficacy (Pajares *et al.*, 2007; Liem *et al.*, 2008; Phan, 2014; Phan and Ngu, 2016). In fact, it has been found that the more people recall and analyze their lived experience, the greater its impact on their self-efficacy (Luthans and Peterson, 2002; Grant and Ashford, 2008). In this regard, people's attribution or explanation of why a particular experience occurred is critically important (Gist and Mitchell, 1992).

We expect that above-mentioned mechanism of developing self-efficacy generalizes to the personal financial management context, as critical analysis on the execution of a previous task



is a key feature of any learning loop (Kolb, 2014). Consistent with this expectation, prior studies suggest that in personal financial management, past success is likely to be a major driver of financial self-efficacy (Haman and Laker, 2018). Indeed, successful hands-on financial experiences may stimulate belief in one's financial self-efficacy and improve future financial well-being (Drever *et al.*, 2015) and financial behavior (Loke *et al.*, 2015). However, unsuccessful experiences are expected to do exactly the opposite (Smith *et al.*, 2006). Hence, we expect:

H1. *Asking individuals to recall and analyze a successful (unsuccessful) previous personal financial experience is associated with an increased (decreased) level of financial self-efficacy.*

2.2 | The moderating role of trait optimism

Optimism is the generalized expectancy of experiencing good outcomes (Scheier and Carver, 1985). It is an important driver of economic decisions (Puri and Robinson, 2007) and is related to self-efficacy (Phan, 2016). While the two concepts are similar, they are not the same, and the relationship among them needs clarification (Rand, 2018). In particular, whereas self-efficacy is *behavior-oriented* (Bandura, 1977), optimism is *goal-oriented* (Snyder, 2002). Specifically, optimism is a generalized expectation of favorable outcomes (Scheier *et al.*, 2001) that is not related to an individual's actions (Snyder, 2002) which predefines one's interpretation of the cause of success and failure despite the actual experience (Seligman, 1991). Because of these characteristics, optimism has an important impact on consequent behavior (Scheier and Carver, 1985).

Indeed, previous research has shown that more optimistic individuals tend to interpret the cause of an unsuccessful experience as temporary and within their control—in contrast to less optimistic individuals, who tend to do the opposite (Abramson *et al.*, 1978; Dietz *et al.*, 2003). Thus, more optimistic people perceive success as something natural, while they see failure as a temporary obstacle that can be taken as a lesson to draw conclusions from and rectify (Diener and Dweck, 1978). Additionally, more optimistic people are more likely to engage in an attributional analysis of every experience and identify the cause of and a possible solution to a failure to increase the odds of future success (Scheier *et al.*, 1986). The fact that more optimistic people are more likely to engage in attributional analysis suggests that enactive mastery would be more likely to produce self-efficacy for more optimistic individuals as per Gist and Mitchell's (1992) model. Indeed, even if an experience is not successful, people with high levels of optimism generally persist longer than those with low levels of optimism (Scheier and Carver, 1988). Trait optimism is thus expected to have an important effect on the outcome of our recall and analyze intervention (Heckman *et al.*, 2014; Topa and Pra, 2018).

In particular, building on the stimulus–organism–response model (Mehrabian and Russell, 1974) and research in human communication (Buller *et al.*, 1998), we expect that the extent to which an environmental stimulus (i.e., our recall and analyze intervention) induces a response (i.e., a change in self-efficacy) depends on the extent to which the organism (i.e., the consumer) is initially inclined to be receptive to either a positive or negative stimulus. If consumers are generally more optimistic, prior successes are more likely to reinforce their self-belief. Indeed, an optimistic mindset can act as a “buffer,” and the more optimistic people are, the more they believe they can achieve their goals and accomplish the intended behavior (Grote *et al.*, 2007). Thus, we expect:

H2. *Consumer trait optimism moderates the effect of the recall and analyze intervention such that:*

- (a) *for consumers recalling and analyzing an unsuccessful previous experience, higher optimism may mitigate the negative effect of the intervention on financial self-efficacy; whereas,*
- (b) *for consumers recalling and analyzing a successful previous experience, higher optimism may facilitate the positive effect of the intervention on financial self-efficacy.*

2.3 | The relationship between financial self-efficacy and financial planning propensity

As an important motivational construct, self-efficacy influences individuals' aspirations, goals, and intentions (Gist and Mitchell, 1992). The belief in one's ability to achieve identified goals leads people to plan for and engage in intended behaviors (Webb and Sheeran, 2008). Indeed, self-efficacy has been found to predict financial planning intentions (e.g., obtaining the help of a professional (Letkiewicz *et al.*, 2014) and choosing a retirement savings strategy (Dietz *et al.*, 2003)). Importantly, the propensity to plan is pertinent to intertemporal choice (Lynch *et al.*, 2010), and the formation of a financial plan is positively related to wealth accumulation (Ameriks *et al.*, 2003). Generally, the stronger consumers' beliefs of financial self-efficacy, the more responsible they will be in their financial behavior (Hadar *et al.*, 2013). General self-efficacy influences the extent to which individuals engage in planning for the future (Azizli *et al.*, 2015). Similarly, financial self-efficacy disciplines and orients the consumer toward long-term goals (Chen *et al.*, 2001). Therefore, we expect:

H3. *Financial self-efficacy is positively associated with individuals' financial planning propensity.*

2.4 | The mediating role of self-control

To act upon their self-efficacy beliefs, people should have a general capacity to turn intentions into actions (Tangney *et al.*, 2004). In this regard, self-control is a good indicator of whether an individual will invest the intellectual and emotional resources required to successfully reach a goal. Self-efficacy and self-control do not necessarily correspond and should be assessed sequentially (Ajzen, 2002; Gist and Mitchell, 1992). That is, whereas self-efficacy can be thought of as the extent to which one *believes* a certain behavior is easy to perform, self-control instead refers to the extent to which one can override or change one's inner responses in order to *actually carry out* the behavior.

As a construct, self-control is related to—but distinct from—the construct of controllability which according to Gist and Mitchell (1992) also plays an important role in developing beliefs of self-efficacy. That is, while controllability relates to the extent to which a given internal or external determinant can be controlled by the individual, self-control relates to the ability to manage one's impulses, emotions, and behaviors to achieve long-term goals. Therefore, self-control can be defined as the controllability of internal elements of individuals (i.e., individual intentions and actions). Previous studies indicate that self-control allows individuals to create a match between their intended or desired self and their actual behavior (e.g., Tangney *et al.*, 2004). Indeed, self-control is positively correlated with one's financial planning propensity



(Lynch *et al.*, 2010) and we thus expect that self-control mediates the effect of financial self-efficacy on this financial planning tendency:

H4. *Self-control positively mediates the effect of financial self-efficacy on individuals' financial planning propensity.*

2.5 | The relationship between behavioral intentions and actual behavior

When considering the effectiveness of an intervention aimed to improve individuals' financial planning behavior, it is important to assess whether their *actual behavior* changes in response to the intervention (Fernandes *et al.*, 2014; Peeters *et al.*, 2018). That is, does the recall and analysis of a successful financial experience lead people to perform better in real financial decision making tasks? In particular, we are interested in examining whether the stated behavioral intentions to have better thought-through finances and take a more structured approach to financial planning also results in more actual planning activities (Croy *et al.*, 2010). Previous research generally reports a strong positive correlation between people's intentions and actual behavior (Ajzen and Fishbein, 1980; Sheppard *et al.*, 1988) and shows that thinking about financial planning (Gollwitzer, 1999) is sufficient to incentivize actual behavioral change (Ameriks *et al.*, 2003). Therefore, we expect that financial planning propensity is positively related to individuals' actual planning behavior:

H5. *Financial planning propensity is positively associated with actual financial planning behavior.*

3 | DATA AND METHODS

3.1 | Data collection

To test our hypotheses, we recruited $N = 550$ participants through Qualtrics, which sources online panels of American consumers based on the project requirements of researchers and has quality check procedures in place to ensure a consistent panel standard. Qualtrics uses quotas to try and achieve a sample which reflects the overall US population in terms of its socio-demographics. We excluded $n = 17$ participants who gave incomplete, invalid, or implausible responses (i.e., these participants either exhibited straight-lining behavior in terms of answering or replied to open-ended questions in an incomprehensible manner). The remaining $n = 533$ participants were randomly assigned to one of the two experimental conditions (i.e., recall and analysis of previous financial experience: successful vs. unsuccessful) or a control condition. We find no significant differences between conditions in terms of participants' gender, age, education, ethnicity, or state of residence (all F -tests, $p > .50$), indicating that the randomization was effective. Finally, the experimental cell sizes were similar, with $n = 173$ (170) participants in the successful (unsuccessful) recall and analyze condition and $n = 190$ in the control group, respectively. We recontacted all participants 3 months after the initial intervention to measure (self-reported) actual behavior. Among the $n = 533$ participants, $n = 91$ participants both completed the follow-up questionnaire and remembered the initial recall and analyze intervention.¹

Although the $n = 91$ follow-up participants do not differ significantly from the overall group of $n = 533$ participants in terms of aforementioned socio-demographic characteristics (all F -tests, $p > .50$), and we therefore do not consider sample selection concerns to be a serious concern, the limited sample size means that the follow-up results should be considered to be of an exploratory nature, and could furthermore be interpreted as a lower bound of the effect of individuals' financial planning propensity on their actual financial planning activity.

3.2 | Sample description

Of the $n = 533$ participants, $n = 242$ were male, and the average age was 44.4 years. Most of the participants held a university degree (29.3% have a Bachelor's degree, 10.5% a Master's degree, 5.1% a PhD degree, and 4.3% a professional degree). Furthermore, 54.4% of the participants were employed, 8.3% self-employed, 4.7% unemployed, and 6% homemakers. Most of the participants were married (52.3%), 26.3% were single, and 7.9% were divorced. Most of the participants were Caucasian (73.5%), followed by Black (10.1%), Asian (6.4%), and Hispanic (6.8%).

3.3 | Experimental design

Following prior work (Spencer *et al.*, 2005), we first measured the independent variables (i.e., the controls and moderators), and after the experimental manipulation measured variables that account for the process through which the manipulation affects the dependent variable (i.e., the mediators). In particular, after answering questions on their socio-demographics and optimism, participants read an introductory text and were asked to describe their most recent or most prominent successful (unsuccessful) financial experience ("recall"). After describing their financial experience, participants were asked to think about and report what contributed to that particular successful (unsuccessful) experience and what this experience taught them about the management of their personal finances ("analyze"). To ensure participants engaged with the experimental manipulation in sufficient depth, they had to provide a response to each of these open-ended questions of at least 140 characters in length before they could continue with further questions. We verified the quality of participants' responses to the open-ended questions (i.e., checking the answers' relevance to the experimental condition) by reading each response in full. Following the experimental manipulation, participants answered questions on their financial self-efficacy, self-control, and financial planning propensity. We also employed a hanging control group in which participants were not asked to recall and analyze any previous experience, but which continued directly with further questions.

As analysis is the cornerstone of experiential learning (Andresen *et al.*, 2000), recalling and analyzing one's previous experience is expected to affect self-efficacy beliefs (Bandura, 1997). The recall and analyze manipulation was adapted from widely used emotion-induction methods (Van Boven *et al.*, 2010) which have been successfully applied in the consumer financial decision making domain to induce feelings of financial success or failure (Netemeyer *et al.*, 2018). In particular, the manipulation was designed to put participants in either a positive or negative mindset as far as their finances are concerned, thus setting a reference point. According to prospect theory (Kahneman and Tversky, 1979), people make decisions according to a reference point, such as their previous experience. Focusing on a successful or unsuccessful experience



activates the respective reference point and affects the evaluation of one's ability and subsequent behavioral intentions.

Among participants' most frequently cited successful experiences were their ability to save money and stay within budget, investing in stocks or in a business with a good return on investment, and being able to save for a special or unexpected purchase. Among participants' most frequently cited unsuccessful experiences were the inability to cover or save for unexpected expenses, investing in stocks or a business that crashed, and an unexpected loss of income (i.e., being fired).

3.4 | Manipulation check

To avoid any demand effects, we performed a manipulation check with a different sample in a separate pre-test (Cornelissen *et al.*, 2008). We recruited 78 participants from Amazon MTurk, which provides data that are at least as reliable as those from traditional sample pools (Goodman and Paolacci, 2017), and ensures isolation from the main study's Qualtrics sample. The socio-demographic characteristics of the manipulation check sample are similar to those of the participants of the main study. Participants were confronted with one of the two experimental stimuli and asked to evaluate its nature through open-ended questions and semantic differential scales. Participants indicated whether the valence of the experimental stimulus was positive or negative, and whether it referred to previous experience, actual behavior, or future goals. Results show that the experimental manipulation worked as intended. That is, the valence of the two conditions was recognized as intended according to a semantic differential scale ranging from 1 = very negative to 7 = very positive ($M_{\text{unsuccessful}} = 4.18$, $SD = 1.66$; $M_{\text{successful}} = 5.75$, $SD = 0.89$) ($p < .001$, $F[1, 77] = 26.77$).² Furthermore, 93% of participants correctly recognized the experimental manipulation's reference to a past experience, as opposed to actual behavior or financial goals.

3.5 | Measurement scales

We used established scales with demonstrated validity and reliability, which were modified only in terms of wording to fit the study context or changed to a seven-point Likert scale for consistency and a uniform appearance. Scale items, factor loadings, and construct validity appear in Table 1.

To measure financial self-efficacy, we used six items by Lown (2011). We chose this measure due to its domain-specificity and incorporation of both short-term and long-term objectives (e.g., items such as "I lack confidence in my ability to manage my finances"; "I worry about running out of money in retirement."). For our study, the perceived benefit of the specific financial orientation of this scale outweighed the drawback of potential polarity effects noted by Warmath and Zimmerman (2019). To measure self-control, we used five items by Tangney *et al.* (2004). To measure optimism, we used four items by Scheier and Carver (1985). To measure financial planning propensity, we used six items of the propensity to plan for money scale by Lynch *et al.* (2010). To measure the actual financial planning activity in the 3 months following the initial intervention, we used the past tense form of the scale by Lynch *et al.* (2010) (e.g., "I set...", "I decided...") as well as the 10-item scale adapted from Stawski *et al.* (2007), which includes a wide range of specific and practical financial planning activities (e.g., assessing one's net worth; reading books on financial planning).

All measurement scales are reliable instruments, given that Cronbach's alpha (Nunnally, 1978) and composite reliability (Chin, 1998) both exceed 0.70. We also establish convergent validity, as all items load significantly only on their underlying constructs and the

TABLE 1 Scale items, factor loadings, and construct validity

Construct	Item wording	Mean	SD	Item loading	α	AVE	CR
Financial self-efficacy (Lown, 2011)	1. It is hard to stick to my spending plan when unexpected expenses arise. (RC)	3.30	1.96	.783	.857	.586	.894
	2. It is challenging to make progress toward my financial goals. (RC)	3.48	1.92	.790			
	3. When unexpected expenses occur, I usually have to use credit. (RC)	4.35	2.02	.708			
	4. When faced with a financial challenge, I have a hard time figuring out a solution. (RC)	4.56	1.93	.833			
	5. I lack confidence in my ability to manage my finances. (RC)	4.91	2.00	.705			
	6. I worry about running out of money in retirement. (RC)	3.71	2.12	.766			
Self-control (Tangney <i>et al.</i> , 2004)	1. I have a hard time breaking bad habits. (RC)	3.98	1.85	.765	.789	.554	.855
	2. I get distracted easily. (RC)	4.39	1.92	.814			
	3. I'm good at resisting temptation.	4.58	1.70	.407			
	4. I do things that feel good in the moment but regret later on. (RC)	4.37	1.77	.829			
	5. I often act without thinking through all the alternatives. (RC)	4.71	1.80	.818			
Optimism (Scheier and Carver, 1985)	1. In uncertain times, I usually expect the best.	4.69	1.69	.825	.856	.702	.904
	2. I always look on the bright side of things.	5.06	1.53	.879			
	3. I'm always optimistic about my future.	5.01	1.62	.868			
	4. I'm a believer in the idea that "every cloud has a silver lining."	5.00	1.63	.777			
Financial planning propensity ^a (Lynch <i>et al.</i> , 2010)	In the following 3 months:				.930	.740	.944
	1. I will set financial goals for what I want to achieve with my money.	5.17	1.67	.854			
	2. I will decide beforehand how my money will be used.	5.15	1.56	.843			
	3. I will actively consider the steps I need to take to stick to a budget.	5.13	1.69	.908			
	4. I will consult my budget to see how much money I have left.	5.22	1.65	.868			
	5. I will look to my budget in order to get a better view as to my spending in the future.	5.29	1.62	.866			



TABLE 1 (Continued)

Construct	Item wording	Mean	SD	Item loading	α	AVE	CR
	6. I will feel better to have my finances planned out.	5.57	1.42	.822			
Financial planning activity (Stawski <i>et al.</i> , 2007)	In the last 3 months I:				.927	.636	.945
	1. Watched/listened to programs on financial planning.	2.74	2.00	.800			
	2. Read books/articles/brochures on investing or financial planning.	2.68	1.87	.877			
	3. Visited financial planning sites on the worldwide web.	2.69	1.94	.852			
	4. Conducted a thorough assessment of my net worth.	3.59	2.16	.692			
	5. Identified specific spending plans for the future.	2.92	1.96	.886			
	6. Made contributions to superannuation/investment fund(s).	2.51	1.96	.720			
	7. Bought stocks, funds, or bonds for long-term investment.	3.07	2.15	.754			
	8. Discussed financial planning goals with a professional(s) in the field.	2.57	1.89	.819			
	9. Discussed financial plans with an employer's benefits specialist.	2.97	2.16	.752			
	10. Discussed financial plans with a knowledgeable friend or acquaintance.	2.63	1.94	.799			
Marker variable (Simmering <i>et al.</i> , 2015)	1. I like the color blue.	5.81	1.40				

Notes: α , Cronbach's alpha; AVE, average variance extracted; CR, composite reliability; RC, reverse coded.

^aThe same questions were used in the past tense in the follow-up questionnaire to assess actual planning. All items were evaluated on the scale from 1 = "Completely Disagree" to 7 = "Completely Agree."

average variance extracted (AVE) exceeds 0.50 (Fornell and Larcker, 1981). Finally, we establish discriminant validity, as we find that the intercorrelations between the latent factors do not include unity (Anderson and Gerbing, 1988), while each construct's AVE is greater than the squared correlations between any set of two constructs (Fornell and Larcker, 1981).

3.6 | Common method variance

To overcome and minimize the potential of common method variance (CMV) bias affecting our results, we apply both methodological and statistical solutions (Craighead *et al.*, 2011). First, we include reverse-coded items to minimize acquiescence effects (Lindell and Whitney, 2001). Second, we perform a Harman's single-factor test using exploratory factor analysis and do not find that the

variables load on a single factor (Podsakoff *et al.*, 2003). Third, we include in our measurement a theoretically unrelated question on attitude to the color blue (Simmering *et al.*, 2015) and conduct a Lindell and Whitney (2001) marker variable test. The marker variable is not correlated to any of the independent variables, while it is only slightly correlated with the dependent variable ($r = -.17$, $p < .050$). However, the correlation is considerably below the 0.40 limit (Lee *et al.*, 2017). Fourth, the highest correlation among the principal constructs is 0.52 and thus substantially below the 0.80 limit (Bagozzi *et al.*, 1991). In conclusion, all tests suggest CMV is not a threat to our study.

4 | RESULTS

4.1 | Main effect of recalling and analyzing previous experiences

To test H1, we perform a univariate analysis of variance (ANOVA) to compare the condition in which participants had to recall and analyze a successful previous experience in managing their personal finances with the condition in which they had to recall and analyze an unsuccessful previous experience. In support of H1, the recall and analysis of a successful experience is associated with a higher financial self-efficacy than the recall and analysis of an unsuccessful experience ($M_{\text{successful}} = 4.30$, $SD = 1.52$; $M_{\text{unsuccessful}} = 3.97$, $SD = 1.36$; $F[1, 531] = 2.11$, $p < .050$). As expected, the control condition is associated with lower (higher) financial self-efficacy than the recall and analysis of a successful (unsuccessful) experience condition ($M_{\text{control}} = 4.12$, $SD = 1.56$). However, the difference of the control condition with each of these two experimental conditions is statistically insignificant.

To prevent observing a spurious relationship between the experimental stimuli and participants' financial self-efficacy, we include two proxies of participants' actual success in managing their personal financial affairs as control variables—money management skills (Garðarsdóttir and Dittmar, 2012) and locus of control over one's finances (Perry and Morris, 2005). We also establish that participants' scores on these measures do not differ among the experimental conditions (all F -tests, $p > .50$). Finally, we establish that the recency (i.e., whether the experience occurred within the last 3, 6, 12, or 24 months) and the type of previous financial experience (i.e., whether it concerned decisions regarding saving, investing, acquiring property or other assets, or something else) does not affect the effect of the experimental manipulation.

4.2 | Moderating effect of trait optimism

We perform a formal moderation analysis, using model 1 of the SPSS Process macro (Hayes and Preacher, 2014) employing 5,000 bootstrapped samples (Figure 2). First, we find that trait optimism positively moderates the impact of the recall and analyze intervention. That is, for participants with a more optimistic personality, recalling and analyzing a successful financial experience is associated with a larger improvement in financial self-efficacy than for participants with a less optimistic personality (moderation impact = .642; 95% CI [.033; 1.25]). Subsequently, we divide participants into those with high versus low optimism based on a median split in order to test H2.

We find that for the recall and analysis of a successful experience, higher optimism facilitates the positive effect of the intervention on financial self-efficacy ($M_{\text{low_optimism}} = 4.00$, $SD = 1.32$, $M_{\text{high_optimism}} = 4.60$, $SD = 1.65$, $F[1, 171] = 6.92$, $p < .010$). At the same time, for the recall and analysis of an unsuccessful experience, higher optimism does not mitigate the



negative effect of the intervention on financial self-efficacy ($M_{\text{low_optimism}} = 3.97$, $SD = 1.30$, $M_{\text{high_optimism}} = 3.96$, $SD = 1.44$, $F[1, 168] = .001$, $p > .100$). Therefore our results provide support for H2b, but not for H2a. In fact, low-optimism individuals display a higher financial self-efficacy after the recall and analysis of a successful experience than after no recall and analysis (control condition), while for these individuals the recall and analysis of an unsuccessful experience is not associated with a significant difference in financial self-efficacy compared to no recall and analysis (control condition) ($M_{\text{control}} = 3.61$, $SD = 1.35$; $M_{\text{successful}} = 4.00$, $SD = 1.32$; $M_{\text{unsuccessful}} = 3.97$, $SD = 1.30$, $F[1, 271] = 2.45$, $p < .050$). High-optimism individuals, however, display a higher financial self-efficacy after the recall and analysis of a successful experience than after the recall and analysis of an unsuccessful experience ($M_{\text{control}} = 4.59$, $SD = 1.60$; $M_{\text{successful}} = 4.60$, $SD = 1.65$; $M_{\text{unsuccessful}} = 3.96$, $SD = 1.44$, $F[1, 258] = 10.57$, $p < .050$). Thus, we can conclude that optimism magnifies the effect of a successful experience, while it does not protect from the shock of an unsuccessful experience.

To alleviate any potential bias that could be associated with assessing moderation using the traditional median-split approach, we also perform a Johnson–Neyman (Johnson and Neyman, 1936) spotlight approach, which is more comprehensive when a moderator is continuous (Carden *et al.*, 2017). The spotlight analysis is carried out using the same model 1 of the SPSS Process macro (Hayes and Preacher, 2014) employing 5,000 bootstrapped samples. The results show that there are three distinct levels of optimism: low (at level 3.5/7), medium (at level 5/7), and high (at level 6.5/7). When compared to the control group, there is only a significant difference for the high-optimism respondents. Thus, the recall and analysis of an unsuccessful financial experience (as opposed to none) leads to a significantly lower level of financial self-efficacy (coefficient = $-.541$, $p < .050$, CI 95% [$-.998$; $-.085$]). However, when running the moderation analysis without the control group, the results show that above an optimism level of $M = 4.83$, the difference between the conditions becomes significant and increasing. That is, at level $M = 4.83$ the difference is $.303$ ($p < .050$, CI 95% [$.000$; $.607$]), at level $M = 5.5$ it becomes $.374$ ($p < .010$, CI 95% [$.102$; $.762$]), and at level $M = 6.7$ it is $.664$ ($p < .010$, CI 95% [$.163$; 1.165]). These results are in line with our previous findings, adding robustness. The scatter plots for the Johnson–Newman spotlight approach are provided in Appendix (Figures A1 and A2).

4.3 | Mediating effect of self-control

Linear regressions show a direct positive effect of self-control on participants' financial planning propensity (coefficient = $.205$, $p < .010$). However, financial self-efficacy does not have a direct

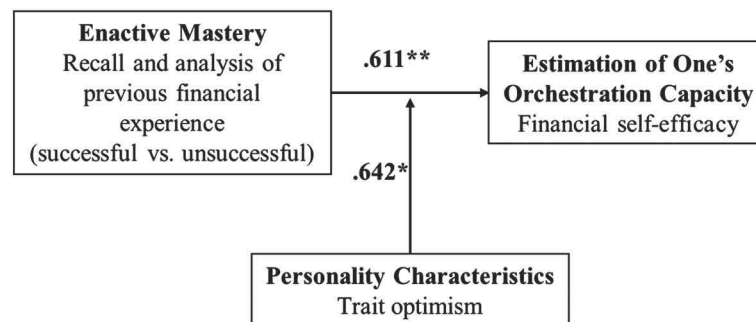


FIGURE 2 Moderating effect of trait optimism on financial self-efficacy.

* $p < .10$; ** $p < .01$

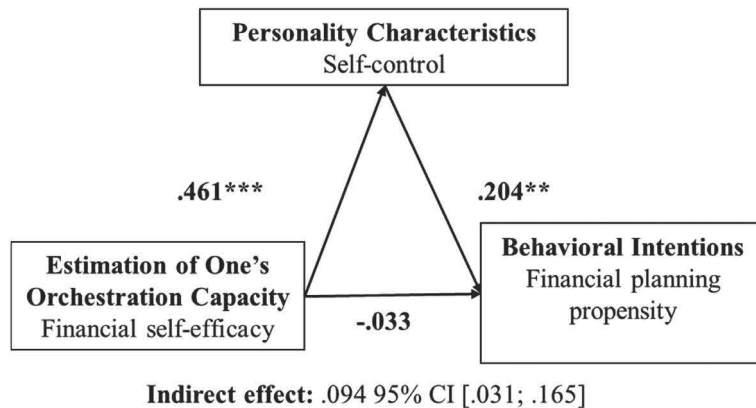


FIGURE 3 Mediating effect of self-control on financial planning propensity. ** $p < .01$; *** $p < .001$. CI, confidence interval

effect on financial planning propensity (coefficient = .051, $p > .100$). Hence, we examine whether financial self-efficacy has an indirect effect on financial planning by performing a formal mediation analysis using model 4 of the SPSS Process macro (Hayes and Preacher, 2014) with 5,000 bootstrapped samples.³ We find that self-control fully mediates the effect of financial self-efficacy on financial planning propensity (Figure 3). We thus find support for H4, but not for H3.

4.4 | Effect of behavioral intentions on actual behavior

When evaluating participants' actual financial planning behavior 3 months after our initial intervention, we find that financial planning propensity is directly and positively related to actual financial planning as measured by the backward-looking, past-tense version of Lynch *et al.*'s (2010) financial planning scale (coefficient = .781, $p < .001$) as well as overall financial planning activity as measured by the average of the items from Stawski *et al.*'s (2007) financial planning activity scale (coefficient = .434, $p < .001$). In particular, individuals' financial planning propensity is directly related to the following specific behaviors of Stawski *et al.*'s (2007) financial planning activity scale 3 months later: reading books and/or articles on financial planning (coefficient = .486, $p < .001$); visiting financial planning websites (coefficient = .406, $p < .001$); assessing one's net worth (coefficient = .522, $p < .001$); calculating cost of living during retirement (coefficient = .497, $p < .001$); making contributions to a superannuation fund (coefficient = .399, $p < .001$); buying stocks, fund, or bonds for long-term investment (coefficient = .418, $p < .010$); and discussing with a financial planning professional (coefficient = .338, $p < .050$).

4.5 | Estimation of the overall model with sequential mediation

Finally, to obtain insights on the overall conceptual model, we carry out a formal sequential mediation analyses using model 6 of the SPSS Process macro (Hayes and Preacher, 2014) with 5,000 bootstrapped samples. For the initial study, we test whether the experimental conditions (recall and analysis of previous successful vs. unsuccessful financial experience) have an effect on participants' financial planning propensity and whether this effect is explained by financial



self-efficacy and self-control. We find that although the direct effect is not significant (coefficient = .279, CI 95% [−.013; .573]), the complete sequential mediation shows a significant *indirect* effect (coefficient = .023, CI 95% [.000; .057]). We carry out a similar sequential mediation analysis for the follow-up study as well, investigating whether the initial experimental condition has an indirect effect on actual financial planning and financial planning activity, as explained by participants' financial self-efficacy and self-control. The results confirm that even in the absence of a direct effect of the experimental condition (coefficient = .307, CI 90% [−.208; .824]), there is an indirect effect of the treatment on actual financial planning (coefficient = .124, CI 90% [.010; .293]). However, this effect, while being very close to significance, does not hold for financial planning activity (direct effect: coefficient = .358, CI 90% [−.300; 1.018]; indirect effect: coefficient = −.112, CI 90% [−.303; .001]).

5 | DISCUSSION AND CONCLUSION

5.1 | Contributions to research

Considering the growing self-responsibility for preparing for a financially secure future (Hoffmann and Plotkina, 2020) and the rising financial fragility of many individuals (Jappelli *et al.*, 2013), increasing our understanding of consumer financial decision making is of mounting importance. Financial markets and the decisions consumers must make regarding their personal financial management are increasingly complex. As a result, financial planning is ever more demanding, and stimulating consumers to proactively manage their finances is an urgent policy matter (Lusardi and Mitchell, 2011). In this regard, increasing financial self-efficacy is of particular importance, as it is key to proactive and effective financial decision making (Hoffmann and McNair, 2019; Farrell *et al.*, 2016; Kuhnen and Melzer, 2018). Indeed, an emerging literature on financial self-efficacy argues that consumers' subjective knowledge and ability to manage their personal finances can be even more important than their objective skills (e.g., Lind *et al.*, 2020).

Although the question of how to stimulate financial self-efficacy is of paramount importance, research on the topic is missing to date. In this study, we address this gap in the literature by investigating the effect of enactive mastery (i.e., recalling and analyzing previous financial experiences) on consumers' financial self-efficacy and examining its subsequent impact on their financial planning propensity. A key finding is that recalling and analyzing a successful previous financial experience increases consumers' belief in their ability to successfully manage their personal financial affairs. Importantly, we also assess: (a) for *which* kind of consumers such a recall and analysis intervention is more likely to be effective by considering the moderating role of an optimistic personality; (b) examine *how* an increase in financial self-efficacy raises consumers' financial planning propensity in terms of the underlying process by examining the mediating role of the intermediate psychological outcome of greater self-control; and (c) study *if* an increased propensity to plan also affects (self-reported) actual financial planning behavior. In particular, we verify the effectiveness of our intervention on consumers' actual financial planning behavior in the 3 months following the initial intervention. In doing so, we address a key limitation of the existing literature which laments the short-term effectiveness of financial interventions (e.g., Fernandes *et al.*, 2014). Importantly, we find that financial planning propensity voiced directly after our intervention is positively related to actual financial planning in the ensuing 3 months.

5.2 | Implications for practice

Our results offer guidelines on how to empower consumers and promote effective personal financial planning. Most importantly, practitioners should focus on successful experiences when communicating with consumers and highlight the value of even small accomplishments in order to trigger a successful experience as a reference point to build consumer's financial self-efficacy.

Even though financial interventions to develop individuals' beliefs of financial self-efficacy might typically target people suffering from the fallout of previous unsuccessful financial experiences or those engaging in financially damaging behaviors, actual interventions should center around any identifiable *successful* financial event or experience of targeted participants. Such successful experiences do not necessarily need to be extremely significant—on the contrary, they could refer to a rather mundane action where an individual achieved a certain level of self-evaluated success (i.e., paid off credit card debt; managed to save for a vacation; was able to afford purchasing a car). This relative success can then become the starting point to analyze the developed capacity to cope with these and similar financial situations in the future, thereby fostering consumers' self-efficacy.

Alternatively, training programs could induce successful experiences in a gamified context, similar to what is being done in the health domain (e.g., Alahäivälä and Oinas-Kukkonen, 2016). For instance, the boardgame Charge Large which aims to teach financial literacy and smart planning by letting players “manage their debt and assets to find success,” starts by providing players with a Gold credit card. Doing so allows players to build upon an implied past success to improve their further financial decisions. To have an even greater positive impact on consumers' financial self-efficacy and future financial behavior, such games could be modified to include an introductory education component that guides players in understanding how the provided sum of money could have been attained and invite them to perform an analysis of such a successful path. Finally, consumers with damaging financial behavior can receive badges for staying away from these behaviors, similar to sobriety chips (e.g., Rudy and Greil, 1987), to make them recall their achievements and stay the course.

Apart from above-mentioned interventions, practitioners are also advised to utilize success-oriented wording in their publicity materials to trigger positive values in consumers. A success-oriented positioning can enhance consumers' self-efficacy by pointing to the power and control they have over their life. As a good example, Infinity Financial Services leverages such an approach in its campaign “You have the power to shape your own financial destiny.” Similarly, in recent years, Commonwealth Bank of Australia launched the “Can” campaign which highlights that people can achieve more with their finances if they believe in themselves and take control of their life, explicitly inducing the belief in consumers that they “can.” In contrast, campaign wording such as “Your finances aren't in the best shape,” used by the Financial Planning Association of Australia is counter-productive, as it implies previous unsuccessful financial experiences, which is more likely to discourage than encourage people to take charge of their finances, given the expected negative effect on consumer's financial self-efficacy as per the findings of our study.

To maintain the experience of enactive mastery experiences and thus build beliefs of financial self-efficacy, practitioners should further consider to periodically congratulate consumers on their achievements and the advancements they are making. This approach is commonly used by health applications that aim to help consumers align with their healthy living objectives through self-monitoring apps regarding, for example, healthy eating, engaging in sufficient



physical activity, or sleeping well (Bidargaddi *et al.*, 2018). While firms such as You Need a Budget and Mint both employ push notifications to “correct” excessive spending tendencies and try to limit people's expenses, more positive notifications that stimulate consumers to recall and analyzes successful previous financial experiences such as “Well done, you stayed within your budget” are likely to be particularly beneficial to strengthen consumers' belief in their financial self-efficacy and incentivize them to keep up with their intended behavior of staying within a specific budget.

A final implication of our findings is that although leveraging salient examples of potential negative consequences has been effective at times in discouraging negative consumer behaviors in other decision making contexts, such as smoking (Hammond *et al.*, 2007), in the financial decision making context, such approaches are unlikely to be effective. This pattern of results could be explained by prior findings that the effect of fear appeals might be limited (Witte, 1996) as well as by the nature of the decision context. That is, prior research finds that in high-involvement conditions, negative focus is superior, whereas in low-involvement conditions, positive focus is superior (Donovan and Jalleh, 1999). Although financial planning has important long-term implications, consumer involvement is often relatively low (Brüggen *et al.*, 2019), which could explain the higher effectiveness of the positive intervention we find in our study.

5.3 | Limitations and future research

Like all studies, our work has some limitations, which offer opportunities for future research. First, we required participants to recall and analyze a single financial experience with a certain valence. In reality, however, many consumers will most likely have experienced several financial successes and/or failures during their life. In this regard, future research could help us understand how to make consumers focus on their successes. Furthermore, we find no significant differences between the control and experimental conditions. Nevertheless, our focus on comparing consumers reflecting on negative versus positive experience is in fact ecologically valid, as this is what often occurs in daily life. That is, in reality, individuals always have a reference point of a previous experience that impacts on their further attitudes and behavior (Hoffmann *et al.*, 2013). Furthermore, focusing on one's failures rather than successes is a very natural feature to human beings and to do the opposite (i.e., reflect on one's successes instead) individuals have to be incentivized or trained (Hagel *et al.*, 2018). Some people are even resistant to a positive focus on themselves and their personal experiences (Robinson *et al.*, 2016). Therefore, recall and analysis of a negative experience might be considered a natural baseline condition, while the recall and analysis of a successful experience can be seen as an induced manipulation. Finally, a larger sample might also help to uncover a significant effect between the control and the experimental conditions.

Second, in this study we have not examined whether a success in a different area of one's life (e.g., health) could spill over to financial self-efficacy or self-control, as suggested by the reinforcement view on self-control (Hoffmann and Risse, 2020). Third, future research could explore alternative ways to stimulate financial self-efficacy, for instance by asking consumers to set (sub-) goals (Gist and Mitchell, 1992) or mentally visualize mastery experiences (Mills *et al.*, 2000). Moreover, other frameworks of assessing control over individual's intentions and behaviors might be mobilized, such as the Theory of Planned Behavior (Ajzen, 2002), which outlines the interactions between attitudes, perceived behavioral control, and subjective norms. Similarly, perceived control over external conditions and not only one-self should be added in

future research for a more complete understanding of consumer behavior (Gist and Mitchell, 1992). In this regard, it might also be interesting to pay attention to potentially inflated self-views of consumers (e.g., Garbinsky *et al.*, 2021).

Fourth, future research could explore the risk of potential policy interventions inadvertently instilling overconfidence in consumers' financial capacities, which might lead to negative financial behaviors (Kim *et al.*, 2020; Perry, 2008; Balasubramnian and Sargent, 2020).

Fifth, we hypothesized the recall and analyze intervention to result in either higher or lower levels of financial self-efficacy, but it is also possible that the recall and analysis of an unsuccessful previous financial experience might lead to *learned helplessness* instead, given that the latter construct can be operationalized as the opposite of mastery-oriented behavior (Dweck and Leggett, 1988) and may similarly result from unsuccessful experiences and the consequent loss of motivation or belief in one's capacity to succeed (Sorrenti *et al.*, 2018). Future research could thus consider to specifically measure the construct of learned helplessness too.

Sixth, in this paper we find that high levels of optimism moderate the effectiveness of our intervention by augmenting the positive impact of recalling and analyzing a successful financial experience on individuals' financial self-efficacy. While we relate this effect to the attributional analysis of previous experience, the positive effect of optimism might also occur for other self-efficacy-inducing interventions that instead target the evaluation of task requirements or personal resources (cf. Gist and Mitchell, 1992). Indeed, one could argue that optimism might lead task requirements being interpreted as less challenging and situational restraints to be less of a concern (Carver *et al.*, 2010).

Seventh, while we study the effect of financial planning propensity on actual behavior, the recontact sample is limited in size and behavior is self-reported. Specifically, the sample size could account for the absence of direct effects (e.g., Kenny and Judd, 2014) and should ideally be increased in future studies on the topic. Therefore, our analysis of the relationship between intentions and behavior should be considered as exploratory.

Finally, despite the recall and analysis of a successful previous financial experience being evaluated in the manipulation check as being of more positive valence than the recall and analysis of an unsuccessful previous financial experience, they were both rated as above the scale midpoint. Future research could thus try to develop potential alternative manipulations that result in a strictly negative valence.

Despite these limitations, our study contributes to the hitherto scarce literature on how to increase consumers' financial self-efficacy and provides a set of actionable implications for policy makers and other practitioners on how to design and implement (more) effective interventions to financially empower (vulnerable) consumers (see e.g., Hoffmann *et al.*, 2020).

ACKNOWLEDGMENTS

We thank the editor, Ron Paul Hill, the Associate Editor, and two anonymous reviewers for their helpful feedback and constructive guidance throughout the review process. The authors gratefully acknowledge financial support from the University of Adelaide Business School and EM Strasbourg Business School for data collection. Finally, the authors thank Elizabeth Anderson for excellent editorial assistance. Any remaining errors are solely those of the authors.

ENDNOTES

¹ Following the intent-to-treat logic (cf. McCoy, 2017), we have included in the follow-up sample respondents who remembered the nature of the study (i.e., management of personal finances) and did not exclude from the sample any respondents who did not remember the exact experimental instruction which they had received in the initial study.



- ² While the valence of the experimental manipulation is evaluated as above the scale midpoint in the unsuccessful condition, it is still evaluated to be significantly lower than in the successful condition, which is in line with our expectations. This result could be explained by the fact that we asked participants to recall and analyze any unsuccessful financial experience, leaving them the freedom to pick a real-life and recent experience that they could recall and were willing to share with the researchers. As a consequence, participants in the unsuccessful condition might themselves focus on something that is only mildly upsetting. In this regard, we consider the fact that the unsuccessful experience manipulation is evaluated as significantly less positive than the successful experience manipulation as a satisfactory result, in particular since the absolute negativity of an unsuccessful experience could be mitigated by positive recall bias of past events (Skowronski, 2011, Kardum and Daskijević, 2001, e.g., Colombo *et al.*, 2020).
- ³ The causal steps approach popularized by Baron and Kenny (1986) is being increasingly criticized. Recent approaches to assess mediation claim that an independent variable can also exert an indirect effect on a dependent variable through a mediator in the absence of a direct association between the independent and dependent variables (Hayes, 2009). Kenny and Judd (2014) confirm that there is no contradiction in having an indirect effect even if there is no total effect to be mediated, as indirect effects can be uncovered with a lower power study as compared to direct effects.

REFERENCES

- Abramson, L.Y., Seligman, M.E. and Teasdale, J.D. (1978) Learned helplessness in humans: critique and reformulation. *Journal of Abnormal Psychology*, 87(1), 49–74.
- Ajzen, I. (2002) Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, 32(4), 665–683.
- Ajzen, I. and Fishbein, M. (1980) *Understanding Attitudes and Predicting Social Behaviour*. Englewood Cliffs, NJ: Prentice-Hall.
- Alahäivälä, T. and Oinas-Kukkonen, H. (2016) Understanding persuasion contexts in health gamification: a systematic analysis of gamified health behavior change support systems literature. *International Journal of Medical Informatics*, 96, 62–70.
- Allgood, S. and Walstad, W.B. (2016) The effects of perceived and actual financial literacy on financial behaviors. *Economic Inquiry*, 54(1), 675–697.
- Ameriks, J., Caplin, A. and Leahy, J. (2003) Wealth accumulation and the propensity to plan. *Quarterly Journal of Economics*, 118(3), 1007–1047.
- Anderson, J.C. and Gerbing, D.W. (1988) Structural equation modeling in practice: a review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423.
- Anderson, A., Baker, F. and Robinson, D.T. (2017) Precautionary savings, retirement planning and misperceptions of financial literacy. *Journal of Financial Economics*, 126(2), 383–398.
- Andresen, L., Boud, D. and Cohen, R. (2000) Experience-based learning. In: Foley, G. (Ed.) *Understanding Adult Education and Training*. Sydney: Allen & Unwin, pp. 225–239.
- Azizli, N., Atkinson, B.E., Baughman, H.M. and Giammarco, E.A. (2015) Relationships between general self-efficacy, planning for the future, and life satisfaction. *Personality and Individual Differences*, 82, 58–60.
- Bagozzi, R.P., Yi, Y. and Phillips, L.W. (1991) Assessing construct validity in organizational research. *Administrative Science Quarterly*, 36(3), 421–458.
- Balasubramnian, B. and Sargent, C.S. (2020) Impact of inflated perceptions of financial literacy on financial decision making. *Journal of Economic Psychology*, 80, 102306.
- Bandura, A. (1977) Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215.
- Bandura, A. (1986) *Social Foundations of Thought and Action: A Social Cognitive Theory*, Vol. 1986. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1997) *Self-Efficacy: The Exercise of Control*. New York: W.H. Freeman and Company.
- Barbić, D., Lučić, A. and Chen, J.M. (2019) Measuring responsible financial consumption behaviour. *International Journal of Consumer Studies*, 43(1), 102–112.
- Baron, R.M. and Kenny, D.A. (1986) The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182.
- Bidargaddi, N., Pituch, T., Haitham, M., Short, C. and Strecher, V. (2018) Predicting which type of push notification content motivates users to engage in a self-monitoring app. *Preventive Medicine Reports*, 11, 267–273.

- Block, L.G. and Keller, P.A. (1995) When to accentuate the negative: the effects of perceived efficacy and message framing on intentions to perform a health-related behavior. *Journal of Marketing Research*, 32(2), 192–203.
- Boven, V., Leaf, J.K., Peter McGraw, A. and Dale, J. (2010) Feeling close: emotional intensity reduces perceived psychological distance. *Journal of Personality and Social Psychology*, 98(6), 872–885.
- Brüggen, E.C., Post, T. and Schmitz, K. (2019) Interactivity in online pension planners enhances engagement with retirement planning—but not for everyone. *Journal of Services Marketing*, 33(4), 488–501.
- Buller, D.B., Borland, R. and Michael, B. (1998) Impact of behavioral intention on effectiveness of message features: evidence from the family sun safety project. *Human Communication Research*, 24(3), 433–453.
- Carden, S.W., Holtzman, N.S. and Strube, M.J. (2017) CAHOST: an excel workbook for facilitating the Johnson–Neyman technique for two-way interactions in multiple regression. *Frontiers in Psychology*, 8, 1293.
- Carver, C.S., Scheier, M.F. and Segerstrom, S.C. (2010) Optimism. *Clinical Psychology Review*, 30(7), 879–889.
- Chen, G., Gully, S.M. and Eden, D. (2001) Validation of a new general self-efficacy scale. *Organizational Research Methods*, 4(1), 62–83.
- Chin, W.W. (1998) The partial least squares approach to structural equation modeling. *Modern Methods for Business Research*, 295(2), 295–336.
- Colombo, D., Suso-Ribera, C., Fernández-Álvarez, J., Cipresso, P., Garcia-Palacios, A., Riva, G. and Botella, C. (2020) Affect recall bias: being resilient by distorting reality. *Cognitive Therapy and Research*, 44, 906–918.
- Consumer Financial Protection Bureau. (2013) Empowering Low Income and Economically Vulnerable Consumers. Available at: http://files.consumerfinance.gov/f/201311_cfpb_report_empowering-economically-vulnerable-consumers.pdf [Accessed 01/03/2021].
- Cornelissen, G., Pandelaere, M., Warlop, L. and Dewitte, S. (2008) Positive cueing: promoting sustainable consumer behavior by cueing common environmental behaviors as environmental. *International Journal of Research in Marketing*, 25(1), 46–55.
- Craighead, C.W., Ketchen, D.J., Dunn, K.S. and Hult, G.T.M. (2011) Addressing common method variance: guidelines for survey research on information technology, operations, and supply chain management. *IEEE Transactions on Engineering Management*, 58(3), 578–588.
- Croy, P., Gerrans, P. and Speelman, C. (2010) The role and relevance of domain knowledge, perceptions of planning importance, and risk tolerance in predicting savings intentions. *Journal of Economic Psychology*, 31(6), 860–871.
- Diener, C.I. and Dweck, C.S. (1978) An analysis of learned helplessness: continuous changes in performance, strategy, and achievement cognitions following failure. *Journal of Personality and Social Psychology*, 36(5), 451–462.
- Dietz, B.E., Carrozza, M. and Neal Ritchey, P. (2003) Does financial self-efficacy explain gender differences in retirement saving strategies? *Journal of Women & Aging*, 15(4), 83–96.
- Donovan, R.J. and Jalleh, G. (1999) Positively versus negatively framed product attributes: the influence of involvement. *Psychology & Marketing*, 16(7), 613–630.
- Drever, A.I., Odders-White, E., Kalish, C.W., Else-Quest, N.M., Hoagland, E.M. and Nelms, E.N. (2015) Foundations of financial well-being: insights into the role of executive function, financial socialization, and experience-based learning in childhood and youth. *Journal of Consumer Affairs*, 49(1), 13–38.
- Dweck, C.S. and Leggett, E.L. (1988) A social-cognitive approach to motivation and personality. *Psychological Review*, 95(2), 256–273.
- Farrell, L., Fry, T.R.L. and Risse, L. (2016) The significance of financial self-efficacy in explaining women's personal finance behaviour. *Journal of Economic Psychology*, 54, 85–99.
- Fernandes, D., Lynch, J.G. and Netemeyer, R.G. (2014) Financial literacy, financial education, and downstream financial behaviors. *Management Science*, 60(8), 1861–1883.
- Forbes. (2019) Americans Do Not Have Enough Retirement Savings, Really. Available at: <https://www.forbes.com/sites/teresaghilarducci/2019/03/28/no-americans-really-do-not-have-enough-retirement-savings/#7e4a5c672b21> [Accessed 01/03/2021].
- Fornell, C. and Larcker, D.F. (1981) Structural equation models with unobservable variables and measurement error: algebra and statistics. *Journal of Marketing Research*, 18, 382–388.
- Garbinsky, E.N., Mead, N.L. and Gregg, D. (2021) Popping the positive illusion of financial responsibility can increase personal savings: applications in emerging and Western markets. *Journal of Marketing*, 85(3), 97–112.
- Garðarsdóttir, R.B. and Dittmar, H. (2012) The relationship of materialism to debt and financial well-being: the case of Iceland's perceived prosperity. *Journal of Economic Psychology*, 33(3), 471–481.



- Gist, M.E. and Mitchell, T.R. (1992) Self-efficacy: a theoretical analysis of its determinants and malleability. *Academy of Management Review*, 17(2), 183–211.
- Gollwitzer, P.M. (1999) Implementation intentions: strong effects of simple plans. *American Psychologist*, 54(7), 493–503.
- Goodman, J.K. and Paolacci, G. (2017) Crowdsourcing consumer research. *Journal of Consumer Research*, 44(1), 196–210.
- Grant, A.M. and Ashford, S.J. (2008) The dynamics of proactivity at work. *Research in Organizational Behavior*, 28(1), 3–34.
- Grote, N.K., Bledsoe, S.E., Larkin, J., Lemay, E.P., Jr. and Brown, C. (2007) Stress exposure and depression in disadvantaged women: the protective effects of optimism and perceived control. *Social Work Research*, 31(1), 19–33.
- Hadar, L., Sood, S. and Fox, C.R. (2013) Subjective knowledge in consumer financial decisions. *Journal of Marketing Research*, 50(3), 303–316.
- Hagel, J., Brown, J.S. and Wooll, M. (2018) Deloitte Insights. Available at: <https://www2.deloitte.com/us/en/insights/topics/talent/business-performance-improvement/reflect-on-experiences-learning-faster.html> [Accessed 01/03/2021].
- Haman, D.C. and Laker, D.R. (2018) Financial planning self-efficacy: a framework for research and practical application. *Journal of Financial Service Professionals*, 72(5), 87–96.
- Hammond, D., Fong, G.T., Ron, B., Michael Cummings, K., McNeill, A. and Driezen, P. (2007) Text and graphic warnings on cigarette packages: findings from the international tobacco control four country study. *American Journal of Preventive Medicine*, 32(3), 202–209.
- Hayes, A.F. (2009) Beyond Baron and Kenny: statistical mediation analysis in the new millennium. *Communication Monographs*, 76(4), 408–420.
- Hayes, A.F. and Preacher, K.J. (2014) Statistical mediation analysis with a multicategorical independent variable. *British Journal of Mathematical and Statistical Psychology*, 67(3), 451–470.
- Heckman, S., Lim, H.N. and Montalto, C. (2014) Factors related to financial stress among college students. *Journal of Financial Therapy*, 5(3), 19–39.
- Hentzen, J.K., Hoffmann, A.O.I. and Dolan, R.M. (2021) Which consumers are more likely to adopt a retirement app and how does it explain Mobile technology-enabled retirement engagement? *International Journal of Consumer Studies* [Forthcoming]. <https://doi.org/10.1111/ijcs.12685>.
- Hoffmann, A.O.I. and McNair, S.J. (2019) How does consumers' financial vulnerability relate to positive and negative financial outcomes? The mediating role of individual psychological characteristics. *Journal of Consumer Affairs*, 53(4), 1630–1673.
- Hoffmann, A.O.I. and Plotkina, D. (2020) Why and when does financial information affect retirement planning intentions and which consumers are more likely to act on them? *Journal of Business Research*, 117, 411–431.
- Hoffmann, A.O.I. and Risse, L. (2020) Do good things come in pairs? How personality traits help explain Individuals' simultaneous pursuit of a healthy lifestyle and financially responsible behavior. *Journal of Consumer Affairs*, 54(3), 1082–1120.
- Hoffmann, A.O.I., Henry, S.F. and Kalogeras, N. (2013) Aspirations as reference points: an experimental investigation of risk behavior over time. *Theory and Decision*, 75(2), 193–210.
- Hoffmann, A.O.I., McNair, S. and Pallant, J.I. (2020) The financial vulnerability trap: using latent transition analysis to explore the dynamics of consumers' financial vulnerability over time. *European Journal of Marketing* [Forthcoming]. <https://doi.org/10.1108/EJM-04-2020-0255>.
- Jappelli, T., Pagano, M. and Di Maggio, M. (2013) Households' indebtedness and financial fragility. *Journal of Financial Management, Markets and Institutions*, 1(1), 23–46.
- Johnson, P.O. and Neyman, J. (1936) Tests of certain linear hypotheses and their application to some educational problems. *Statistical Research Memoirs*, 1, 57–93.
- Kahneman, D. and Tversky, A. (1979) Prospect theory: an analysis of decision under risk. *Econometrica*, 47(2), 263–291.
- Kardum, I. and Daskjević, K.T. (2001) Absolute and relative accuracy in the retrospective estimate of positive and negative mood. *European Journal of Psychological Assessment*, 17(1), 69–77.
- Kellaris, J.J., Kardes, F.R. and Dinovo, T. (1995) Exploring the boundaries of the framing effect: the moderating roles of disparate expected values and perceived costs of judgmental errors. *Marketing Letters*, 6(3), 175–182.

- Kenny, D.A. and Judd, C.M. (2014) Power anomalies in testing mediation. *Psychological Science*, 25(2), 334–339.
- Kim, K.T., Lee, J. and Hanna, S.D. (2020) The effects of financial literacy overconfidence on the mortgage delinquency of US households. *Journal of Consumer Affairs*, 54(2), 517–540.
- Kolb, D.A. (2014) *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs, NJ: Prentice Hall.
- Kuhnen, C.M. and Melzer, B.T. (2018) Non-cognitive abilities and financial delinquency: the role of self-efficacy in avoiding financial distress. *Journal of Finance*, 73(6), 2837–2869.
- Lee, J., Warkentin, M., Crossler, R.E. and Otondo, R.F. (2017) Implications of monitoring mechanisms on bring your own device adoption. *Journal of Computer Information Systems*, 57(4), 309–318.
- Letkiewicz, J.C., Domian, D.L., Robinson, C. and Uborceva, N. (2014) *Self-Efficacy, Financial Stress, and the Decision to Seek Professional Financial Planning Help*. Nashville, TN: Academy of Financial Services Annual Meeting.
- Liem, A.D., Lau, S. and Nie, Y. (2008) The role of self-efficacy, task value, and achievement goals in predicting learning strategies, task disengagement, peer relationship, and achievement outcome. *Contemporary Educational Psychology*, 33(4), 486–512.
- Lind, T., Ahmed, A., Skagerlund, K., Strömbäck, C., Västfjäll, D. and Tinghög, G. (2020) Competence, confidence, and gender: the role of objective and subjective financial knowledge in household finance. *Journal of Family and Economic Issues*, 41, 626–638.
- Lindell, M.K. and Whitney, D.J. (2001) Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology*, 86(1), 114–121.
- Loke, V., Choi, L. and Libby, M. (2015) Increasing youth financial capability: an evaluation of the MyPath savings initiative. *Journal of Consumer Affairs*, 49(1), 97–126.
- Lown, J.M. (2011) Development and validation of a financial self-efficacy scale. *Journal of Financial Counseling & Planning*, 22(2), 54–63.
- Lusardi, A. and Mitchell, O.S. (2011) Financial literacy and retirement planning in the United States. *Journal of Pension Economics & Finance*, 10(4), 509–525.
- Luthans, F. and Peterson, S.J. (2002) Employee engagement and manager self-efficacy. *Journal of Management Development*, 21(5), 376–387.
- Lynch, J.G., Netemeyer, R.G., Spiller, S.A. and Zammit, A. (2010) A generalizable scale of propensity to plan: the long and the short of planning for time and for money. *Journal of Consumer Research*, 37(1), 108–128.
- McCloud, L. and Dwyer, R.E. (2011) The fragile American: hardship and financial troubles in the 21st century. *The Sociological Quarterly*, 52(1), 13–35.
- McCoy, C.E. (2017) Understanding the intention-to-treat principle in randomized controlled trials. *Western Journal of Emergency Medicine*, 18(6), 1075–1078.
- Mehrabian, A. and Russell, J.A. (1974) *An Approach to Environmental Psychology*. Cambridge, MA: The MIT Press.
- Mills, K.D., Munroe, K.J. and Hall, C.R. (2000) The relationship between imagery and self-efficacy in competitive athletes. *Imagination, Cognition and Personality*, 20(1), 33–39.
- Montford, W. and Goldsmith, R.E. (2016) How gender and financial self-efficacy influence investment risk taking. *International Journal of Consumer Studies*, 40(1), 101–106.
- Netemeyer, R.G., Warmath, D., Fernandes, D. and Lynch, J.G. (2018) How am I doing? Perceived financial well-being, its potential antecedents, and its relation to overall well-being. *Journal of Consumer Research*, 45(1), 68–89.
- Nunnally, J.C. (1978) *Psychometric Theory*, 2nd edition. New York: McGraw-Hill.
- Pajares, F., Johnson, M.J. and Usher, E.L. (2007) Sources of writing self-efficacy beliefs of elementary, middle, and high school students. *Research in the Teaching of English*, 42(1), 104–120.
- Peeters, N., Rijk, K., Soetens, B., Storms, B. and Hermans, K. (2018) A systematic literature review to identify successful elements for financial education and counseling in groups. *Journal of Consumer Affairs*, 52(2), 415–440.
- Perry, V.G. (2008) Is ignorance bliss? Consumer accuracy in judgments about credit ratings. *Journal of Consumer Affairs*, 42(2), 189–205.
- Perry, V.G. and Morris, M.D. (2005) Who is in control? The role of self-perception, knowledge, and income in explaining consumer financial behavior. *Journal of Consumer Affairs*, 39(2), 299–313.



- Phan, H.P. (2014) Self-efficacy, reflection, and achievement: a short-term longitudinal examination. *Journal of Educational Research*, 107(2), 90–102.
- Phan, H.P. (2016) Longitudinal examination of optimism, personal self-efficacy and student well-being: a path analysis. *Social Psychology of Education*, 19(2), 403–426.
- Phan, H.P. and Ngu, B.H. (2016) Sources of self-efficacy in academic contexts: a longitudinal perspective. *School Psychology Quarterly*, 31(4), 548–564.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J.-Y. and Podsakoff, N.P. (2003) Common method bias in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88, 879–903.
- Puri, M. and Robinson, D.T. (2007) Optimism and economic choice. *Journal of Financial Economics*, 86(1), 71–99.
- Rand, K.L. (2018) Hope, self-efficacy, and optimism: conceptual and empirical differences. In: Gallagher, M.W. and Lopez, S.J. (Eds.) *Oxford Library of Psychology. The Oxford Handbook of Hope*. Oxford, UK: Oxford University Press, pp. 45–58.
- Robinson, K.J., Mayer, S., Allen, A.B., Terry, M., Chilton, A. and Leary, M.R. (2016) Resisting self-compassion: why are some people opposed to being kind to themselves? *Self and Identity*, 15(5), 505–524.
- Rudy, D.R. and Greil, A.L. (1987) Taking the pledge: the commitment process in alcoholics anonymous. *Sociological Focus*, 20(1), 45–59.
- Scheier, M.F. and Carver, C.S. (1985) Optimism, coping, and health: assessment and implications of generalized outcome expectancies. *Health Psychology*, 4(3), 219–247.
- Scheier, M.F. and Carver, C.S. (1988) A model of behavioral self-regulation: translating intention into action. In: L. Berkowitz (Ed.), *Advances in Experimental Social Psychology*, Vol. 21. Social psychological studies of the self: Perspectives and programs (pp. 303–346). Cambridge, Massachusetts, United States: Academic Press.
- Scheier, M.F., Weintraub, J.K. and Carver, C.S. (1986) Coping with stress: divergent strategies of optimists and pessimists. *Journal of Personality and Social Psychology*, 51(6), 1257–1264.
- Scheier, M.F., Carver, C.S. and Bridges, M.W. (2001) Optimism, pessimism, and psychological well-being. In: Chang, E.C. (Ed.) *Optimism & Pessimism: Implications for Theory, Research, and Practice*. Washington, D.C.: American Psychological Association, pp. 189–216.
- Seligman, M.E.P. (1991) *Learned Optimism*. New York: Knopf.
- Sheppard, B.H., Hartwick, J. and Warshaw, P.R. (1988) The theory of reasoned action: a meta-analysis of past research with recommendations for modifications and future research. *Journal of Consumer Research*, 15(3), 325–343.
- Simmering, M.J., Fuller, C.M., Richardson, H.A., Ocal, Y. and Atinc, G.M. (2015) Marker variable choice, reporting, and interpretation in the detection of common method variance: a review and demonstration. *Organizational Research Methods*, 18(3), 473–511.
- Skowronski, J.J. (2011) The positivity bias and the fading affect bias in autobiographical memory: a self-motives perspective. In: Alicke, M.D. and Sedikides, C. (Eds.) *Handbook of Self-Enhancement and Self-Protection*. New York, New York: The Guilford Press, pp. 211–231.
- Smith, S.A., Kass, S.J., Rotunda, R.J. and Schneider, S.K. (2006) If at first you don't succeed: effects of failure on general and task-specific self-efficacy and performance. *North American Journal of Psychology*, 8(1), 171–182.
- Snyder, C.R. (2002) Hope theory: rainbows in the mind. *Psychological Inquiry*, 13(4), 249–275.
- Sorrenti, L., Filippello, P., Buzzai, C., Buttò, C. and Costa, S. (2018) Learned helplessness and mastery orientation: the contribution of personality traits and academic beliefs. *Nordic Psychology*, 70(1), 71–84.
- Spencer, S.J., Zanna, M.P. and Fong, G.T. (2005) Establishing a causal chain: why experiments are often more effective than mediational analyses in examining psychological processes. *Journal of Personality and Social Psychology*, 89(6), 845–851.
- Stawski, R.S., Hershey, D.A. and Jacobs-Lawson, J.M. (2007) Goal clarity and financial planning activities as determinants of retirement savings contributions. *The International Journal of Aging and Human Development*, 64(1), 13–32.
- Strömbäck, C., Lind, T., Skagerlund, K., Västfjäll, D. and Tinghög, G. (2017) Does self-control predict financial behavior and financial well-being? *Journal of Behavioral and Experimental Finance*, 14, 30–38.
- Tangney, J.P., Baumeister, R.F. and Boone, A.L. (2004) High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, 72(2), 271–324.



- Topa, G. and Pra, I. (2018) Retirement adjustment quality: optimism and self-efficacy as antecedents of resource accumulation. *Applied Research in Quality of Life*, 13(4), 1015–1035.
- Warmath, D. and Zimmerman, D. (2019) Financial literacy as more than knowledge: the development of a formative scale through the lens of Bloom's domains of knowledge. *Journal of Consumer Affairs*, 53(4), 1602–1629.
- Webb, T.L. and Sheeran, P. (2008) Mechanisms of implementation intention effects: the role of goal intentions, self-efficacy, and accessibility of plan components. *British Journal of Social Psychology*, 47(3), 373–395.
- Wiener, J. and Doescher, T. (2008) A framework for promoting retirement savings. *Journal of Consumer Affairs*, 42(2), 137–164.
- Witte, K. (1996) Fear as motivator, fear as inhibitor: using the extended parallel process model to explain fear appeal successes and failures. In: Andersen, P.A. and Guerrero, L.K. (Eds.) *Handbook of Communication and Emotion*. San Diego: Academic Press, pp. 423–450.

How to cite this article: Hoffmann, A. O. I., & Plotkina, D. (2021). Let your past define your future? How recalling successful financial experiences can increase beliefs of self-efficacy in financial planning. *Journal of Consumer Affairs*, 1–25. <https://doi.org/10.1111/joca.12378>

APPENDIX

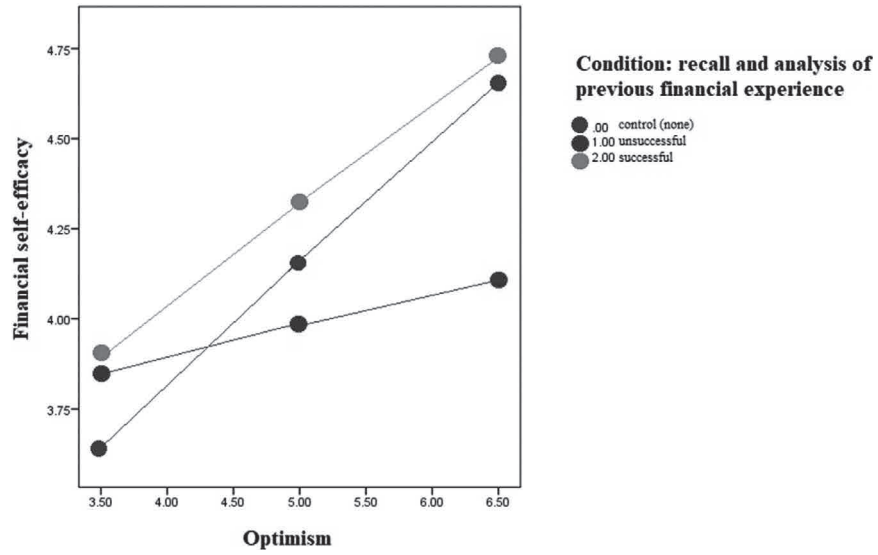


FIGURE A1 Johnson-Neyman scatter plot of financial self-efficacy for different levels of trait optimism for the two experimental conditions with the control group

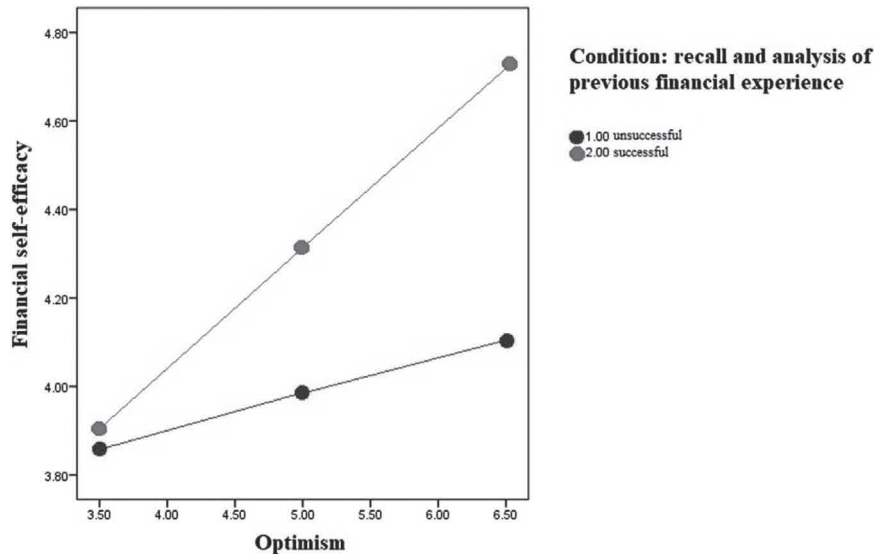


FIGURE A2 Johnson-Neyman scatter plot of financial self-efficacy for different levels of trait optimism for the two experimental conditions without the control group