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Creating and Testing a Personal Finance Motivation Scale Based on Self-Determination Theory

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ABSTRACT

We create a Personal Finance Motivation scale to measure the motivation to understand and manage one's personal finances. The scale is designed to measure intrinsic motivation, four forms of extrinsic motivation (identified, introjected, external material, and external social regulation), and amotivation. These subscales fall along a self-determination continuum as postulated by Deci and Ryan (1985). We validate the scale using survey data and hypotheses drawn from Self-Determination Theory (SDT). Correlations among the subscales and Cronbach's alpha support the scale's factor structure and indicate internal consistency. Regression results indicate that intrinsic motivation and a composite of intrinsic motivation and identified regulation are associated with respondents' assessments of the importance of finance and their own competence related to financial decision-making, when respondents have someone to help them make decisions, and when respondents are not financially dependent on another. We conclude that our Personal Finance Motivation scale is sound and that its subscales are related to competence, relatedness, and autonomy as predicted by SDT. We discuss applications for researchers, instructors, and financial advisors.

JEL Classification: D14, G530, A22

1 | Introduction

Studies show that many people lack necessary financial knowledge. Studies also show that those with less financial knowledge tend to suffer financial consequences, such as lower or insufficient retirement savings, lower credit scores, higher interest payments and indebtedness, higher rates of bankruptcy, and lower likelihood of participation in higher-yielding financial markets (e.g., Habyarimana and Kakkar 2022; Lusardi and Mitchell 2007; Mandell 2006; National Council on Economic Education 2005; Peng et al. 2007; Van Rooij et al. 2011; Xiao et al. 2010). While education efforts aim to improve financial literacy, greater knowledge is not always sufficient to change behavior. Research suggests financial education alone has a weak impact on long-term financial behavior, largely due to a lack of motivation and engagement (Fernandes et al. 2014; Mandell and Klein 2007, 2009). Financial education efforts may be more

successful when paired with motivational strategies (Lusardi et al. 2008).

Motivation is widely recognized as a key factor in performance and learning, but understanding what motivates individuals and how to reach them when they are unmotivated can be challenging. One popular theory of motivation is Self-Determination Theory (SDT), first fully presented in Deci and Ryan's 1985 book, *Intrinsic Motivation and Self-Determination in Human Behavior*. In SDT, motivation is conceptualized as a continuum that ranges from lack of intention to act, or amotivation, through non-self-determined behavior prompted by external pressures or rewards to self-determined behavior that arises from consciously valuing an action, fully accepting it as important or necessary, and finding enjoyment from it. Specific scales to measure and classify motivation using SDT have been developed and empirically tested in several arenas,

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including education, work, weight loss, sports, and therapy (e.g., Gagné et al. 2014; Pelletier et al. 1995, 1997; Tremblay et al. 2009; Vallerand et al. 1989).

Despite the relevance of personal finance to an individual's well-being and to the economy as a whole, we know of only one motivation scale related to the management of personal finances. Di Domenico et al. (2022) created a financial motivation scale using very specific behaviors to assess respondents' motivation to monitor their budgets, pay bills on time, and learn about new financial products and services. They found that autonomous motivation was positively associated with constructive financial behaviors and with their measures of financial knowledge, self-efficacy, and well-being. Amotivation was positively associated with overspending and negatively associated with their measures of financial knowledge, financial self-efficacy, and well-being.

In this paper, we add to the literature on financial motivation by creating and testing a general Personal Finance Motivation scale that can be used by finance instructors, researchers, and financial advisers to examine motivation to try to understand and manage one's personal finances. We develop our Personal Finance Motivation scale by adapting the Multidimensional Work Motivation scale described and tested in Gagné et al. (2014). We validate our scale using survey data and hypotheses drawn from SDT. Correlations among the subscales suggest that the scale's factor structure is sound, while Cronbach's alpha indicates the scale is internally consistent. Our measures of intrinsic and autonomous motivation are positively related to how highly respondents rate the importance of financial knowledge, to the respondents' assessments of their own competence in financial planning and decision-making, and to respondents having someone available to help them when they need to make important decisions. Intrinsic and autonomous motivation are negatively associated with financial dependence. In contrast, our measure of amotivation (i.e., lack of motivation) is negatively related to the importance of finance, respondents' competence, and when they have someone to help them make decisions. Our results are consistent with SDT, which suggests that competence, autonomy, and relatedness are critical to facilitating intrinsic, internalized, and integrated motivation—the types of motivation most likely to result in engagement and higher quality learning.

2 | SDT and Derived Hypotheses

SDT is a framework for the study of human motivation that distinguishes between intrinsic and extrinsic motivation (Deci and Ryan 1985). In SDT, motivation is conceptualized as a continuum that ranges from amotivation to intrinsic motivation. Between these two extremes lie distinct types of extrinsic motivation that vary from fully externally controlled to fully internally controlled: external regulation, introjected regulation, identified regulation, and integrated regulation.

Amotivation is the lack of intention to act. External regulation refers to behaviors performed in response to external demands or rewards. Introjected regulation is somewhat internally driven but involves avoiding guilt or anxiety or maintaining self-worth.

External and introjected regulation are often combined under the umbrella of controlled motivation. Identified regulation occurs when one consciously values a goal or action and accepts it as personally important. Integrated regulation is when the goal or action is fully assimilated with one's values and needs. Identified, integrated, and intrinsic forms of motivation are considered self-determined and are often combined under the umbrella term, autonomous motivation (Ryan and Deci 2000).

Self-determined or autonomous types of motivation are associated with better outcomes in various areas. In education, autonomous motivation is related to more engagement, better performance, lower school dropout rates, and higher quality learning (e.g., Anderson et al. 1976; Ryan and Grolnick 1986). In health care, autonomous motivation is associated with less distraction and tension during therapy, greater adherence to medications, and better long-term maintenance of weight loss (e.g., Pelletier et al. 1997; Williams et al. 1996, 1998). In the workplace, autonomous motivation is correlated with greater employee involvement and commitment, more connection and loyalty, higher proficiency, adaptivity, proactivity, and effort, and less emotional exhaustion and turnover intention (e.g., De Cooman et al. 2013; Gagné et al. 2014; Tremblay et al. 2009).

Researchers are interested in maintaining and enhancing self-determined forms of motivation due to their positive outcomes. Ryan and Deci (2000) assert that these beneficial motivational tendencies require supportive conditions and can be disrupted when such conditions are absent. Studies indicate that feelings of competence during an action increase intrinsic motivation to perform that action (e.g., Deci 1975; Vallerand and Reid 1984). Follow-up studies show that feelings of competence must be accompanied by a sense of autonomy to increase intrinsic motivation (Fisher 1978; Ryan 1982). Other studies find that feelings of security and relatedness promote self-determined forms of motivation (e.g., Anderson et al. 1976; Ryan and Grolnick 1986). In studies related to motivation in the workplace, Hon (2012) found that encouraging, empowering leaders and helpful, supportive co-workers promoted autonomous motivation and creativity; De Cooman et al. (2013) found positive links between need satisfaction, autonomous motivation, and behavioral effectiveness; and Landry et al. (2016) found that self-integrated motives for making money were positively associated with the satisfaction of needs for autonomy, competence, and relatedness.

Drawing on SDT, we propose the following hypotheses with regard to motivation to understand and manage one's personal finances:

1. The more self-determined forms of motivation (intrinsic and autonomous motivation) to understand and manage one's personal finances are positively associated with the individual's feelings of autonomy, competence, and relatedness.
2. The more self-determined forms of motivation (intrinsic and autonomous motivation) to understand and manage one's personal finances are positively associated with the individual's sense of the value or importance of understanding personal finance.

3. Amotivation to understand and manage one's personal finances is negatively associated with the individual's feelings of autonomy, competence, and relatedness.
4. Amotivation to understand and manage one's personal finances is negatively associated with the individual's sense of the value or importance of understanding personal finance.

3 | Methodology

3.1 | The Survey

In Beierlein et al. (2022), the authors measured motivation by their survey respondents' answer to the single question, "How motivated are you to learn personal finance?" Because SDT differentiates among types of motivation, we sought to develop a more complex measure of a person's motivation to invest effort in understanding and managing their personal finances. Therefore, we adapted the Multidimensional Work Motivation Scale (MWMS) presented in Gagné et al. (2014) as shown in Table 1. Note that their scale, and thus our scale, divides external regulation into external social and external material motivation and does not have a separate category for integrated regulation.

The MWMS addresses employees' motivation to put effort into their jobs. The authors note that they specifically ask, "Why do you or why would you put efforts into your current job?" to capture both actual and latent motivation. We aimed to make minimal changes to their wording while translating from the concept of putting efforts into one's work or job to the concept of putting efforts into understanding and managing one's personal finances. Modifying their stem question, we first considered for our stem, "Why do you or why would you put efforts into understanding and managing your personal or household finances?" After consulting with colleagues in the Management and Marketing Departments of our College of Business, we decided to simplify the wording of our stem to, "Why do you or why would you try to understand and manage your personal or household finances?" To translate the items for the Amotivation subscale, we removed references to "work" or "this job." For the External-Social subscale, we changed the example list of others from (e.g., supervisor, colleagues, family, clients ...) to (e.g., partner, family, friends, colleagues). In the External-Material subscale we changed "because others will reward me financially", "offer me greater job security", and "because I risk losing my job if I don't" to "because I will gain financial wealth", "I will have greater financial security", and "because I risk bankruptcy or poverty if I don't". We also added a few more specific material items: "I spend time managing my finances so I can afford nicer clothes, cars, vacations, or house". Our Introjected subscale items are copied exactly from the MWMS. Our Identified subscale items change "in this job" to "into understanding my finances." Finally, for the Intrinsic subscale, we change "doing my job" or "my work" to "learning about and managing my finances."

The survey consists of statements from our Personal Finance Motivation Scale, demographic questions, and true/false

statements written by the authors to deduce respondents' feelings with respect to autonomy, competence, relatedness, and the importance of financial knowledge. Response choices for the Motivation Scale statements were Not at all, Very little, A little, Moderately, Strongly, Very Strongly, and Completely. For comparison, we also included two scale questions from Beierlein et al. (2022) to measure motivation and importance: "How motivated are you to learn about personal finance topics such as budgeting, investing, retirement planning, and borrowing?" and "How important do you think personal finance is?" Response choices ranged from Very unmotivated (unimportant) to Very motivated (important). The entire survey and answer choices are in the Appendix A.

We put half of the demographic questions at the beginning of the survey and the rest at the end to reduce boredom. We randomly distributed statements related to each motivation subscale so that statements related to a subscale, such as amotivation, were not all together, and we ensured that statements were not arranged in order of self-determination from amotivation to intrinsic motivation. We phrased a few of the true/false questions as negative statements so that respondents were less likely to get response fatigue and simply give the same answer for everything. Examples of positive statements are "I feel confident that I can manage my finances," and "I am good at math." Examples of negative statements are "I feel stressed about my personal finances in general," and "I am not interested in finance."

The University's Institutional Review Board (IRB) approved the survey, and we were granted permission to use university email to distribute the survey to a maximum of 200 people employed by the university. We decided to email the link to the Qualtrics survey to the faculty and staff of the College of Arts and Sciences, under the assumption that it was a group more likely to vary in their interest toward finance than say, the College of Business or the College of Fine Arts and Communication. To increase potential sample size, one of the authors also shared the survey link on Facebook, encouraging her friends and friends of her parents to share it, and posted it on two local churches' pages. The survey opened with a cover letter that provided background for the survey, contact information for the lead author and the University IRB, and assurances that participation was voluntary, that responses were completely anonymous and untraceable, and that participants could end the survey at any time. The survey took approximately 7 min to complete. We analyze only completed surveys, which totaled 279. Descriptive statistics are in Table 2. The majority of survey participants are white females who are partnered, at least 40 years old, have earned at least an associate degree, and have personal incomes of less than \$80,000 and household incomes between \$40,000 and \$149,999 annually.

3.2 | Key Variables

Table 3 provides definitions and related literature for variables described here. On our Personal Finance Motivation Scale in Table 1, there are six subscales listed in order of self-determination: amotivation, external—social regulation, external—material regulation, introjected regulation, identified regulation, and intrinsic motivation. Each subscale has three

TABLE 1 | Development of the personal finance motivation scale.

Type of motivation	<i>Multidimensional Work Motivation Scale: “Why do you or why would you put efforts into your current job?”</i>	<i>Personal Finance Motivation Scale: “Why do you or why would you try to understand and manage your personal or household finances?”</i>
Amotivation	I don't because I really feel that I'm wasting my time at work.	I don't, because I really feel that I'm wasting my time.
Amotivation	I do little because I don't think this work is worth putting efforts into.	I do little because I don't think it is worth putting effort into.
Amotivation	I don't know why I'm doing this job; it's pointless work.	I don't know why. It's pointless.
External-social	To get others' approval (e.g., supervisor, colleagues, family, clients ...).	To get others' approval (e.g., partner, family, friends, colleagues)
External-social	Because others will respect me more (e.g., supervisor, colleagues, family, clients ...).	Because others will respect me more (e.g., partner, family, friends, colleagues)
External-social	To avoid being criticized by others (e.g., supervisor, colleagues, family, clients ...).	To avoid being criticized by others (e.g., partner, family, friends, colleagues)
External-Material	Because others will reward me financially only if I put enough effort in my job (e.g., employer, supervisor ...).	Because I will gain financial wealth only if I put enough effort into understanding my finances.
External-material	Because others offer me greater job security if I put enough effort in my job (e.g., employer, supervisor ...).	Because I will have greater financial security if I put enough effort into understanding my finances.
External-material	Because I risk losing my job if I don't put enough effort in it.	Because I risk bankruptcy or poverty if I don't put enough effort into understanding my finances.
External-material		I spend time managing my finances so I can afford nicer clothes, cars, vacations, or house.
Introjected	Because I have to prove to myself that I can.	Because I have to prove to myself that I can.
Introjected	Because it makes me feel proud of myself.	Because it makes me feel proud of myself.
Introjected	Because otherwise I will feel ashamed of myself.	Because otherwise I will feel ashamed of myself.
Introjected	Because otherwise I will feel bad about myself.	Because otherwise I will feel bad about myself.
Identified	Because I personally consider it important to put efforts in this job.	Because I personally consider it important to put effort into understanding my finances.
Identified	Because putting efforts in this job aligns with my personal values.	Because putting effort into understanding my finances aligns with my personal values.
Identified	Because putting efforts in this job has personal significance to me.	Because putting effort into understanding my finances has personal significance to me.
Intrinsic	Because I have fun doing my job.	Because I have fun learning about and managing my finances.
Intrinsic	Because what I do in my work is exciting.	Because learning about and managing my finances is exciting.
Intrinsic	Because the work I do is interesting.	Because learning about and managing my finances is interesting.

or four associated statements phrased as responses to the question, “Why do you or why would you try to understand and manage your personal or household finances?” Respondents were asked to rate how much they agreed with each response. We converted their ratings to numbers as follows, Not at all = 0, Very little = 1, A little = 2, Moderately = 3, Strongly = 4, Very Strongly = 5, and Completely = 6, and totaled each respondent's scores for the statements in each subscale. For example, amotivation has three associated statements, each scored

between 0 and 6. Thus, each respondent's total amotivation score ranges from 0 to 18. Following Ryan and Deci (2000) and Gagné et al. (2014), among others, we added the identified regulation and intrinsic motivation scores to get an autonomous motivation composite score. The composite score and the score for intrinsic motivation are the dependent variables in the regression models used to test hypotheses one and two because identified regulation and intrinsic motivation are the more self-determined forms of motivation in the continuum.

TABLE 2 | Descriptive statistics.

Demographic variables	N	%
Gender		
Male	47	16.8%
Female	231	82.8%
Age		
24 and below	41	14.7%
25–29	19	6.8%
30–39	36	12.9%
40–49	52	18.6%
50–59	53	19.0%
60 and above	78	28.0%
Partnership status		
Partner with joint accounts	162	58.1%
Partner with separate accounts	60	21.5%
Not currently married or living with	57	20.4%
Education level		
Less than HS diploma	2	0.7%
HS or GED	26	9.3%
Some College or Vocational	57	20.4%
Associate	38	13.6%
Bachelor's	80	28.7%
Master's	53	19.0%
Doctorate or professional	22	7.9%
Race/Ethnicity		
African American/Black	11	3.9%
Asian/Asian American	3	1.1%
Hispanic/Latinx	5	1.8%
Native American/American Indian/ Alaskan Native	1	0.4%
White or European American	244	87.5%
Other	15	5.4%
Personal income		
Less than \$39,999	72	25.8%
\$40,000 to \$79,999	133	47.7%
\$80,000 to \$149,999	55	19.7%
\$150,000 or more	15	5.4%
Prefer not to disclose	4	1.4%
Household income		
Less than \$39,999	34	12.2%

(Continues)

TABLE 2 | (Continued)

Demographic variables	N	%
\$40,000 to \$79,999	70	25.1%
\$80,000 to \$149,999	112	40.1%
\$150,000 or more	59	21.1%
Prefer not to disclose	4	1.4%

The total amotivation score is the dependent variable in the regression models used to test hypotheses three and four.

Our explanatory variables in all regression models are importance, competence, relatedness, and low autonomy. We converted responses to the question from Beierlein et al. (2022), “How important do you think personal finance is?” from very unimportant, slightly unimportant, slightly important, and very important into numbers from -2 to 2 . We added 1 to that score each time the respondent selected true for our statements: “Knowledge of personal finance is necessary to make good financial decisions;” “Understanding personal finance is necessary to my financial well-being;” and “Bad financial decisions will negatively affect my overall well-being” to create an importance composite score.

We associate competence with confidence, capability, knowledge, and comfort with math. We created a competence composite score that increases by 1 each time the respondent selects true for our statements: “I am confident that I can manage my finances;” “I feel in control of my finances;” “I am confident in my ability to plan for my financial future;” “When faced with a financial challenge, I can figure out a solution;” “I currently have sufficient knowledge to manage my personal finances;” “I am able to learn about and understand finance topics such as car loans when I need to;” and “I am good at math.”

We associate relatedness with having someone to help when making decisions and wanting to share decision-making responsibilities. However, sharing financial decision-making responsibilities is likely to be relevant only to the respondents who are partnered. Therefore, we did not create a composite relatedness score and just use the response to, “I have a partner, family member, friend, and/or advisor available to help me when I need to make important financial decisions” as our measure of relatedness.

Finally, we associate autonomy with not being financially dependent, stressed, or worried about one's personal finances or current expenses. Because the true/false questions related to these are phrased as negatives, we created a low autonomy composite score that increases by 1 each time the respondent selects true for the statements: “I am financially dependent on someone else;” “I feel stressed about my personal finances in general;” and “I worry about being able to pay my current monthly expenses.”

The remaining variables are control variables drawn from the demographic questions in our survey about gender, age, personal income, household income, and education level, and whether the respondent has a spouse/domestic partner and/or children.

TABLE 3 | Key variables and their definitions.

Key variables	Definitions	Related literature
Motivation subscales: Intrinsic Identified Introjected External-material External-social Amotivation	Participants were asked how much they agree with statements addressing the question: Why do you or why would you try to understand and manage your personal or household finances? Statements associated with each subscale are shown in Table 1. Responses were converted to numbers as follows: Not at all = 0, very little = 1, a little = 2, moderately = 3, strongly = 4, very strongly = 5, and completely = 6. Each subscale score is the sum of responses to the statements corresponding to that subscale.	Gagné et al. (2014)
Autonomous motivation	Total scores from identified regulation and intrinsic motivation summed.	Ryan and Deci (2000) Gagné et al. (2014)
How motivated	Equals the response to “How motivated are you to learn about personal finance topics such as budgeting, investing, retirement planning, and borrowing?” Very unmotivated = -2, slightly unmotivated = -1, slightly motivated = 1, very motivated = 2.	Beierlein et al. (2022)
Importance	Equals the response to “How important do you think personal finance is?” Very unimportant = -2, slightly unimportant = -1, slightly important = 1, very important = 2; plus 1 each time the respondent selects true for “Knowledge of personal finance is necessary to make good financial decisions;” “Understanding personal finance is necessary to my financial well-being;” and “Bad financial decisions will negatively affect my overall well-being”.	Beierlein et al. (2022)
Competence	Increases by 1 each time the respondent selects true for the statements: “I am confident that I can manage my finances;” “I feel in control of my finances;” “I am confident in my ability to plan for my financial future;” “When faced with a financial challenge, I can figure out a solution;” “I currently have sufficient knowledge to manage my personal finances;” “I am able to learn about and understand finance topics such as car loans when I need to;” and “I am good at math.” Possible values range from 0 to 7.	
Relatedness	Equals 1 when respondent selects true for “I have a partner, family member, friend, and/or advisor available to help me when I need to make important financial decisions”; 0 otherwise.	
Low autonomy	Increases by 1 each time the respondent selects true for the statements: “I am financially dependent on someone else;” “I feel stressed about my personal finances in general;” and “I worry about being able to pay my current monthly expenses.” Possible values range from 0 to 3.	

3.3 | Statistical Methods

We use Cronbach's alpha to assess the internal consistency of our Personal Finance Motivation Scale and estimate bivariate correlations between each pair of subscales to test convergent and discriminant validity. We test hypotheses 1–4 using correlation analysis and ordinary least squares regression analysis.

4 | Results

A key objective of our research was to develop a scale to measure the motivation to understand and manage one's personal finances to test our hypotheses and for use in future studies. To construct the scale, we adapted the Multidimensional Work Motivation Scale presented in Gagné et al. (2014). Their scale, and thus, our scale is based on the SDT of Motivation first

TABLE 4 | Alpha coefficients and correlations for the personal finance motivation scale.

	Intrinsic	Identified	Introjected	External material	External social	Amotivation
Intrinsic	0.92					
Identified	***0.66	0.84				
Introjected	***0.56	***0.64	0.76			
External material	***0.43	***0.53	***0.62	0.72		
External social	***0.36	***0.32	***0.49	***0.39	0.86	
Amotivation	-0.04	*-0.07	0.03	***-0.28	***0.22	0.76
Autonomous	***0.89	***0.76	***0.62	***0.49	***0.36	*-0.06

Note: Cronbach's alpha coefficients are on the diagonal in bold. Kendall's tau_b correlation coefficients shown. Spearman's rho and Pearson correlation coefficients indicate similar relationships and significance. Autonomous is the composite of intrinsic motivation and identified regulation. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

proposed by Deci and Ryan (1985). They postulated the existence of distinct types of motivation that are classified along a continuum of increasing autonomy: amotivation, external, introjected, and identified regulation, and intrinsic motivation. If our scale appropriately measures these distinct types of motivation, our data should show an ordered correlation structure in which the adjacent subscales on the continuum are more highly correlated with each other than with subscales that are further apart on the continuum, and each subscale should be internally consistent. Furthermore, our subscales should correlate with related constructs as described in our hypotheses 1 and 3. The more self-determined forms of motivation to understand and manage one's personal finances should be positively associated with autonomy, competence, and relatedness, while amotivation should be negatively associated with those constructs.

To evaluate our scale, we used our survey data to estimate Cronbach's alpha coefficients for each subscale and bivariate correlations between each pair of subscale totals. As shown in Table 4, all Cronbach's alpha coefficients were above 0.7, indicating internal consistency reliability. Correlations between the subscale totals followed the expected correlational patterns, demonstrating convergent and discriminant validity. The highest correlation coefficients are those for the adjacent subscales: intrinsic motivation with identified regulation, identified regulation with introjected regulation, and introjected regulation with external material. While the lowest but still positive correlations are for subscales at extremes: intrinsic motivation, identified regulation, and their composite, autonomous motivation, with external social. Amotivation is negatively related to intrinsic and identified motivation and to their composite, autonomous motivation, as expected.

We begin our hypothesis testing with correlation analysis. Table 5, Panel A displays correlations among our measures of motivation and amotivation and our statements related to importance. Table 5, Panel B displays correlations among our measures of motivation and amotivation and our statements related to competence, relatedness, and low autonomy. The autonomous and intrinsic motivation variables are positively correlated with affirmative responses to the importance, competence, and relatedness statements and are negatively correlated with affirmative responses to the low autonomy statements. These results

are consistent with hypotheses one and two. Among our survey respondents, self-determined motivation to understand and manage one's personal finances is associated with feelings of competence, autonomy, and relatedness and with its perceived importance. The measure of motivation from Beierlein et al. (2022) is significantly correlated with autonomous and intrinsic motivation and negatively correlated with amotivation, but only correlated with certain statements related to competence, relatedness, and autonomy. We suppose that measure is too undifferentiated to detect those relationships. In contrast, the amotivation variable is negatively correlated with competence and relatedness and positively correlated with low autonomy, consistent with hypothesis three. Notably, amotivation is not significantly correlated with statements related to the importance of personal finance; thus, the correlation results do not support hypothesis four.

We further test hypotheses 1–4 using Ordinary Least Squares regression analysis. To test hypotheses 1 and 2, we regress our motivation variables, the autonomous motivation composite and intrinsic motivation on our explanatory variables: importance, competence, relatedness (someone to help me), and low autonomy, as well as our control variables: gender, age, partnered, children, personal income level, household income level, and education level. To test hypotheses 3 and 4, we regress our amotivation variable on the same explanatory and control variables. Results are in Table 6, Panel A. Importance, competence, and relatedness are positively and significantly associated with autonomous and intrinsic motivation and negatively and significantly associated with amotivation. These results are consistent with hypotheses 1–4, except with respect to autonomy. Our low autonomy construct's coefficients are negative for autonomous and intrinsic motivation and positive for amotivation, as hypothesized, but none are statistically significant. Our low autonomy construct is the total number of affirmative responses to the statements: "I am financially dependent on someone else" "I feel stressed about my personal finances in general" and "I worry about being able to pay my current monthly expenses." Considering that perhaps only the first of these directly relates to autonomy, we repeat the regressions using only the response to "I am financially dependent on someone else" to represent low autonomy. The results in Table 6, Panel B indicate that being financially dependent on someone else does have a significant negative association with autonomous and intrinsic motivation

TABLE 5 | Panel A: Correlations among motivation measures and importance statements, Panel B: Correlations among motivation measures and competence, relatedness, and low autonomy statements.

		Motivation measures						Importance			
		Autonomous	Intrinsic	Amotivation	How motivated	How important	Necessary well being	Necessary good decisions	Bad decisions hurt well being		
Autonomous	Pearson	1.000	0.963**	-0.018	0.224**	0.198**	0.261**	0.254**	0.120*		
	<i>p</i> -value		0.000	0.712	0.000	0.000	0.000	0.000	0.043		
	<i>N</i>	408	408	408	408	402	287	287	286		
Intrinsic	Pearson	0.963**	1.000	-0.045	0.240**	0.199**	0.257**	0.234**	0.113		
	<i>p</i> -value	0.000	0.367	0.000	0.000	0.000	0.000	0.000	0.057		
	<i>N</i>	408	408	408	408	402	287	287	286		
How Motivated	Pearson	0.224**	0.240**	-0.125*	1.000	0.229**	0.221**	0.204**	0.074		
	<i>p</i> -value	0.000	0.000	0.011	0.000	0.000	0.000	0.001	0.212		
	<i>N</i>	408	408	408	408	402	287	287	286		
Amotivation	Pearson	-0.018	-0.045	1.000	-0.125*	-0.047	-0.063	-0.060	0.013		
	<i>p</i> -value	0.712	0.367	0.001	0.011	0.351	0.285	0.307	0.822		
	<i>N</i>	408	408	408	408	402	287	287	286		

		Competence				Relatedness		Low autonomy		
		Confident manage	In control	Confident plan	Can figure out solution	Able to learn	Math	Someone to help me	Financially dependent	I feel stressed
Autonomous	Pearson	0.203**	0.156**	0.223**	0.145*	0.119*	0.194**	-0.187**	-0.145*	-0.133*
	<i>p</i> -value	0.001	0.008	0.000	0.014	0.044	0.001	0.001	0.014	0.024
	<i>N</i>	287	287	287	287	287	287	287	287	286
Intrinsic	Pearson	0.185**	0.146*	0.202**	0.141*	0.089	0.189**	-0.168**	-0.133*	-0.093
	<i>p</i> -value	0.002	0.013	0.001	0.017	0.131	0.001	0.004	0.024	0.118
	<i>N</i>	287	287	287	287	287	287	287	287	286

(Continues)

TABLE 5 | (Continued)

		Competence				Relatedness		Low autonomy			
		Confident manage	In control	Confident plan	Can figure out solution	Able to learn	Math	Someone to help me	Financially dependent	I feel stressed	I feel worried
How motivated	Pearson	0.056	-0.022	0.042	0.123*	0.063	0.005	0.096	-0.031	0.126*	0.007
	p-value	0.349	0.715	0.478	0.037	0.287	0.932	0.104	0.598	0.032	0.902
	N	287	287	287	287	287	287	287	287	287	286
Amotivation	Pearson	-0.239**	-0.179**	-0.333**	-0.122*	-0.183**	-0.209**	-0.183**	0.127*	0.121*	0.172**
	p-value	0.000	0.002	0.000	0.038	0.002	0.000	0.002	0.032	0.041	0.004
	N	287	287	287	287	287	287	287	287	287	286

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

and a weak positive association with amotivation. We find no evidence that any of our control variables are significantly related to motivation or amotivation.

5 | Discussion and Applications

Our results suggest that our Personal Finance Motivation scale has an appropriate structure and is internally consistent. The subscales are correlated with each other and with the related constructs of competence, autonomy, and relatedness in the manner predicted by SDT. Our correlation and regression analyses support hypotheses 1, 2, 3, and 4. Autonomous and intrinsic motivation to understand and manage one's personal finances are positively associated with the individual's feelings of autonomy, competence, and relatedness, and with the individual's sense of the value or importance of understanding personal finance. Amotivation to understand and manage one's personal finances is negatively associated with one's feelings of autonomy, competence, relatedness, and the importance of personal finance. We infer that people lack motivation to understand and manage their personal finances when they feel isolated, incapable, or powerless, or because they fail to appreciate the importance of personal finance.

Our finding that relatedness is associated with increased motivation to understand and manage one's personal finances dovetails with research that finds benefits from shared decision-making. For example, Warmath et al. (2019) found that shared decision-making within a marriage was associated with lower levels of overconfidence when making financial decisions. Overconfidence tends to produce negative financial outcomes (Barber and Odean 2001).

Our Personal Finance Motivation scale has broad applications across academic research, financial education, advisory services, corporate wellness programs, nonprofit organizations, and fintech companies. By assessing people's motivation to understand and manage their finances, the scale helps identify factors influencing self-determined motivation, including competence, autonomy, and relatedness. A lack of motivation can negatively impact teaching effectiveness, goal achievement, client and student retention, and overall satisfaction with financial education and services and lead to poor financial outcomes. Therefore, the scale serves as a valuable diagnostic tool, allowing educators, financial professionals, and organizations to better understand motivational barriers and develop strategies to foster engagement.

Personal finance instructors can use the scale to tailor their teaching strategies, ensuring that students not only develop financial competency but also feel prepared to apply their knowledge when they become financially independent. While personal finance courses provide opportunities to build skills and relationships with instructors and classmates, these opportunities often occur before students face real financial decisions, leaving them feeling unsupported later. Instructors can mitigate this gap by incorporating case studies that position students as independent decision-makers and by discussing when professional financial advice is beneficial and how to find a trustworthy advisor. The scale can also help instructors evaluate the effectiveness of pedagogical approaches, detecting changes in motivation over time and adjusting course strategies accordingly.

TABLE 6 | Panel A: the effects of importance, competence, relatedness, and low autonomy on self-determined motivation and amotivation, Panel B: The effects of importance, competence, relatedness, and financial dependence on self-determined motivation and amotivation.

Panel A									
	Autonomous composite			Intrinsic motivation			Amotivation		
	B	t	p-value	B	t	p-value	B	t	p-value
(Constant)	5.783	1.767*	0.078	2.066	0.918	0.360	7.799	5.470***	0.000
Importance	0.987	3.560***	0.000	0.648	3.396***	0.001	-0.244	-2.018**	0.045
Competence	1.326	3.415***	0.001	0.933	3.490***	0.001	-0.786	-4.647***	0.000
Relatedness	3.465	3.392***	0.001	2.296	3.266***	0.001	-0.966	-2.169**	0.031
Low autonomy	-0.700	-1.275	0.204	-0.319	-0.843	0.400	0.128	0.535	0.593
Gender (Female = 1)	-0.436	-0.436	0.663	-0.546	-0.793	0.428	0.007	0.015	0.988
Age	0.282	1.050	0.295	0.245	1.322	0.187	0.214	1.826*	0.069
Partnered	-1.618	-1.489	0.138	-1.267	-1.694*	0.092	-0.327	-0.691	0.490
Children dummy	-0.641	-0.553	0.581	-0.588	-0.738	0.461	-0.130	-0.258	0.797
Personal income	0.586	0.874	0.383	0.206	0.446	0.656	-0.129	-0.440	0.660
Household income	-0.511	-0.844	0.399	-0.287	-0.690	0.491	0.113	0.427	0.670
Education	-0.153	-0.550	0.583	-0.200	-1.045	0.297	-0.116	-0.961	0.337
Adj. R square	0.146			0.136			0.148		
F-value (p-value)	5.210	(<0.001)		4.871	(<0.001)		5.269	(<0.001)	
N	274			274			274		

Panel B									
	Autonomous composite			Intrinsic motivation			Amotivation		
	B	t	p-value	B	t	p-value	B	t	p-value
(Constant)	4.601	1.682*	0.094	1.744	0.926	0.355	7.923	6.669***	0.000
Importance	0.983	3.555***	0.000	0.647	3.397***	0.001	-0.249	-2.076**	0.039
Competence	1.462	4.391***	0.000	0.972	4.244***	0.000	-0.794	-5.492***	0.000
Relatedness	3.700	3.615***	0.000	2.429	3.449***	0.001	-1.043	-2.348**	0.020
Financially dependent	-2.812	-2.404**	0.017	-1.791	-2.225**	0.027	0.744	1.465	0.144
Gender (Female = 1)	-0.108	-0.109	0.914	-0.319	-0.468	0.640	-0.019	-0.044	0.965
Age	0.345	1.343	0.180	0.266	1.502	0.134	0.203	1.814*	0.071
Partnered	-1.463	-1.346	0.179	-1.151	-1.539	0.125	-0.370	-0.785	0.433
Child dummy	-0.745	-0.649	0.517	-0.622	-0.787	0.432	-0.120	-0.242	0.809
Personal income	0.363	0.534	0.593	0.045	0.097	0.923	-0.058	-0.197	0.844
Household income	-0.397	-0.656	0.513	-0.224	-0.538	0.591	0.079	0.300	0.764
Education	-0.232	-0.838	0.403	-0.253	-1.329	0.185	-0.107	-0.888	0.375
Adj. R square	0.156			0.147			0.154		
F-value (p-value)	5.571	(<0.001)		5.255	(<0.001)		5.495	(<0.001)	
N	274			274			274		

Note: In Table 6, Panel A, Low Autonomy is a construct equal to the total of the affirmative responses to the statements: "I am financially dependent on someone else;" "I feel stressed about my personal finances in general;" and "I worry about being able to pay my current monthly expenses." In this panel, the Low Autonomy construct is replaced with only the response to "I am financially dependent on someone else." Otherwise, the variables in Panels A and B of Table 6 are the same. Four respondents who chose not to disclose income and one who left the education question blank were removed from the sample used for regression analysis. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Financial advisors and planners can also benefit from the scale by assessing client motivation levels and identifying those who may require additional support, whether to strengthen financial competence, reduce feelings of isolation, or sustain engagement over time. Clients who are relatively amotivated may need structured guidance to build confidence. Other clients may exhibit introjected regulation, in which they are motivated by internal pressures such as guilt, shame, or social expectations rather than personal interest. While these individuals may initially appear engaged, their motivation may be fragile and subject to decline over time unless advisors create conditions that foster more autonomous, self-driven motivation (e.g., Pelletier et al. 2001; Proudfoot 2022; Vansteenkiste et al. 2005). The scale could help financial professionals refine their approach by identifying whether clients need more education, encouragement, or opportunities to practice financial decision-making. Additionally, personalized financial coaching could be enhanced through the use of the scale, allowing advisors to segment clients into different motivational categories and tailor interventions that foster more sustainable engagement with financial planning.

Beyond education and advisory settings, corporate wellness programs could use the scale to gauge employees' financial engagement and design targeted interventions, improving overall financial well-being and workplace productivity. Similarly, nonprofit organizations and community programs can apply the scale to identify populations with low financial motivation and develop outreach strategies that focus on increasing competence, autonomy, and support networks.

Fintech companies and financial product developers can leverage insights from the scale to segment their audience, refine user experiences, and create tools that foster engagement at different levels of financial motivation. By understanding users' motivation profiles, companies can design digital financial education programs, budgeting tools, or investment platforms that cater to individuals at varying stages of financial engagement.

The scale could also be used for program evaluation and impact measurement. Organizations running financial education or coaching programs can employ the scale to assess the effectiveness of interventions by measuring pre- and post-program motivation levels. By tracking changes over time, educators and service providers can determine whether their approaches successfully enhance motivation and adjust their methods accordingly. Instructors, advisors, and organizations could use the scale to identify stalled progress, dissatisfaction, or motivational declines, helping them refine their offerings to improve retention and long-term engagement.

For academic researchers, the scale offers a valuable tool for investigating the psychological and behavioral mechanisms underlying financial literacy and decision-making. Researchers in behavioral finance, psychology, education, and economics can use the scale to explore how different motivational profiles influence financial behaviors such as saving, investing, borrowing, and retirement planning. The scale could also help identify factors that promote or hinder long-term financial well-being, including the role of intrinsic versus extrinsic motivation in sustaining financial habits over time. Additionally, the scale provides a quantitative measure for studies examining the effectiveness

of financial literacy interventions, allowing researchers to assess whether specific educational approaches, advisory methods, or financial products meaningfully impact financial motivation. Finally, the scale can contribute to cross-disciplinary research by linking financial motivation with broader constructs such as self-efficacy, locus of control, decision-making styles, and socioeconomic factors. Comparative studies could examine how financial motivation varies across different populations, such as young adults, retirees, low-income groups, and individuals from diverse cultural backgrounds. Longitudinal research could also use the scale to track changes in motivation over time, investigating how life transitions, such as entering the workforce, marriage, or economic downturns, affect financial engagement.

6 | Conclusions and Limitations

In this paper, we present and validate a Personal Finance Motivation scale adapted from the Multidimensional Work Motivation scale from Gagné et al. (2014). We also create measures of importance, competence, relatedness, and autonomy, which SDT identifies as vital supports for motivation. Our results are consistent with the hypotheses we derived from SDT. The more self-determined types of motivation are positively associated with survey respondents' assessments of the importance of personal finance, their own competency, when they have someone to help them make financial decisions, and when they are financially independent. In contrast, amotivation to understand and manage one's personal finances is negatively associated with assessments of importance, competence, and when respondents have someone to help them make decisions.

The main limitations to our study are the small sample size, particularly with respect to the number of men who responded to the survey, our reliance on a convenience sample due to budget constraints, and wording choices in our survey. A total of 279 respondents completed the survey, with nearly five times as many women as men. This disproportionate representation may have influenced the overall results, as previous research has demonstrated that gender affects attitudes, motivations, and behaviors related to personal finance (e.g., Barber and Odean 2001; Beierlein and Neverett 2013; Beierlein et al. 2022; Chen and Volpe 2002; Cheng et al. 2011). Consequently, the findings may predominantly reflect female perspectives and may not be fully generalizable to the broader population. In unreported independent samples t-tests, we found no statistically significant differences between male and female respondents, except that female participants assigned significantly higher ratings to the introjected regulation statements, on average. This lack of significance may be due to the small number of male respondents ($N = 47$), or it may suggest that the gender imbalance had a limited impact on most outcome variables. Ethnic minorities are also underrepresented. However, our respondents are relatively diverse with respect to age, partnership status, education level, and income.

In our survey, we treated the motivation to understand one's personal finances and the motivation to manage them as a single construct. While these motivations are related, they represent distinct cognitive and behavioral processes. Understanding involves learning and gaining clarity, while managing involves

taking financial action. However, they are often closely linked in practice. For example, Di Domenico et al. (2022) have found that people who are motivated to understand their finances also tend to manage them more effectively, suggesting that these motivations are mutually reinforcing rather than independent. Still, by combining the two, we may miss some nuance, for instance, whether someone is primarily motivated by curiosity or by immediate financial pressures. Yet, because the motivations are so interrelated, we believe the impact on our overall findings is limited. Future research may benefit from teasing them apart to allow for more targeted insights.

Another limitation is the potential for measurement error that comes with self-reported data. How respondents define key terms in the survey and determine the magnitudes of their level of agreement with survey statements may differ.

Despite these limitations, our scale appears to be sound, and our results are consistent with the large body of literature that shows the importance of competency, autonomy, and relatedness in promoting motivation. Our Personal Finance Motivation scale is a diagnostic, coaching, and evaluative tool that can track changes in motivation and assess the effectiveness of financial education and services. Our findings suggest that as individuals improve financial understanding, form supportive relationships, and gain experience and confidence in making financial decisions, their autonomous motivation increases, which is likely to promote better financial literacy and long-term financial well-being.

Conflicts of Interest

The authors declare no conflicts of interest.

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Appendix A

Survey Questions

1. What is your gender?

- Male
- Female
- Other

2. What is your age?

- 24 and under
- 24–29
- 30–39
- 40–49
- 50–59
- 60 and older

3. What is your marital or partnership status?

- Married or living with a partner with joint accounts and pooled resources
- Married or living with a partner with separate accounts and resources
- Not married or living with a partner

4. How many children do you have?

- None
- 1
- 2
- 3
- 4+

5. How motivated are you to learn about personal finance topics such as budgeting, investing, retirement planning, and borrowing?

- Very unmotivated
- Slightly unmotivated
- Slightly motivated
- Very motivated

6. How important do you think personal finance is?

- Very unimportant
- Slightly unimportant
- Slightly important
- Very important

Please indicate how much you agree with the following statements with respect to this question: Why do you or why would you try to understand and manage your personal or household finances? Select Not at All, Very Little, A little, Moderately, Strongly, Very Strongly, or Completely.

- I spend time managing my finances so I can afford nicer clothes, cars, vacations, or a house.
- I will gain financial wealth only if I put enough effort into understanding and managing my finances.
- I don't try to understand and manage my finances, because I really feel that I'd be wasting my time. It is too confusing.
- I have fun learning about and managing my finances.
- Taking the time to understand and manage my finances aligns with my personal values.
- If I do not try to understand and manage my finances, I will feel ashamed of myself.
- Understanding and managing my finances has personal significance to me.
- It makes me feel proud of myself when I understand and manage my finances.
- I spend little time trying to understand and manage my finances, because I do not think it is worth putting effort into.
- If I do not try to understand and manage my finances, I will feel bad about myself.
- I try to understand and manage my finances to avoid being criticized by others (e.g., partner, family, friends, colleagues)
- I run the risk of bankruptcy or poverty if I do not put enough effort into understanding and managing my finances.
- It is interesting to learn about and manage my finances.
- I will have more financial security if I am able to understand and manage my finances.
- I try to understand and manage my finances to get the approval of my partner, family, friends, or colleagues.
- I spend time managing my finances so I can retire early.
- I have to prove to myself that I can understand and manage my finances.
- I find it exciting to learn about and manage my finances.

25. I don't know why I try to understand my finances. It's pointless.
26. I try to understand and manage my finances so I will have greater financial independence.
27. I try to understand and manage my finances because my partner, family, friends, or colleagues will respect me more.

Please select true or false for the following statements:

28. I am financially dependent on someone else.
29. I am confident that I can manage my finances.
30. I feel stressed about my personal finances in general.
31. When I think about my financial situation, I am optimistic about the future.
32. I feel in control of my finances.
33. I worry about being able to pay my current monthly expenses.
34. I am confident in my ability to plan for my financial future.
35. When faced with a financial challenge, I can figure out a solution.
36. I am not interested in finance.
37. I currently have sufficient knowledge to manage my personal finances.
38. I have a partner, family member, friend, and/or advisor available to help me when I need to make important financial decisions.
39. Knowledge of personal finance is necessary to make good financial decisions.
40. I am able to learn about and understand finance topics such as car loans when I need to.
41. Understanding personal finance is necessary to my financial well-being.
42. Bad financial decisions will negatively affect my overall well-being.
43. I am good at math.
44. I am creative.
45. I enjoy working with my hands.
46. I enjoy solving puzzles.

The following true/false questions were given to participants who selected partnered in question 3:

47. I am confident that I can manage my/our finances without my partner's help.
48. I am more knowledgeable about finances than my partner.
49. My partner is more interested in finance than I am.
50. I believe it is important that my partner and I share the responsibility of making important financial decisions.
51. It is important that I make financial decisions independently.
52. I feel comfortable leaving financial decisions up to my partner.
53. My partner is good at math.
54. My partner is creative.
55. My partner enjoys working with his/her hands.
56. My partner enjoys solving puzzles.
57. What is the highest degree or level of school you have completed?
 - a. Less than high school diploma
 - b. High school or GED
 - c. Vocational/Trade/Technical School
 - d. Attended college but did not earn a degree
 - e. Associate degree

- f. Bachelor's degree
- g. Master's degree (MA, MS, MBA, etc.)
- h. Professional degree beyond bachelor's degree (JD, MD, DDS, etc.)
- i. Doctorate degree

58. Do you have a degree in business, finance, or economics?

59. Which of these describes your personal income last year?

- a. Less than \$20,000
- b. \$20,000 to \$29,000
- c. \$30,000 to \$39,999
- d. \$40,000 to \$49,999
- e. \$50,000 to \$59,999
- f. \$60,000 to \$69,999
- g. \$70,000 to \$79,999
- h. \$80,000 to \$89,999
- i. \$90,000 to \$99,999
- j. \$100,000 to \$149,999
- k. \$150,000 or more

60. Which of these describes your household income last year?

- a. Less than \$20,000
- b. \$20,000 to \$29,000
- c. \$30,000 to \$39,999
- d. \$40,000 to \$49,999
- e. \$50,000 to \$59,999
- f. \$60,000 to \$69,999
- g. \$70,000 to \$79,999
- h. \$80,000 to \$89,999
- i. \$90,000 to \$99,999
- j. \$100,000 to \$149,999
- k. \$150,000 or more

61. What is your race?

- a. African American/Black
- b. Asian/Asian American
- c. Hispanic/Latinx
- d. Hawaiian/Pacific Islander
- e. Native American/American Indian/Alaskan Native
- f. Middle Eastern/Arab American
- g. White or European American
- h. Prefer not to disclose