Personal Emotions and Family Financial Well-Being: Applying the Broaden and Build Theory

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The purpose of this article is to show that emotions matter when predicting the financial well-being of U.S. households. The broaden and build theory **(***BBT***)** *was used to predict that positive emotions would be positively associated with financial well-being and negative emotions would be negatively associated with financial well-being. Using a convenience sample of 993 U.S. adults, emotions were found to explain the variation in family financial well-being, measured by income and net worth, of U.S. households beyond demographic variables. More specifically, feelings of contentment, love, anger, anxiety, and loneliness were found to be associated with financial well-being. Results suggest that policymakers, financial professionals, and academics should collect more data on the emotions of individuals to help explain the variation in the financial well-being of U.S. households. Results also provide evidence in support of the financial counseling industry's efforts to incorporate emotions as an important variable when modeling family financial well-being.*

Keywords: broaden and build theory, emotions, financial behavior, financial well-being, positive psychology

> *"A joyful heart is good medicine, but a crushed spirit dries up the bones."*
>
> *Proverbs 17:22 (English Standard Version).*

The timeless question, "can money buy happiness?" has been explored extensively (Boyce et al., 2010; Diener & Biswas-Diener, 2002; Diener & Oishi, 2000; Easterlin et al., 2010; King et al., 2012). Yet, given that prior literature reveals a relatively weak relationship between money and happiness when money is the independent variable and happiness is the dependent variable (Dunn et al., 2011; Easterlin et al., 2010), it may be better to ask ourselves, "can happiness lead to more money?" (Asebedo & Seay, 2015; Asebedo et al., 2020; Guven, 2012; Hill et al., 2016). The concept that happiness can lead to more money may be more appealing since it does not assume that a core measure of human flourishing, like happiness, is simply transactional, and only available to those who acquire wealth. However, this question may still cause some concern since many people see their financial and emotional life as two separate domains.

Recent developments in behavioral economics and financial therapy, however, have begun to draw significant conclusions that a person's financial and emotional life are inter-related (Asebedo, 2016; Baker & Ricciardi, 2014; Ford et al., 2020; Rasure, 2011; Whillans et al., 2016; Zeamer & Estey, 2021). For example, Ford et al. (2020) found that financial distress was improved among six couples who experienced both a financial and traditional therapy approach during marital counseling. In a sample of Greek couples, Karademas and Roussi (2017) found that financial strain impacted overall relationship satisfaction. In a clinical experiment comparing sampled people visiting marital therapists and financial counselors, Aniol and Synder (1997) found that one-third of the sampled people who entered marital therapy reported high levels of financial difficulties while one-third of the sampled people who went to a financial counselor reported high levels of general relationship distress. Given the

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inter-related nature of money and our emotions, what if the positive impact of a joyful heart (i.e., positive emotions) extend to the financial life of an individual? In addition, what if the negative impact of a crushed spirit (i.e., negative emotions) goes beyond acting as a burden to just the body, and burdens the individual's financial life, as well?

The following research question was explored in this article: do emotions increase the explanatory power when modeling the financial well-being of a household after controlling for traditional demographic predictors of financial well-being (e.g., age, race, kids)? Financial well-being is defined as their household's income and net worth. If emotions are found to be associated with financial well-being, this would encourage the collection of subjective/emotional data when seeking to improve the financial lives of U.S. households.

Literature Review, Theory, and Hypotheses

Emotions

During the 1980s, when trying to understand the nature of emotions, psychologists theorized that emotions tend to be associated with specific action tendencies (Fredrickson, 1998). For example, the emotion of anger tends to lead to an attack action, and the emotion of fear tends to lead to an escape action. Given that emotions tend to be associated with specific action tendencies, earlier theories of emotions describe the purpose of emotions as appraisal/control processes that help communicate to the body to run away if something feels bad, or to draw near when something feels good.

Earlier to this work, Simon (1967) argued that negative emotions occur as an interruption towards a certain goal structure, which would then likely lead to a certain level of disengagement, or, at the very least, a reprioritization of goals, leading to a choice of a lower valued goal. Carver and Scheier (1990) generally called this view of emotions by Simon a "control-process" view of emotions (p. 1).

During the late 20th century, the focus of emotion theories shifted from behavior to biological or evolutionary processes. Solomon (1980) adapted the control-process theory of Simon with an opponent-process theory of emotions, which argues that the body of a person who experiences an initial emotional state (state A) will automatically trigger an opposite emotional state (state B) in order to bring back "biological neutrality." This explains why emotional affective states do not last forever.

With the rising accessibility of brain scanning technology, evolutionary psychologists have been able to test their theories through observing the brain. Scientists have identified that emotions originate in the limbic system of the brain (Rolls, 2015). Since the limbic system is a highly primitive area of the brain that is fully developed at age three, the purpose of emotions must primarily have been for survival purposes. As a result, evolutionary psychologists often group emotions into three broad action tendencies: approach, avoid, or attack (Stonsey, 2016).

When critiquing the specific-action theories of emotion, Fredrickson (1998), an evolutionary psychologist, was disappointed with how they tended to not adequately explain positive emotions. For example, joy may be associated with the action of playing, or it may cause a person to rest. And the specific action tendency of the positive emotion of love is highly unpredictable and may cause a whole host of actions that many songwriters have suggested resembles mental instability (Fredrickson, 1998, p. 306). Also, when it comes to survival, these positive emotions do not seem as immediately useful as the negative emotions of fear, or anger; so most early theories of emotions tended to downplay the significance of positive emotions.

Broaden and Build Theory

In response to these limitations, Fredrickson (1998) developed the broaden and build theory (BBT), which suggests that positive emotions are not necessarily associated with urgent specific action tendencies but are associated with a *broadening* of cognitive awareness and curiosity, which then *builds* resources and skills. This building of resources and skills then creates more positive emotions, causing a positive feedback loop. In psychology, a positive feedback loop refers to a process where the outcome of an event causes more of the event to occur (Layous et al., 2017).In terms of emotions, this could be a time when experiences of an emotion increase the likelihood of experiencing it again (Layous et al., 2017). For example, the positive emotion of joy may lead a person to play, or explore, or socialize, which then creates the building of knowledge, skills, and relational resources, leading to further positive emotions of joy.

The BBT theory presumes that the experience of positive emotions causes a satisfying building of resources and skills, which then creates more positive emotions in a positive feedback loop. Given that building financial resources

and skills are likely a crucial component when constructing a person's overall well-being and flourishing (Kim et al., 2003; Lange & Byrd, 1998; Taft et al., 2013), positive emotions are hypothesized to be positively associated with financial well-being as a part of the building of enduring resources/skills for which the BBT predicts will occur in the wake of a positive emotion. The expression of positive emotions has been shown to build personal resources in the form of improved cognitive skill building (Isen et al., 1987), closer social connectedness (Hutcherson et al., 2008), and broader time horizon (Cohn & Fredrickson, 2006; Guven, 2012; Ifcher & Zarghamee, 2011). As these personal resources are built, prior literature has shown an association with positive financial well-being: cognitive skill building was shown to be required for wealth generation (Lusardi et al., 2017), social loneliness has been shown to predict lower household incomes (Chen & Chung, 2007), and time horizon has been argued as the most important aspect when making economic decisions (Dow & Jin, 2013).

These predictions presume positive emotions as the independent variable and financial well-being as the dependent variable. While it may seem more intuitive to reverse this ordering (e.g., as people gain financial well-being, they become happier), prior literature has revealed a relatively weak relationship between money and the emotion of happiness (Dunn et al., 2011; Easterlin et al., 2010). One explanation for this weakness is in the human ability to adapt, which acts to quickly diminish any emotional benefits that may occur due to higher levels of income or net worth (Myers, 2000). Anecdotally, stories in our culture of the "unhappy rich person" are quite common. Instead of trying to argue that money will make people happy, simply because they have more utility from more money, the BBT provides a different theoretical framework that feelings of happiness allow for the building of personal resources, which lead to higher sustained income and net worth since the building of personal resources produce more feelings of happiness in a positive feedback loop.

Positive Emotions and Financial Well-Being

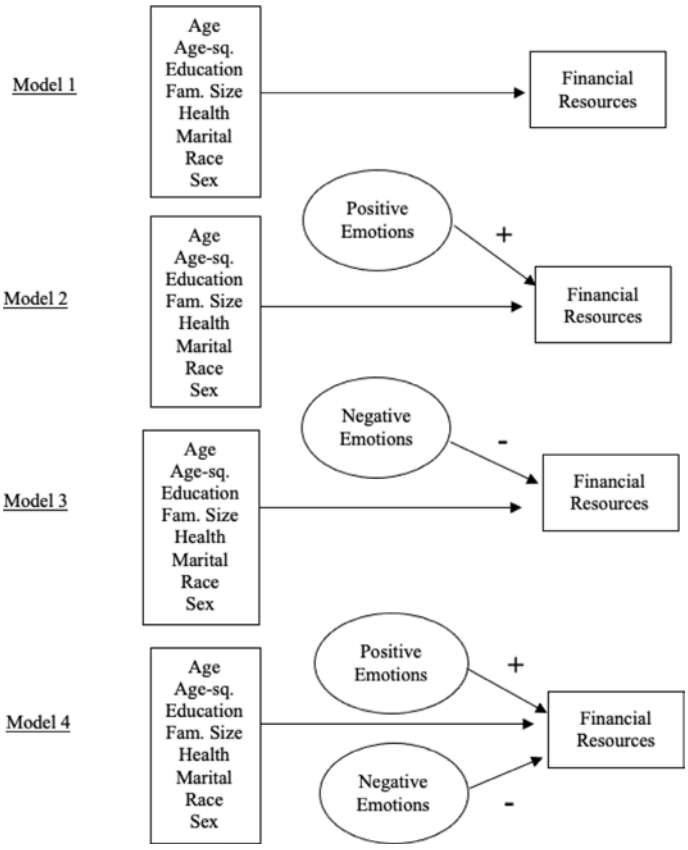
Asebedo and Seay (2015) made a theoretical argument that the practice of financial planning should incorporate concepts of positive psychology to improve financial outcomes. Positive emotions and financial outcomes have had many positive associations in previous studies. In an empirical study of households in the Netherlands, Guven (2012) found that happier people (using sunshine as an instrument for happiness) save more, spend less, and have a lower marginal propensity to consume. Economists are currently working on using smartphones' output of sleep and exercise data to measure the effect of financial policies on individuals' well-being (Muaremi et al., 2012). Lawson et al. (2019) found that individuals who felt cared for by their parents during adolescence positively predicted income during adulthood. In a longitudinal study involving two waves of 7,108 U.S. adults (1995–1996, 2004–2006), participants who reported a higher sense of purpose (a measure of eudaimonic happiness) had higher initial and subsequent household incomes and net worth (Hill et al., 2016). In a longitudinal panel study of two waves of retired Americans, Asebedo and Seay (2014) found that dispositional optimism (a proxy they used for positive emotions) predicted higher retirement satisfaction.

Negative Emotions and Financial Well-Being

Muramatsu and Hanoch (2005), referencing a control-process view of emotions, provided a theoretical argument that theories around economic decisions need to incorporate emotions (particularly negative emotions) more explicitly if they are to better understand people's financial choices. Kasser (2012) found that negative mood states have been shown to precede destructive financial behaviors. In one experiment related to negative emotions and financial well-being, when participants were made aware of their striving for identity, and how they likely fall short of their ideals, they became more materialistic and less price sensitive (Braun & Wicklund, 1989). In a survey study of three different samples of undergraduate students, participants who showed evidence of self-doubt were associated with a desire to use materialism to cope (Chang & Arkin, 2002).

Wealth has also been shown to cause destructive emotional states (Kasser, 2012; Kasser & Ahuvia, 2002). For example, clinical psychologists have long studied the "sudden wealth syndrome," where individuals experience intense negative emotional experiences associated with a dramatic increase in wealth (Kasser, 2012). In a study of business students in Singapore, a student's pursuit of materialistic goals, such as money, was associated with lower overall well-being (Kasser & Ahuvia, 2002). Kasser and Ryan (1996) argue that well-being is negatively associated with external, materialistic pursuits (e.g., money and fame) because having extrinsic goals does not lead to personal growth.

Figure 1. Structural models with predictions.



Whereas, Kasser and Ryan (1996) argue that intrinsic goals (e.g., prosocial spending and physical fitness) does lead toward a satisfying experience of a more developed, complex self. Finally, Davis and Runyan (2016) found that if an individual self-reported that they experienced more negative emotions than others (were more moody, emotional, or "testy" than others), this predicted lower overall financial satisfaction.

Given that negative emotions tend to narrow human responses and lower resources (i.e., narrow and lower) instead of broaden and build (Fredrickson, 1998), negative emotions are hypothesized to be negatively associated with financial well-being given that negative emotions are associated with the loss of important personal resources that can be associated with positive financial outcomes.

Hypotheses

The BBT predicts that positive emotions should result in improved well-being through the building of skills and resources (Fredrickson, 1998). The expression of positive emotions has been shown to build personal resources in the form of improved cognitive skill building (Isen et al., 1987), closer social connectedness (Hutcherson et al., 2008), and expanded time horizon (Cohn & Fredrickson, 2006; Guven, 2012; Ifcher & Zarghamee, 2011). Fredrickson, when formulating the BBT, also argued that negative emotions tended to narrow and contract an individual that would lead to lower resources and diminished well-being (Fredrickson, 1998). Given these relationships established by theory and previous literature, Figure 1 displays the structural models.

Given these structural models, the following hypotheses were explored in order to determine whether emotions matter when predicting the financial well-being of a U.S. household:

H1: Positive emotions are positively associated with financial well-being.

H2: Negative emotions are negatively associated with financial well-being.

Methodology

Data

This study used survey data collected at the end of 2018 by Asebedo et al. (2020). The dataset was funded by Dr. Russell James III, the CH Foundation chair of Personal Financial Planning, Texas Tech University; and the College of Human Sciences at Texas Tech University. The purpose of the collected data was to assess attitudes and intentions toward saving in a savings account, investment account, or a retirement account. Participants of the survey were recruited through Amazon's MTurk platform, which is known to provide access to a relatively low-cost, large pool of Americans that approximates the general U.S. population demographics for age and race but may not be representative when predicting religious affiliation or personality (Burnham et al., 2018).

Dependent Variable

Financial well-being was used as the dependent variable. Two measures of financial well-being were used: household income and net worth categories. For the income categories, the following question was measured from 1 (less than $20,000) to 5 (over $80,000): "What is your household annual gross income (before taxes) you use for saving and spending?" For the net worth categories, the following question was measured from 1 (less than $0) to 4 (over $250,000): "If you were to sell all your assets today and pay all of your debts, how much will you have leftover? In other words, what is your current net worth (assets—liabilities)?" Analyzing both income and net worth is consistent with a previous study that connected positive emotions with financial outcomes (Hill et al., 2016). Although these two different measures are highly correlated with each other (i.e., those with high income often have high net worth), studying income and net worth separately provides a more nuanced picture of a household's financial well-being, particularly, given that it is possible for households to be either income rich and asset poor (Sykes, 2003), or income poor and asset rich (Bradbury, 2010).

Independent Variables

Positive Emotions. Positive emotions were operationalized using measures of joy, interest, contentment, and feeling loved. Joy was measured from 0 (not at all) to 10 (always) using the following question: "In general, how often do you feel joyful?" Joy is predicted to positively impact financial well-being given a prior study that found that students with greater cheerfulness earned more money 19 years later (Diener et al., 2002). Interest was measured from 0 (not at all) to 10 (always) using the following question: "In general, to what extent do you feel excited and interested in things?" Interest is predicted to be positively associated with financial well-being given that a prior study found that heightened interest levels (i.e., flow) helped predict overall well-being (Csikszentmihalyi & Hunter, 2014). Contentment was measured from 0 (not at all) to 10 (completely) using the following question: "In general, to what extent do you feel contented?" Contentment is predicted to be positively associated with financial well-being given that a prior study found that high levels of contentment were predictive of lower materialism and greed (Cordaro et al., 2021). Feeling loved was measured from 0 (not at all) to 10 (completely) using the following question: "To what extent do you feel loved?" Feeling loved is predicted to be positively associated with financial well-being given that a prior study found that those who experienced being loved were more able to receive useful advice (Gino & Schweitzer, 2008).

These measures of positive emotions were not combined into one positive emotion scale so that the direction of each emotions' impact on financial well-being could be predicted and evaluated. Fredrickson (1998) identified joy, interest, and contentment as three "maximally distinct" emotions from one another (p. 304), and love as a triggering emotion that leads to other positive emotions (p. 306). These measurements were collected using a PERMA-Profiler tool (Butler & Kern, 2016), which provided a framework for measuring the PERMA theory of well-being (Seligman, 2018).

Regarding the use of "feeling loved" as a positive emotion, although the PERMA framework includes this emotion in the "R" (relationships) of the PERMA framework (and not the "P"), since the BBT clearly connects this emotion to the three distinct positive emotions of joy, interest, and contentment (Fredrickson, 1998, p. 304), the emotion of feeling loved was included as a distinct positive emotion in this analysis.

Negative Emotions. Negative emotions were operationalized using measures of sadness, anxiety, anger, and loneliness (see Table 1). Sadness was measured from 0 (not at all) to 10 (always) using the following question: "In

TABLE 1. Descriptive Characteristics of Variables (*n* = 993)

Variable (reference group)	*n*	%	Mean	*SD*	Min	Max
Financial well - being						
Income						
1: Less than $20,000	137	13.80				
2: $20,001–$40,000	209	21.05				
3: $40,001–$60,000	233	23.46				
4: $60,001–$80,000	171	17.22				
5: Over $80,000	243	24.47				
Net worth						
1: Less than $0	142	14.30				
2: $1–$99,999	458	46.12				
3: $100,000–$249,999	179	18.03				
4: Over $250,000	214	21.55				
Positive emotions						
Joy			6.09	2.45	0	10
Interest			6.88	2.29	0	10
Contentment			6.80	2.56	0	10
Loved			7.29	2.53	0	10
Negative emotions						
Sad			3.09	2.68	0	10
Anxious			4.29	2.87	0	10
Anger			2.48	2.29	0	10
Lonely			3.59	3.03	0	10
Control variables						
Age			37.50	10.88	18	77
Have a college degree?			0.76	0.43	0	1
Family size			2.54	1.37	1	6
Health			6.70	1.99	0	10
Male (female)			0.51	0.50	0	1
Married (other)			0.51	0.50	0	1
White (other)			0.78	0.42	0	1

general, how often do you feel sad?" Sadness is predicted to negatively impact financial well-being given a prior study that found that being sad/depressed predicted lower financial satisfaction (Rautio et al., 2013). Anxiety was measured from 0 (never) to 10 (always) using the following question: "In general, how often do you feel anxious?" Anxiety is predicted to negatively impact financial well-being given that financial anxiety has predicted lower financial satisfaction (Archuleta et al., 2013) and increased debt (Potter et al., 2020). Anger was measured from 0 (never) to 10 (always) using the following question: "In general, how often do you feel angry?" Anger is predicted to negatively impact financial well-being given prior studies have found that those who experienced anger were less able to receive useful advice (Gino & Schweitzer, 2008) and more prone to impulsive behavior (Lievaart et al., 2018), which often leads to problematic financial behavior (Rabbani et al., 2021). Loneliness was measured from 0 (not at all) to 10 (completely) using the following question: "How lonely do you feel in your daily life?" While loneliness is not necessarily a negative emotion, it may trigger negative emotions (Cramer & Barry, 1999) in the same way that

love may trigger positive emotions (Fredrickson, 1998), so it was added as a distinct negative emotion to include in this analysis. Loneliness is predicted to negatively impact financial well-being given a prior study that found that those in the lowest income group had more frequent reports of severe loneliness and having few contacts (Bosma et al., 2015).

As with positive emotions, these measures of negative emotions were not combined into one negative emotion scale so that the direction of each emotions' impact on financial well-being could be evaluated. These negative emotions measurements were collected using a PERMA-Profiler tool (Butler & Kern, 2016).

Control Variables. The control variables of age, education, family size, marital status, race, and sex have all been established before as explanatory variables for predicting income and net worth categories (Rauscher & Elliott, 2016). Education was collapsed into a single binary variable: 0 (did not graduate college) or 1 (did graduate college). Family size was measured using the following question: "Including yourself and spouse/partner (if applicable), how many people live in your household who depend on you (and/or your spouse/partner) for financial support?" Marital status was collapsed into a single binary variable: 0 (living with partner, divorced, widowed, or single/never married) or 1 (married, first marriage, or married, second marriage). Race was collapsed into a single binary variable: 0 (non-White) or 1 (White). Sex was coded as 0 (female) and 1 (male). Physical health was also added as a control variable given that prior literature has shown a strong association between physical health and financial well-being (Daly et al., 2015). Physical health was measured using a subjective measure ("In general, how would you say your health is?" 0: Terrible to 10: Excellent). Subjective physical health has been shown in prior literature to be a good proxy for objective physical health (Bourne, 2009).

Data Analyses. To test hypotheses H1 and H2, a four-model hierarchal approach was used. A Bayesian information criterion (BIC) difference test was calculated to ensure that the difference in the models was significant. A model with a lower BIC is preferred. A BIC difference test was used, as compared to a chi-square difference test, because the models that were compared were not completely nested (Kline, 2015). Finally, an ordered logit (OL) model was utilized for this analysis given that both dependent variables are scales.

Results

Descriptive Statistics

The sample consisted of 993 individuals age 18 and older (average age of 37). The majority of the sample is white (78%). Reports of feeling "loved" was the top reported positive emotion (7.3 out of 10) while reports of feeling "anxious" was the top reported negative emotion (4.3 out of 10). Average health of participants was reported as 6.70 out of 10. Forty-nine percentage of participants were female and 51% of participants were married.

Hierarchical Ordinal Logistic Results

Results of the four-model hierarchical ordinal logistic regression can be found in Tables 2 and 3. Overall, the results provide evidence that emotions are associated with financial well-being, as measured by income and net worth categories, beyond demographic factors. The ordinal logistic regression assumption of proportional odds was met using a Brant test (Brant, 1990).

Income. When looking at Table 2, model one predicts the income category of a household using traditional demographic controls of age, age-squared, education, family size, health, sex, marital status, and race. Results show that participants were more likely to have a higher income category with more education (OR = 2.23), more children (OR = 1.22), higher health (OR = 1.26), and with a married status (OR = 2.87). Using the odds ratio, this means that the odds of reporting a higher income category were 123% for those participants with an additional step in their educational achievement, 22% greater for those participants with one additional child in their family size, 26% greater for participants who reported one point higher in health status, and 187% greater for married than nonmarried participants, holding all else constant.

Model two predicts the income category of a household through adding positive emotions to traditional demographic controls. Results show that participants who reported feeling contentment were more likely to have a higher income category (OR = 1.09). Using the odds ratio, this means that the odds of reporting a higher income category were 9% higher for those who reported a one-point increase in feeling content, in general, holding all else constant. Model

TABLE 2. Ordered Logistic Regression of Income Category Variable (*n* = 993)

	Model 1			Model 2			Model 3			Model 4		
	Coef	SE	OR	Coef	SE	OR	Coef	SE	OR	Coef	SE	OR
Intercept 1	2.31	0.75	–	2.62	0.90	–	1.22	0.79	–	1.75	0.84	–
Intercept 2	3.72	0.76	–	4.05	0.75	–	2.64	0.79	–	3.19	0.84	–
Intercept 3	4.88	0.76	–	5.23	0.76	–	3.83	0.80	–	4.38	0.85	–
Intercept 4	5.82	0.77	–	6.18	0.76	–	4.78	0.81	–	5.33	0.85	–
Positive emotions												
Joy				0.03	0.04	1.03				0.03	0.04	1.02
Interest				– 0.03	0.04	0.97				– 0.03	0.04	0.97
Contentment				0.09**	0.04	1.09				0.08**	0.04	1.10
Loved				0.01	0.03	1.01				0.00	0.04	1.00
Negative emotions												
Sad							0.02	0.04	1.02	0.04	0.04	1.03
Anxious							– 0.09***	0.03	0.91	– 0.08***	0.03	0.93
Anger							– 0.00	0.04	1.00	– 0.01	0.04	0.99
Lonely							– 0.04	0.03	0.96	– 0.02	0.03	0.98
Control variables												
Age	0.06	0.03	1.06	0.06*	0.04	1.07	0.05	0.04	1.05	0.05	0.04	1.05
Age-squared	– 0.00	0.00	1.00	–0.00**	0.00	1.00	– 0.00	0.00	1.00	– 0.00*	0.00	1.00
Education	0.80***	0.14	2.23	0.77***	0.14	2.16	0.83***	0.14	2.29	0.80***	0.14	2.17
Family size	0.20***	0.05	1.22	0.18***	0.05	1.20	0.20***	0.05	1.22	0.19***	0.05	1.20
Health	0.23***	0.03	1.26	0.18***	0.03	1.20	0.20***	0.03	1.22	0.17***	0.04	1.18
Male (Female)	0.20*	0.12	1.22	0.20*	0.12	1.22	0.15	0.12	1.16	0.16	0.12	1.16
Married (Other)	1.06***	0.14	2.87	0.98***	0.14	2.66	1.09***	0.14	2.97	1.04***	0.14	2.77
White (Other)	– 0.01	0.14	0.99	– 0.01	0.14	1.01	– 0.04	0.14	0.96	– 0.01	0.15	0.97

TABLE 2. Ordered Logistic Regression of Income Category Variable (*n* = 993) *(Continued)*

	Model 1	Model 2	Model 3	Model 4
Model fit				
R^2 *McFadden (adj.)*	0.073	0.076	0.078	0.078
R^2 *Cox-Snell*	0.226	0.240	0.243	0.249
BIC	2,983	2,993	2,989	3,009
BIC diff vs. model 1	–	10 ϕϕ	6 ϕϕ	26 ϕ ϕ ϕ
BIC diff vs. model 2	– 10 ϕϕ	–	– 4 ϕ	16 ϕ ϕ ϕ
BIC diff vs. model 3	– 6 ϕϕ	4 ϕ	–	20 ϕ ϕ ϕ
BIC diff vs. model 4	– 26 ϕ ϕ ϕ	– 16 ϕ ϕ ϕ	– 20 ϕ ϕ ϕ	–

Note. The symbols ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. For BIC differences, ϕϕϕ, ϕϕ, ϕ denote very strong, strong, and positive evidence for model difference, respectively (Raftery, 1995).

TABLE 3. Ordered Logistic Regression of Net Worth Category Variable (*n* = 993)

	Model 1			Model 2			Model 3			Model 4		
	Coef	SE	OR	Coef	SE	OR	Coef	SE	OR	Coef	SE	OR
Intercept 1	1.07	0.79	–	1.04	0.80	–	1.03	0.84	–	1.30	0.89	–
Intercept 2	3.54	0.80	–	3.55	0.81	–	3.56	0.85	–	3.85	0.90	–
Intercept 3	4.52	0.80	–	4.53	0.82	–	4.56	0.85	–	4.86	0.90	–
Positive emotions												
Joy				0.04	0.04	1.04				0.03	0.04	1.03
Interest				– 0.02	0.05	0.98				– 0.02	0.05	0.98
Contentment				0.11***	0.04	1.12				0.10**	0.04	1.10
Loved				– 0.11***	0.04	0.89				– 0.07**	0.04	0.93
Negative emotions												
Sad							– 0.04	0.04	0.95	– 0.02	0.04	0.98
Anxious							– 0.11***	0.03	0.89	– 0.10***	0.03	0.90
Anger							0.17***	0.04	1.19	0.15***	0.04	1.16
Lonely							0.05*	0.03	1.06	0.06**	0.03	1.05
Control variables												
Age	0.02	0.04	1.02	0.02	0.04	1.03	0.03	0.04	1.02	0.03	0.04	1.03
Age-squared	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	– 0.00	0.00	1.00
Education	0.79***	0.14	2.21	0.75***	0.14	2.12	0.77***	0.14	2.18	0.74***	0.14	2.09
Family size	– 0.00	0.05	1.00	– 0.01	0.05	0.99	– 0.02	0.05	0.99	– 0.03	0.05	0.97
Health	0.14***	0.03	1.15	0.13***	0.03	1.14	0.13***	0.03	1.14	0.11***	0.04	1.12
Male (Female)	0.81***	0.12	2.26	0.80***	0.13	2.22	0.72***	0.13	1.94	0.72***	0.13	2.06
Married (Other)	0.66***	0.14	1.93	0.65***	0.14	1.92	0.65***	0.14	1.90	0.63***	0.15	1.89
White (Other)	– 0.25*	0.15	0.78	– 0.22	0.15	0.81	– 0.13	0.15	0.88	– 0.11	0.15	0.90

TABLE 3. Ordered Logistic Regression of Net Worth Category Variable (*n* = 993) *(Continued)*

	Model 1	Model 2	Model 3	Model 4
Model fit				
R^2 *McFadden (adj.)*	0.053	0.055	0.063	0.063
R^2 *Cox-Snell*	0.145	0.157	0.173	0.181
BIC	2,451	2,465	2,446	2,465
BIC diff. vs. model 1	–	14 ϕ ϕ ϕ	– 5 ϕ	14 ϕ ϕ
BIC diff. vs. model 2	– 14 ϕ ϕ ϕ	–	– 19 ϕ ϕ ϕ	0
BIC diff. vs. model 3	5 ϕ	19 ϕ ϕ ϕ	–	19 ϕ ϕ ϕ
BIC diff. vs. model 4	– 14 ϕ ϕ	0	– 19 ϕ ϕ ϕ	–

Note. The symbols ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. For BIC differences, ϕϕϕ, ϕϕ, ϕ denote very strong, strong, and positive evidence for model difference, respectively (Raftery, 1995).

three predicts the income category of a household through adding negative emotions to traditional demographic controls. Results show that participants who reported feeling anxious were likely to have a lower income category (OR = 0.91). Using the odds ratio, this means that the odds of reporting a higher income category were 9% lower for those who reported a one-point increase in feeling anxiety, in general, holding all else constant. Model four predicts the income category of a household through adding both positive and negative emotions to traditional demographic controls. Results show that participants who reported feeling content were more likely to have a higher income category (OR = 1.10), and participants who reported feeling anxious were less likely to have a higher income category (OR = 0.93). When looking at model fit scores, higher adjusted *r*-squared scores for models two to four show that more of the variation of financial well-being was explained when including the emotions variables as compared to model one, which only included traditional demographic variables. The statistically significant BIC difference test confirmed that all four models were distinct from each other.

Net Worth. When looking at Table 3, model one predicts the net worth category of a household using traditional demographic controls of age, age-squared, education, family size, health, sex, marital status, and race. Results show that participants were more likely to have a higher net worth category with more education, as male, higher health, and with a married status. Model two predicts the net worth category of a household through adding positive emotions to traditional demographic controls. Results show that participants who reported feeling contentment were more likely to have a higher net worth category (OR = 1.12). Quite surprisingly, participants who reported feeling loved were more likely to have a lower net worth category (OR = 0.89), which is not in support of H1. Using the odds ratio, this means that the odds of reporting higher net worth category were 12% higher and 11% lower for those who reported a one-point increase in feeling content and loved, respectively, holding all else constant.

Model three predicts the net worth category of a household through adding negative emotions to traditional demographic controls. Results show that participants who reported feeling anxious were likely to have a lower net worth category (OR = 0.89). Using the odds ratio, this means that the odds of reporting a higher net worth category were 11% lower for those who reported a one-point increase in feeling anxious. Quite surprisingly, participants who reported feeling angry or lonely were likely to have a higher net worth category, respectively (OR = 1.19 and 1.06, respectively). Using the odds ratio, this means that the odds of reporting higher net worth category were 19% and 6% higher for those who reported a one-point increase in feeling angry or lonely, respectively. Model four predicts net worth of a household through adding both positive and negative emotions to traditional demographic controls. Results show that participants who reported feeling content were more likely to have a higher net worth (OR = 1.10) and participants who reported feeling anxious were less likely to have a higher net worth category (OR = 0.90). Evidence was found in contradiction to H1 and H2 given that participants who reported feeling loved were more likely to have a lower net worth category (OR = 0.93) and participants reported feeling angry or lonely were more likely to have a higher net worth category (OR = 1.16 and 1.05, respectively). When looking at model fit scores, higher adjusted *r*-squared scores for models two to four show that more of the variation of financial well-being was explained when including emotions variables as compared to model one, which only included traditional demographic variables. The statistically significant BIC difference test confirmed that models two to four were distinct from model one.

Discussions, Limitations, and Implications

Discussions

This article explored whether emotions are associated with financial well-being after controlling for traditional demographic predictors. The BBT (Fredrickson, 1998) provided the theoretical framework for predicting that both positive and negative emotions should influence financial well-being. In support of the BBT, emotions were found to be a significant explanatory construct when explaining the financial well-being of a household. For both income and net worth, higher model fit scores show that more of the variation of financial well-being was explained when including emotions variables as compared to only including traditional demographic variables.

Regarding H1, the positive emotion of contentment was found to be positively associated with income and net worth categories. These results are consistent with Cordaro et al. (2021), which found that contentment was predictive

of good financial behaviors, such as lower materialism and lower greed. The BBT provides a different narrative than the traditional cultural narrative that more financial resources will automatically bring about higher levels of contentment. Instead, the BBT predicts that the positive emotion of contentment creates "integration, receptiveness, and increasing self-complexity that. . . broadens individual's momentary thought-action repertoires and builds personal resources" (Fredrickson, 1998, p. 306).

Quite surprisingly, participants who reported feeling loved were more likely to have lower net worth, which is not in support of hypothesis one. One explanation for this result may be that those who are feeling loved have incentives to invest in their personal relationships in such a way that lowers their overall reported net worth. This has been shown to be true in certain minority cultures who are often rich in community relations, but much less rich in net worth relative to the majority culture households (Ibarra & Rodriguez, 2006). In addition, it has been found that those who are in a financially supportive community are more likely to give their money away, which would lower their reported net worth (Enete et al., 2021).

Results provided evidence in support of hypothesis two since participants who reported feeling anxious were more likely to have lower incomes and net worth categories. These results are consistent with Chisholm et al. (2016), which found that anxiety lowers the potential income of an individual. These results are consistent with the BBT, which predicts that the negative emotion of anxiety contracts the building of personal resources (e.g., contracted time horizon, reduced cognitive abilities; Fredrickson, 1998), which are, then, associated with lower financial well-being, as predicted by H2.

However, in contradiction to H2, the negative emotions of anger and loneliness were found to be positively associated with net worth categories. One explanation for these results could be that anger is a different category of negative emotion than anxiety or sadness since it often becomes an "activating emotion" that triggers an individual toward specific action tendencies (Lerner & Tiedens, 2006). Activating emotions may create positive financial behaviors. In support of this hypothesis, Gambetti and Giusberti (2012) found that anger predicted a willingness to invest money in different kinds of stocks while anxiety predicted decisions to avoid investing and only invest in safe, interest-bearing accounts. Regarding loneliness being positively associated with net worth categories, it is harder to find a justification for this result. Wealth has been shown to facilitate social engagement, which would serve to decrease loneliness (Niedzwiedz et al., 2016). In addition, financial distress in older adults has been associated withlonelinessand isolation (Loibl, 2018). One possible explanation for this result is that loneliness has been found to be positively associated with materialism (Ang et al., 2014), which may trigger a type of constructive materialism that builds wealth to pursue materialistic endeavors. In another study, those who acquired wealth tended to isolate from others psychologically because their high status caused them to distance themselves from others out of a heightened sense of independence and competition (Greenfield, 2013).

Limitations

The traditional viewpoint that more money leads to personal happiness may cause others to view these results as endogenous since those with higher financial well-being are predicted to be associated with the positive emotion of contentment. However, a growing body of prior literature finds that money is weakly associated with happiness after a household escapes poverty (Dunn et al., 2011; Easterlin et al., 2010). Given that a majority of participants are out of Federal poverty levels of $26,500 household income as of 2021 (65% of participants have household income above $40,000 and 86% have positive net worth), it is unlikely that the relationship between financial well-being and emotions is endogenous.

The questions that were used to measure emotions required participants to self-report how often they felt certain emotions. This self-reported assessment may not represent the individual's true emotional experience, introducing issues of construct validity into this study. In addition, the measurement of income and net worth categories have been informed over a long period of time, whereas the measurement of the emotion variables will likely not match this same time of reference. This limitation was dealt with by asking the participants, "in general" how often do they feel certain emotions, thus, creating more stability in the emotion variables. Future studies would also benefit from including subjective financial well-being measures. In the current study, we utilized objective financial well-being measures, but

recently subjective well-being has had increased attention (Brüggen et al., 2017).

The ethnicity of the sample was predominately white (78%), which limits the representativeness of the sample. A convenience MTurk sample was used, which may not be fully representative of the U.S. adult population (Mortensen et al., 2018). However, certain studies have shown that MTurk convenience samples are fairly representative (Burnham et al., 2018; Huff & Tingley, 2015). In a recent meta-analytic review of three separate MTurk samples, Burnham et al. (2018) found that demographic characteristics of workers closely approximated the general U.S. population.

Implications

This article adds to the growing body of studies that provide evidence for the relationship between emotions and financial outcomes (Asebedo & Seay, 2015; Asebedo et al., 2020; Guven, 2012; Hill et al., 2016). As the results show, knowing an individual's emotional state is an important piece of the puzzle for predicting a household's income or net worth level. This has important implications for policymakers, financial planners, financial counselors, and researchers. For example, policymakers who track the anxiety and contentment levels of their constituents will more effectively model the financial well-being of those constituents. Financial planners can better predict the financial well-being of their clients through treating the emotional states of their clients as meaningful inputs in their comprehensive financial plan. These results have implications for financial counselors given that these financial professionals seek to address the emotional, interior aspects, of financial health, namely, "what clients believe about money and the way they emotionally relate to it" (Klontz et al., 2016, p. 1). These results provide support for this mission since individual emotions are shown to matter when it comes to predicting the financial well-being of family households. Finally, researchers are better able to model financial well-being through including emotion variables. A model that includes both the positive and negative emotions of an individual will explain the variation of their household's income and net worth better than a model that only includes traditional demographic variables. Building from these results, future research should explore why emotions matter when predicting financial well-being through testing for possible mediating effects of cognitive skill building, enhanced personal connections, and broadened time horizon.

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