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## Consumer Debt and Satisfaction in Life

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Life's major purchases, such as buying a home or going to college, often involve taking on considerable debt. What are the downstream emotional consequences? Does carrying debt influence consumers' general sense of satisfaction in life? Seven studies examine the relationship between consumers' debt holdings and life satisfaction, showing that the effect depends on the type of debt. Though mortgages tend to comprise consumers' largest debts, and though credit card balances tend to have the highest interest rates, we found among a diverse sample of American adults ( $N = 5,808$ ) that the type of debt most strongly associated with lower levels of life satisfaction is student loans. We further found that the extent to which consumers mentally label a given debt type as "debt" drives the emotional consequences of those debt holdings, and compared to the other debt types, student loans are perceived more as "debt." Together the findings suggest that carrying debt can spill over to undermine people's overall subjective well-being, especially when their debt is perceived as such.

### Public Significance Statement

The presence of a relationship between debt holdings and people's overall satisfaction with life depends on the type of debt held. Though mortgages tend to be largest, and credit card debt tends to have the highest interest rates, student loans have the most negative relationship to life satisfaction. These findings illuminate the interplay between people's financial and emotional well-being.

*Keywords:* financial decision making, debt, wealth, subjective well-being, life satisfaction

Consumers owe more today than ever before. In the second quarter of 2019, U.S. households together owed a total of \$13.86 trillion in debt (Federal Reserve Bank of New York, 2019), which equates to approximately \$100,000 per household. Not only is the amount owed substantial, but being indebted is widespread with 80% of Americans holding some form of debt (Pew Charitable Trusts, 2015). Though access to debt has the potential to stimulate the economy by spurring consumer spending (Ludvigson, 1999) and promoting investment in human capital (De Gregorio, 1996), high levels of debt can result in insolvency and stifle long-term economic growth (Cecchetti, Mohanty, & Zampolli, 2011). What is the impact of this large debt load on individuals? More specifically, how does holding debt influence consumers' psychological well-being?

Though minimal research has investigated the influence of debt on subjective outcomes (Tay, Batz, Parrigon, & Kuykendall,

2017), researchers from across disciplines have identified a range of observable consequences. For instance, debt is associated with an increased likelihood of divorce (Dew, 2011), reduced educational achievement (Hogan, Bryant, & Overmyer-Day, 2013), more graduates choosing public sector jobs over public interest jobs (Field, 2009; Rothstein & Rouse, 2011), increased employee burnout (West, Shanafelt, & Kolars, 2011), delayed homeownership (Bleemer, Brown, Lee, & Van der Klaauw, 2014), and postponed family formation (Addo, 2014; Bozick & Estacion, 2014). In terms of health, debt has been linked to back pain (Ochsmann, Rueger, Letzel, Drexler, & Muenster, 2009), obesity (Keese & Schmitz, 2014), doctor visits (Nettleton & Burrows, 1998), mental illnesses (Bridges & Disney, 2010; Drentea & Reynolds, 2012; Gathergood, 2012; Jenkins et al., 2008), and suicide attempts (Hatcher, 1994; Meltzer et al., 2011). Here, we look outside of these objective outcomes and explore whether debt might also influence consumers' subjective well-being, and their feelings of life satisfaction in particular. Noting that debt can take on many different forms (with mortgages, credit card balances, and student loans being the most prevalent in the United States; Bricker et al., 2017), we explored the relationship between different types of debt holdings and life satisfaction.

### The Experience of Having Debt

Although debt allows people to smooth consumption and weather difficult times (Ando & Modigliani, 1963), consumers are averse to taking on debt. This is because consumers mentally

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account for debt as losses and have a strong preference to keep their finances in the “black” rather than in the “red” (Meissner, 2016; Prelec & Loewenstein, 1998). It is this debt aversion that leads some students and their families to forgo borrowing funds for college in spite of the future career opportunities that educational attainment potentially affords (Burdman, 2005; Callender & Jackson, 2005; Callender & Mason, 2017).

Not only are consumers averse to taking on debt, they also exhibit debt aversion when managing their debts. In particular, the strategies consumers employ to repay their debts highlight their strong inclination to hold as few debts as possible. Normatively, when repaying debts, consumers should begin with those that have the highest interest rates, because compound interest is what causes debt balances to grow. Yet, rather than working toward reducing the total amount within their higher priced debts, consumers often work to reduce their total number of debts by repaying the smallest debts first (Amar, Ariely, Ayal, Cryder, & Rick, 2011; Brown & Lahey, 2015), especially when they have few debts (Besharat, Carrilat, & Ladik, 2014). Even though it is costlier not to pay down high-interest debts, consumers are more motivated to close their debt accounts (Gal & McShane, 2012) and typically concentrate repayment toward a single account (Kettle, Trudel, Blanchard, & Häubl, 2016). The debt literature nicely documents consumers’ aversion to taking on debt and the associated strategies used to repay their debt, yet it does not speak to whether and how this aversion carries over to influence consumers’ overall emotional well-being when holding debt. The current research thus examines the link between debt holdings and subjective well-being.

Subjective well-being “is defined as people’s overall evaluations of their lives and their emotional experiences” (Diener et al., 2017, p. 87). Also referred to as “happiness” by laypeople and in the literature, subjective well-being pervades people’s thoughts (Freedman, 1978) and pursuits (Diener, Suh, Smith, & Shao, 1995), and it drives consumer choice (Mogilner, Aaker, & Kamvar, 2012; Taquet, Quoidbach, de Montjoye, Desseilles, & Gross, 2016). Increased subjective well-being is a worthwhile pursuit, affording such benefits as greater perspective (Labroo & Patrick, 2009), success (Lyubomirsky, King, & Diener, 2005), health (Stone et al., 1994), and longevity (Diener & Chan, 2011). In this research, we measure subjective well-being along one of its principal components: reported satisfaction in life (Diener, Emmons, Larsen, & Griffin, 1985).

The literature documents the overarching determinants of subjective well-being as threefold (Lyubomirsky, Sheldon, & Schkade, 2005): inherited temperament (Lykken & Tellegen, 1996; Nes & Røysamb, 2015), intentional thinking and behavior (Baumeister, Vohs, Aaker, & Garbinsky, 2013; Bhattacharjee & Mogilner, 2013; Etkin & Mogilner, 2016; Labroo, Mukhopadhyay, & Dong, 2014; Mogilner, 2010), and life circumstances (Fujita & Diener, 2005; Lucas, 2007). A particularly notable life circumstance that motivates many is one’s level of wealth (Hershfield, Mogilner, & Barnea, 2016; Whillans, Weidman, & Dunn, 2016). Consequently, a large body of work has examined the relationship between wealth and subjective well-being (e.g., Aknin, Norton, & Dunn, 2009; Boyce, Brown, & Moore, 2010; Diener & Biswas-Diener, 2002; Diener, Ng, Harter, & Arora, 2010; Diener & Oishi, 2000; Diener, Sandvik, Seidlitz, & Diener, 1993; Easterlin, McVey, Switek, Sawangfa, & Zweig, 2010; Frank, 1999; Frey &

Stutzer, 2000; Kahneman & Deaton, 2010; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2006; McBride, 2001). Much of this research, however, has operationalized wealth in terms of income—even though wealth is as much a function of one’s debts as one’s assets. Appropriately, when individuals assess their own wealth, debt holdings are a key input (Greenberg, 2013; Sussman & Shafir, 2012). In this research, we thus focus on the role of debt and examine whether and how carrying debt influences subjective well-being. Building on a recent meta-analysis that documented a small negative correlation (Tay et al., 2017), we test the relationship in a larger and more diverse sample of American adults, and further examine which types of debt relate to consumers’ satisfaction with life and why.

### Perceiving Debt as “Debt”

There are different types of debt. In the United States, mortgages, credit cards, and student loans are the most prevalent (Bricker et al., 2017). Among American households, 41.9% have a mortgage, 43.9% have credit card debt, and 22.4% have student loans (Bricker et al., 2017). The prevalence of credit card debt is similar for baby boomers (41%), Generation Xers (44%), and millennials (39%), but millennials are 70% less likely to have mortgages and are 37% more likely to have student debt than members of Generation X (Pew Charitable Trusts, 2015).

Many American consumers have debt, and these debt types differ along a number of financial dimensions. Mortgage balances are typically much larger than student loan amounts and credit card balances (Pew Charitable Trusts, 2015). Credit cards (average annual percentage rate [APR] = 16% to 17%; Board of Governors of the Federal Reserve System, 2019), on the other hand, tend to have significantly higher interest rates than either mortgages (average APR = 4% to 5%; Freddie Mac, 2019) or student loans (average APR = 5.05% to 7.60%; Federal Student Aid, 2019). Given that the total amount of debt and the price of holding the debt are what determine consumers’ current and future available resources, it would be reasonable to expect that carrying debt with an especially high balance (e.g., mortgages) or an especially high interest rate (e.g., credit cards) would be most strongly tied to subjective well-being.

We propose, however, that beyond the financial attributes of these debt types, there may also be important differences in the way people think about these different types of debt (Greenberg & Hershfield, 2019a, 2019b; Greenberg, Sussman, & Hershfield, 2020; Peñaloza & Barnhart, 2011). To explore how consumers perceive these debt types, we conducted an open-ended study asking people ( $N = 98$ ; 65.3% female,  $M_{\text{age}} = 37.20$ ,  $SD = 8.75$ ; incomes \$15,000–\$150,000+;  $M_{\text{income}} = \$86,530$ ,  $SD = \$39,770$ ) with mortgages, student loans, and credit card balances to write a paragraph about each debt. A reading of participants’ responses produced an interesting insight: despite being their largest debt, some people do not view their mortgage as a debt at all. Instead, mortgages were at times described as a means to own and live in their homes, and as investments. In contrast, student loans were clearly perceived as debt and made people feel indebted. Though some viewed their education and the associated debt as worthwhile, many described their student loans as an unnecessary burden and regretted taking them on. One participant’s response highlights this key difference:

My family has a mortgage which to me really isn't debt but more of an investment. I used to feel the same about student loans until you end up having a degree but unable to find a career in your field. Then, it's just horrible debt.

Even though mortgages, credit card balances, and student loans are certainly all forms of debt, which the dictionary defines as, "That which is owed or due; anything (money, goods, or service) which one person is under obligation to pay or render to another" ("Debt," n.d.), they may vary in whether consumers perceive them as such. We examine whether debt types differ in the extent to which consumers mentally label them as "debt," as well as whether this influences the associated relationship between debt and well-being.

What are the implications for perceiving oneself as carrying debt? Research on interpersonal relationships has explored the closely related construct of indebtedness, which is defined as a "state of obligation to repay another" (Greenberg, 1980, p. 4; see also Fredrickson, 2004; Shumaker & Jackson, 1979; Watkins, Scheer, Ovnicek, & Kolts, 2006). Like gratitude, indebtedness involves being a beneficiary. However, whereas gratitude evokes positive feelings about the benefactor, indebtedness invokes the norm of reciprocity, shifting the focus toward the burden of repayment (Algoe, Gable, & Maisel, 2010; Greenberg, 1980; Tsang, 2006). Consequently, being indebted is associated with a host of negative feelings, including guilt, uncertainty, incompetence, and reduced freedom of action (Eisenberg, 1983; Fredrickson, 2004; Greenberg & Shapiro, 1971; Greenberg & Westcott, 1983; Mauss, 2002; Shumaker & Jackson, 1979; Watkins et al., 2006). Extending from the context of relationships to markets, we propose that perceiving oneself as being in debt will likely undermine one's subjective well-being.

Because feeling indebted involves a focus on repayment, debt types that heighten focus on repayment (rather than consumption) may be more subject to being mentally labeled as debt. Indeed, the schedule for payment and consumption are not always aligned, and consumers feel great pain from having to continue paying for a product when they are no longer consuming the product (Gourville & Soman, 1998; Greenberg & Hershfield, 2016; Patrick & Park, 2006; Prelec & Loewenstein, 1998; Rick, Cryder, & Loewenstein, 2008; Soman & Gourville, 2001; Xie & Shugan, 2001). This desire to synchronize payment and consumption is evident in consumer behavior. For instance, consumers prioritize paying off debts for purchases made in the distant past (Besharat, Varki, & Craig, 2015) and prefer payment options that align payments with the duration of the purchase's benefits (Auh, Shih, & Yoon, 2008; Hirst, Joyce, & Schadewald, 1994). Based on this insight, we explore whether debt types accrued for purchases that are no longer being consumed while obligation for repayment continues are more likely to be mentally labeled as debt. In particular, because student loans are necessarily paid after schooling has been completed, people may be more likely to mentally label their student loans as debt. In contrast, because mortgage holders face their mortgage payments while living in their homes, people may be less likely to mentally label their mortgages as debt. Lastly, because credit card balances are accrued for a mixture of purchase types (i.e., some for current and some for past consumption), the extent to which credit card balances will be mentally labeled as debt is unclear.

Though debt is publicly blamed as a source of financial strain (Archuleta, Dale, & Spann, 2013; Facebook IQ, 2016), and economic hardship undermines subjective well-being (Deaton, 2012), we propose that the negative influence of debt holdings on consumers' subjective well-being will depend on whether consumers mentally label that type of debt as "debt."

## Overview of Studies

We conducted seven studies to examine the relationship between consumers' debt holdings and life satisfaction for the three primary debt types: mortgages, credit card balances, and student loans. Studies 1A–D tested the relationship among diverse samples of American adults. Three subsequent studies explored the role of mentally labeling the debt as "debt." In particular, Study 2 examined the extent to which people perceive the various types of debt as "debt." Studies 3 and 4 relied on mental simulation manipulations to gain causal evidence for the observed effects. The online supplemental materials, study materials, and all of our data are available at this website: <https://osf.io/ks8m5/>. This research was approved by the Institutional Review Board at the University of California, Los Angeles.

### Studies 1A–D: Debt and Life Satisfaction by Debt Type

Four studies among different participant samples examined the relationship between consumers' three primary types of debt holdings (mortgages, credit card balances, and student loans) and life satisfaction. Here, we describe and report the studies together for the sake of brevity and extracting the key learnings from the data. The online supplemental materials contain detailed descriptions of the methods and results for each of these studies separately.

## Method

We analyzed data from a total of 5,808 adults in the United States (Study 1A:  $N = 3,793$ ; Study 1B:  $N = 494$ ; Study 1C:  $N = 985$ ; Study 1D:  $N = 536$ ). See Table 1 for detailed information about participant demographics and key financial variables across studies.

Study 1A used a publicly available dataset from Midlife in the United States, a nationally representative survey of older adults in the United States that was designed to track the nation's health and well-being over time. We analyzed the second wave of data collected in 2004–2006, which included measures of debt holdings and life satisfaction (Brim, Ryff, & Kessler, 2004). To include a younger population, in Studies 1B and 1C, we recruited participants from Amazon's Mechanical Turk. To further assess generalizability, Study 1D recruited adults through a local participant pool administered by a university behavioral lab.

Debt holdings were assessed using open-ended responses. In Study 1A, participants were asked to write the amount they owed for a series of items, including home mortgage, credit card accounts, and educational loans. In Study 1B, participants wrote their current total levels of debt (in dollars) for mortgages, credit cards, and student loans. In Study 1C, participants first indicated which of the three debt types they had and whether they were personally responsible for each's repayment, and then wrote how much they

Table 1  
Participant Demographics and Financial Information Across Studies

Demographic and financial information	Study (sample)						
	1A (MIDUS, N = 3,793)	1B (MTurk, N = 494)	1C (MTurk, N = 985)	1D (local sample, N = 536)	2 (MTurk, N = 1,008)	3 (MTurk, N = 901)	4 (MTurk, N = 603)
Income, <i>M</i>	\$71,364	\$52,936	\$53,211	\$96,183	\$61,529	\$64,512	\$65,396
Income, range	\$0–300,000+	\$0–120,000+	\$0–120,000+	\$0–200,000+	\$0–200,000+	\$0–200,000+	\$0–200,000+
Age, <i>M</i>	56.09	34.47	36.07	37.04	34.88	40.22	39.55
Age, range	32–84	18–75	18–77	18–78	18–77	19–78	19–82
% Female	55.1	37.7	47.9	66.6	58.4	47.3	47.9
% Own house	—	—	42.9	50.0	48.2	58.7	—
% Attended college	—	—	—	87.3	74.1	81.9	86.2
% Had credit card	—	—	—	86.8	87.3	84.1	—
Mortgage debt, <i>M</i>	\$65,434	\$38,038	\$37,287	\$22,533	—	—	—
% Have mortgage debt	53.9	26.7	30.3	27.6	—	42.2	—
Credit card debt, <i>M</i>	\$4,033	\$4,136	\$3,110	\$1,332	—	—	—
% Have credit card debt	54.0	53.8	60.7	36.0	—	58.6	—
Student loan debt, <i>M</i>	\$1,479	\$11,745	\$12,163	\$9,041	—	—	—
% Have student loan debt	8.3	37.2	38.5	24.4	—	32.7	33.8

Note. MIDUS = Midlife in the United States; MTurk = Amazon Mechanical Turk. Cells marked with a hyphen indicate that data were unavailable to calculate the given statistic.

owed (in dollars) for these debts. In Study 1D, participants first reported whether they owned a house, attended college, or had a credit card before completing the same measures as in Study 1C.

Subjective well-being was assessed with self-reported life satisfaction. In Study 1A, participants answered on a scale from 0 (*the worst*) to 10 (*the best*), “How would you rate your life overall these days?” (Prenda & Lachman, 2001). In Studies 1B–D, participants completed the five-item Satisfaction With Life Scale (e.g., “I am completely satisfied with my life”; 1 = *strongly disagree*, 7 = *strongly agree*; Diener et al., 1985).

## Results and Discussion

Table 2 summarizes the results of Studies 1A–D. In every study, we observed a significant negative relationship between having student loans (as well as the amount of student loans individuals had) and life satisfaction. On the other hand, the effects of mortgage debt and credit card debt were inconsistent and varied across studies.

To synthesize the results across the four studies, we computed average effect sizes (i.e., regression coefficients; Harbord & Higgins, 2008) across the correlational studies. We conducted these analyses within each debt type and across four specifications: having debt, amount of debt, without controls, and controlling for income and age (which are pertinent for debt holdings and related to life satisfaction; Baird, Lucas, & Donnellan, 2010; Kahneman & Deaton, 2010)<sup>1</sup>. The synthesized results revealed a significant negative relationship between student loan debt and life satisfaction, both for having student loan debt (estimate =  $-.37$ ,  $SE = .06$ ,  $p = .008$ ) and for the amount of student loan debt (estimate =  $-.007$ ,  $SE = .002$ ,  $p = .020$ ). Analyses controlling for income and age yielded similar results (having student loans: estimate =  $-.29$ ,  $SE = .06$ ,  $p = .016$ ; amount of student loans: estimate =  $-.006$ ,  $SE = .001$ ,  $p = .010$ ). In contrast, the results revealed a nonsignificant relationship between mortgage debt and life satisfaction across all specifications (having a mortgage: estimate =  $.47$ ,  $SE = .30$ ,  $p = .218$ ; having a mortgage with controls:

estimate =  $.27$ ,  $SE = .19$ ,  $p = .262$ ; mortgage amount: estimate =  $.002$ ,  $SE = .001$ ,  $p = .201$ ; mortgage amount with controls: estimate <  $.001$ ,  $SE < .001$ ,  $p = .305$ ). The results also yielded a nonsignificant relationship between credit card debt and life satisfaction across all specifications (having a credit card balance: estimate =  $-.10$ ,  $SE = .12$ ,  $p = .452$ ; having a credit card balance with controls: estimate =  $-.09$ ,  $SE = .09$ ,  $p = .389$ ; credit card balance amount: estimate =  $-.009$ ,  $SE = .008$ ,  $p = .334$ ; credit card balance amount with controls: estimate =  $-.009$ ,  $SE = .007$ ,  $p = .244$ ).

The results of Studies 1A–D revealed a consistent significant negative relationship between carrying debt and life satisfaction, but primarily for one type of debt: student loans. Even though mortgages tend to be the largest form of debt and credit cards tend to have the highest interest rates, we found that holding these types of debt has a small or null effect on overall satisfaction in life. Given that it does not seem to be the financial attributes of the debt types that determine their role in subjective well-being, in the next study, we investigated how consumers perceive these different debt types and the extent to which they mentally label each as “debt.”

## Study 2: Mentally Labeling Debt as “Debt”

The findings of Studies 1A–D suggest that the relationship between debt holdings and subjective well-being varies by debt type. In particular, student loans showed a consistent significant negative relationship between carrying debt and life satisfaction. To understand why the effects differ across debt types, Study 2 explored how consumers perceive mortgages, credit card balances, and student loans. The study allowed us to examine the extent to which consumers mentally label each debt type as “debt.”

<sup>1</sup> The results are substantively similar when we additionally control for being employed, married, and number of children.

Table 2  
Studies 1A–D: Summary of Results Showing Relationship Between Debt Holdings and Life Satisfaction

Debt holding	Study (sample)						Synthesized			
	1A (MIDUS, N = 3,793)		1B (MTurk, N = 494)		1C (MTurk, N = 985)		1D (local sample, N = 536)			
	Having	Amount	Having	Amount	Having	Amount	Having	Amount		
Student debt	-.45 (<.001)*	-.011 (.001)*	-.33 (.039)	-.006 (.021)*	-.25 (.020)*	-.004 (.052)*	-.46 (.001)*	-.008 (<.001)*	-.37 (.008)*	-.007 (.020)*
Control for income, age	-.29 (.003)*	-.009 (.003)*	-.42 (.007)*	-.008 (.001)*	-.25 (.025)*	-.004 (.020)*	-.25 (.058)*	-.006 (.001)*	-.29 (.016)*	-.006 (.010)*
Mortgage debt	-.04 (.375)	.000 (.641)	1.22 (<.001)*	.005 (<.001)*	.72 (<.001)*	.004 (<.001)*	.02 (.927)	-.000 (.867)	.47 (.218)	.002 (.201)
Control for income, age	.00 (.948)	-.000 (.742)	.73 (<.001)*	.002 (.016)*	.49 (<.001)*	.002 (.023)*	-.09 (.496)	-.000 (.710)	.27 (.262)	.000 (.305)
Credit card debt	-.37 (<.001)*	-.010 (<.001)*	.00 (.962)	.003 (.418)	.12 (.280)	-.005 (.507)	-.08 (.498)	-.040 (.004)*	-.10 (.452)	-.009 (.334)
Control for income, age	-.27 (<.001)*	-.008 (.005)*	-.03 (.825)	.003 (.326)	.09 (.384)	-.020 (.026)*	-.06 (.561)	-.030 (.017)*	-.09 (.389)	-.009 (.244)

Note. MIDUS = Midlife in the United States; MTurk = Amazon Mechanical Turk. Values represent unstandardized regression coefficients for debt amounts (in thousands of dollars), with life satisfaction as the dependent variable. *p* values are in parentheses.  
\* *p* < .10. \* *p* < .05.

**Method**

A sample of 1,008 adults was recruited via Amazon Mechanical Turk to complete the survey in exchange for \$1. These individuals (58.4% female) represented a range of ages (ages 18–77,  $M_{age} = 34.88$ ,  $SD = 11.21$ ) and income levels (incomes \$0–\$200,000+;  $M_{income} = \$61,529$ ,  $SD = \$42,230$ ). The target sample size (1,000) was determined before data collection began. Thirty-five additional respondents completed the survey without payment, and 27 respondents were dropped based on duplicate IP addresses.

To assess perceptions of debt among relevant debt holders, participants first indicated whether they owned a house, attended college, and/or had a credit card. If they answered “yes,” they then indicated whether they had a mortgage, student loans, or a credit card balance. If they did have the debt, they were instructed to write a paragraph about their associated “thoughts and feelings.” Note that participants could be asked to write paragraphs about zero, one, two, or all three debt types, depending on which debt types they had. The order in which they were asked about each of the three debt types was randomized.

Then, for each debt type, participants were presented with a list of items (e.g., “fair,” “reflects who you are,” “a choice you made”) and asked to rate the extent to which they perceive their mortgage/credit card balance/student loans as each (1 = *not at all*, 7 = *very much*). Among these measures was our focal item that asked participants to rate the extent to which they perceived their mortgage/credit card/student loans as “debt” (1 = *not at all*, 7 = *very much*).

**Results and Discussion**

Of the respondents in the study, 36.2% reported having mortgage debt (48.2% owned a house), 37.6% reported having student loan debt (74.1% went to college), and 72.5% reported having a credit card balance (83.0% had a credit card).

We examined the extent to which people perceive each of their debts as “debt.” Specifically, we were interested in whether perceptions varied across debt types for anyone who had a particular form of debt. We did not employ paired *t* tests for this analysis because it would select out individuals who did not also have the other debt types, which could give rise to selection issues. Therefore, we ran unpaired *t* tests, which showed that people were more likely to label their student loans as debt ( $M = 6.39$ ,  $SD = 1.10$ ) compared to credit card balances ( $M = 5.71$ ,  $SD = 1.97$ ),  $t(1102) = 6.25$ ,  $p < .001$ , and mortgages ( $M = 5.44$ ,  $SD = 1.73$ ),  $t(738) = 8.98$ ,  $p < .001$ . Mortgages were also viewed significantly less as debt than were credit card balances,  $t(1088) = 2.24$ ,  $p = .026$ .

These results provide initial evidence that some debts are mentally labeled as debt to a greater extent than others. Even though mortgages, credit card balances, and student loans all qualify as debt, people perceive student loans more as “debt” and mortgages less so.

**Study 3: Effect of Debt Type on Life Satisfaction and the Role of Perceiving Debt as “Debt”**

The results of Studies 1A–D showed that the relationship between debt and life satisfaction is a function of debt type. Specif-

ically, we observed a consistent negative relationship between debt holdings and life satisfaction for student loans—but not for mortgages or credit card balances. Study 2 then showed that more than for mortgages and credit card balances, people perceive student loans as “debt.” Though Studies 1A–D and 2 provide nice external validity by measuring participants’ actual debt holdings and their associated perceptions, the results are correlational. Given that it is infeasible to randomly assign actual debt holdings to consumers, the next study sought causal evidence by randomly assigning participants to mentally simulate having a particular form of debt and then measuring life satisfaction. Study 3 also allowed us to test whether the effect of debt holdings on life satisfaction is driven by the extent to which consumers mentally label the particular debt type as “debt.”

## Method

A sample of 901 adults was recruited via Amazon Mechanical Turk through TurkPrime (Litman, Robinson, & Abberbock, 2017) to complete the survey in exchange for \$.40. These individuals (47.3% female) represented a range of ages (ages 19–78,  $M_{\text{age}} = 40.21$ ,  $SD = 12.31$ ) and income levels (incomes \$0–\$200,000+;  $M_{\text{income}} = \$64,512$ ,  $SD = \$41,196$ ). The target sample size (900) was determined before data collection began. The hypotheses, methods, and analyses were preregistered (<https://osf.io/4je25/>), and the preregistered analysis plan was followed perfectly.

This experiment followed a 2 (Has Debt: yes, no)  $\times$  3 (Debt Type: student loans, credit card balance, mortgage) between-subjects design. All participants were instructed to imagine a scenario in which they either had debt or not. In the student loans condition, participants were told, “You attended college and [do not] currently have student loans.” Participants in the mortgage condition were told, “You own a house and [do not] currently have a mortgage.” Participants in the credit card balance condition were told, “You have a credit card and [do not] currently have a credit card balance.”

Participants then reported their life satisfaction on the five-item satisfaction with life scale (Diener et al., 1985) adapted to conditional statements (e.g., “I would be completely satisfied with my life”). To test for the role of mentally labeling the particular debt as “debt,” participants were asked to rate the extent to which they perceived student loans, a mortgage, or a credit card balance as a debt (1 = *not at all*, 7 = *very much*). To account for differences in debt amounts across debt type conditions, participants also indicated how large they imagined their given debt to be. We also included six manipulation check questions asking the extent to which participants imagined having attended college, owning a house, having a credit card, having student loans, having a mortgage, and having a credit card balance (1 = *not at all*, 7 = *very much*). Lastly, participants reported demographic and financial information including their age, gender, education, and income.

## Results and Discussion

**Manipulation checks.** The manipulation checks confirmed that participants mentally simulated their debt situation as intended. For debt type, participants in the mortgage condition ( $M = 6.42$ ,  $SD = 1.12$ ) were more likely to imagine owning a house (other:  $M = 3.96$ ,  $SD = 2.25$ ),  $t(899) = -17.77$ ,  $p < .001$ ; those

in the student loans condition ( $M = 6.29$ ,  $SD = 0.99$ ) were more likely to imagine having gone to college (other:  $M = 4.30$ ,  $SD = 2.35$ ),  $t(899) = -14.09$ ,  $p < .001$ ; and those in the credit card condition ( $M = 6.43$ ,  $SD = 1.12$ ) were more likely to imagine having a credit card (other:  $M = 4.25$ ,  $SD = 2.16$ ),  $t(899) = -16.38$ ,  $p < .001$ . For having debt, compared to participants in the no debt conditions, those in the have debt conditions were more likely to imagine having a mortgage (debt:  $M = 6.52$ ,  $SD = 0.99$ ; no debt:  $M = 3.58$ ,  $SD = 2.50$ ),  $t(297) = 13.53$ ,  $p < .001$ , student loans (debt:  $M = 6.54$ ,  $SD = 0.91$ ; no debt:  $M = 3.71$ ,  $SD = 2.40$ ),  $t(297) = 13.63$ ,  $p < .001$ , and a credit card balance (debt:  $M = 6.38$ ,  $SD = 1.26$ ; no debt:  $M = 3.43$ ,  $SD = 2.55$ ),  $t(297) = 12.67$ ,  $p < .001$ .

**Debt holdings on life satisfaction.** To test for the effect of debt holdings for each debt type on subjective well-being, we conducted a 2 (Has Debt: yes, no)  $\times$  3 (Debt Type: student loans, credit card balance, mortgage) analysis of variance (ANOVA) on life satisfaction. As predicted, the results revealed a significant main effect of having debt (debt:  $M = 5.20$ ,  $SD = 1.17$ ; no debt:  $M = 4.21$ ,  $SD = 1.41$ ),  $F(1, 895) = 132.21$ ,  $p < .001$ , and the interaction,  $F(2, 895) = 2.89$ ,  $p = .056$ . We also found a main effect of debt type,  $F(2, 895) = 5.79$ ,  $p = .003$ . Supporting the results from Studies 1A–D, the results revealed a significant negative effect of having student loan debt on life satisfaction: having student loans ( $M = 4.03$ ,  $SD = 1.28$ ) resulted in lower life satisfaction than not having student loans ( $M = 5.31$ ,  $SD = 1.09$ ),  $t(302) = 9.35$ ,  $p < .001$ . While the effects were markedly smaller than for student loans (student loan debt: Cohen’s  $d = 1.07$ , 95% confidence interval [CI: .831, 1.31]); mortgage debt: Cohen’s  $d = .668$ , 95% CI [.434, .901]; credit card balance: Cohen’s  $d = .597$ , 95% CI [.365, .829]), unlike in the previous studies, here we observed a significant negative effect of having a mortgage (debt:  $M = 4.48$ ,  $SD = 1.42$ ; no debt:  $M = 5.33$ ,  $SD = 1.11$ ),  $t(297) = 5.77$ ,  $p < .001$ , and of having a credit card balance (debt:  $M = 4.13$ ,  $SD = 1.50$ ; no debt:  $M = 4.97$ ,  $SD = 1.28$ ),  $t(296) = 5.16$ ,  $p < .001$ .

As a robustness check, we conducted a 2  $\times$  3 ANCOVA on life satisfaction, controlling for the log of how large participants imagined their given debt to be and dummy variables indicating whether participants actually had student loans, a mortgage, or a credit card balance. The results similarly showed a significant main effect of having debt,  $F(1, 891) = 85.35$ ,  $p < .001$ , a main effect of debt type,  $F(2, 891) = 6.10$ ,  $p = .002$ , and the interaction,  $F(2, 891) = 2.80$ ,  $p = .061$ . When including these controls, the strong negative effect of having student loans on life satisfaction persisted,  $F(1, 891) = 60.02$ ,  $p < .001$ . Again, there were significant but smaller effects of having a mortgage,  $F(1, 891) = 25.67$ ,  $p < .001$  and a credit card balance on life satisfaction,  $F(1, 891) = 23.98$ ,  $p < .001$ .

**Mental labeling as “debt.”** While not preregistered, to assess whether there were differences in the extent to which each debt type was mentally labeled as “debt,” we conducted a 2  $\times$  3 ANOVA on participants’ debt ratings and found a main effect of debt type,  $F(2, 895) = 12.41$ ,  $p < .001$ , having debt,  $F(1, 895) = 15.63$ ,  $p = .001$ , and an interaction,  $F(2, 895) = 2.82$ ,  $p = .060$ . Consistent with the results of Study 2, participants perceived student loans ( $M = 6.36$ ,  $SD = 1.06$ ) more as a debt than a credit card balance ( $M = 6.05$ ,  $SD = 1.41$ ),  $t(600) = 3.06$ ,  $p = .002$ , or a mortgage ( $M = 5.84$ ,  $SD = 1.40$ ),  $t(601) = 5.20$ ,  $p < .001$ . A

credit card balance was perceived more as a debt than a mortgage,  $t(595) = 1.86, p = .064$ .

We next tested whether the effect of having a particular type of debt on life satisfaction can be explained by differences in the extent to which certain debts are mentally labeled as “debt.” We thus additionally ran a moderated mediation model using debt type as the independent variable, mental labeling as debt as a mediator, having debt as the moderator, and life satisfaction as the dependent variable (PROCESS Macro for SPSS, Model 14). To run the model, we tested the effect of mortgages or credit card balances, with student loans as the comparison. A bootstrapped (10,000 resamples) model with bias-corrected confidence estimates (Preacher & Hayes, 2004) showed that mental labeling as debt mediates the effect of mortgages versus student loans (index of moderated mediation = .2167,  $SE = .0542$ , 95% CI [.1197, .3336]) and credit card balances versus student loans (index of moderated mediation = .1284,  $SE = .0475$ , 95% CI [.0451, .2299]). The moderated mediation model is depicted in Figure 1.

Building on the correlational results of Studies 1A–D and the insight from Study 2 that people view student loans more as a debt than a mortgage or a credit card balance, the results of this experiment provide (a) causal evidence for the large negative effect of carrying a particular debt type (i.e., student loans) on life satisfaction and (b) support for the underlying role of mentally labeling one’s debt holdings as “debt.”

#### Study 4: Labeling Student Loans as “Debt” or Not

The previous studies provide converging evidence showing that having student loans disproportionately hurts one’s satisfaction in life because it is this debt type that people view as “debt” to the greatest extent. Thus, having this form of debt carries the incessant cognitive and emotional burden of being indebted (Algoe et al., 2010; Eisenberg, 1983; Fredrickson, 2004; Greenberg, 1980; Greenberg & Shapiro, 1971; Greenberg & Westcott, 1983; Mauss, 2002; Shumaker & Jackson, 1979; Tsang, 2006; Watkins et al., 2006), which can undermine one’s overall satisfaction in life. However, if one were to not label this debt holding as a “debt,” having this debt should exert less of a negative effect on life satisfaction. Study 4 was designed to test this moderating role of mental labeling as “debt” within one type of debt: student loans.

#### Method

A sample of 603 adults was recruited via Amazon Mechanical Turk through TurkPrime (Litman et al., 2017) to complete the survey in exchange for \$.50. These individuals (47.9% female)

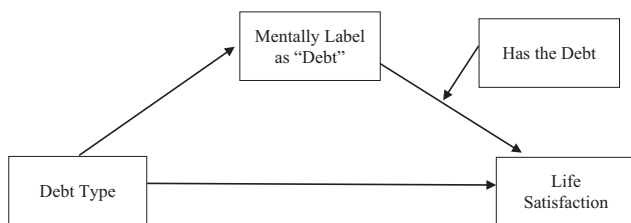


Figure 1. Study 3 effect of debt type holdings on life satisfaction moderated by having debt and mediated by perceiving the debt as “debt.”

represented a range of ages (ages 19–82,  $M_{\text{age}} = 39.55, SD = 12.22$ ) and income levels (incomes \$0–\$200,000+;  $M_{\text{income}} = \$63,596, SD = \$41,243$ ). The target sample size (600) was determined before data collection began. The hypotheses, methods, and analyses were preregistered (<https://osf.io/gpx62/>), and the preregistered analysis plan was followed perfectly.

This experiment followed a 2 (Has Debt: yes, no)  $\times$  2 (Mental Labeling as Debt: yes, no) between-subjects design. Participants were instructed to mentally simulate either having student loans or not: “Please imagine yourself in the following scenario: You attended college and [do NOT] currently have student loans.” Then, participants in the mental label as debt condition were asked to take a few minutes to write how this could make them feel indebted, whereas those in the mental label not as debt condition wrote how this could NOT make them feel indebted.

As in Study 3, participants then reported their life satisfaction on the adapted version of the five-item satisfaction with life scale (Diener et al., 1985). Participants also indicated how large they imagined the given debt to be and responded to two manipulation check questions asking the extent to which they imagined having student loans and feeling indebted (1 = *not at all*, 7 = *very much*). Lastly, participants reported demographic and financial information including their age, gender, education, and income.

#### Results and Discussion

**Manipulation checks.** The study’s manipulations were effective. Participants in the having debt condition reported having student loans ( $M = 6.30, SD = 1.11$ ) to a greater extent than those in the no debt condition ( $M = 4.31, SD = 2.40$ ),  $t(601) = 12.79, p < .001$ ; and those in the mental labeling as debt condition reported feeling more indebted ( $M = 5.92, SD = 1.63$ ) than those in the mental labeling as not debt condition ( $M = 4.87, SD = 2.25$ ),  $t(601) = 6.55, p < .001$ .

**Effects on life satisfaction.** To test whether mental labeling one’s debt as “debt” moderated the effect of having the debt, we conducted a 2  $\times$  2 ANOVA on life satisfaction. As predicted, we found a significant negative main effect of having student loan debt on life satisfaction (debt:  $M = 4.14, SD = 1.41$ ; no debt:  $M = 5.24, SD = 1.15$ ),  $F(1, 599) = 112.22, p < .001$ , a significant main effect of mental labeling the debt as debt (yes:  $M = 4.48, SD = 1.41$ ; no:  $M = 4.90, SD = 1.36$ ),  $F(1, 599) = 15.09, p < .001$ , and a significant interaction,  $F(1, 599) = 7.29, p = .007$ . Among participants who mentally labeled their student loans as “debt” (which Studies 2 and 3 suggest is typical), those who had student loans ( $M = 3.81, SD = 1.31$ ) were significantly less satisfied with life than those without student loans ( $M = 5.18, SD = 1.14$ ),  $t(307) = 9.80, p < .001$ . We also observed a negative effect of having students loans among those who were led to *not* mentally label their student loans as debt (debt:  $M = 4.49, SD = 1.43$ ; no debt:  $M = 5.31, SD = 1.16$ ),  $t(292) = 5.36, p < .001$ ; however, the size of the effect was approximately half of that in the mental label as debt condition (no debt label: Cohen’s  $d = .625, 95\% \text{ CI } [.390, .858]$ ; yes debt label: Cohen’s  $d = 1.12, 95\% \text{ CI } [.875, 1.35]$ ). Among participants who had student loans, those who mentally labeled it as debt were significantly less satisfied in life than those who did not,  $t(304) = 4.34, p < .001$ , but there was not a significant effect among those without student loan debt,  $t(295) = 0.91, p = .362$ . These results are summarized in Figure 2.



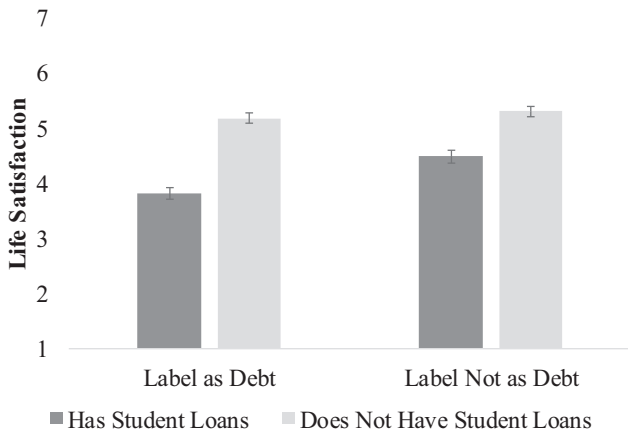


Figure 2. Study 4 mental labeling as debt moderates the effect of having student loans on life satisfaction. Mean levels of life satisfaction presented with standard error bars.

For robustness, we also conducted the  $2 \times 2$  ANCOVA on life satisfaction, controlling for the log of how large participants imagined the given debts to be and dummy variables indicating whether participants actually had student loans. The results persisted. We again found significant main effects of having student loans,  $F(1, 597) = 77.84, p < .001$  and mentally labeling student loans as debt,  $F(1, 597) = 15.55, p < .001$ , as well as an interaction,  $F(1, 597) = 6.80, p = .009$ . When including these controls, the negative effect of having debt was again larger when people mentally labeled their student loans as debt,  $F(1, 597) = 68.80, p < .001$  compared to when they were led to not mentally label their student loans as debt,  $F(1, 597) = 22.75, p < .001$ . And again, among those with student loans, mentally labeling the loans as debt had a negative effect on life satisfaction compared to not labeling their loans as debt,  $F(1, 597) = 21.81, p < .001$ , and there was no effect among those without student loans,  $F(1, 597) = 0.88, p = .349$ .

### General Discussion

Wealth and prosperity are believed to be means to greater happiness. While one aspect of wealth—income—has been widely studied (e.g., Aknin et al., 2009; Diener & Biswas-Diener, 2002; Kahneman & Deaton, 2010; Kahneman et al., 2006), an equally important input into wealth—debt—has received far less attention in the literature. With debt as a key input into people's perceptions of their wealth (Greenberg, 2013; Sussman & Shafir, 2012) and perceived financial well-being's link to overall well-being (Netemeyer, Warmath, Fernandes, & Lynch, 2018), we examined whether consumers' subjective well-being as measured by their satisfaction in life is affected by debt holdings.

Findings from seven studies demonstrated that whether and how debt relates to life satisfaction is a function of the type of debt consumers hold. Namely, consumers are less satisfied with life when carrying debts that they mentally label as "debt." Whereas consumers appropriately view their mortgage or credit card balance as debt (Studies 2 and 3). For this reason, despite representing the largest debts, mortgages are less related to consumers' satisfaction in life than student loans; and despite representing some of the costliest

debts, credit card balances are less related to consumers' satisfaction in life satisfaction than student loans (Studies 1A–D). In contrast, having student loans is reliably associated with lower levels of life satisfaction (Studies 1A–D, 3, and 4). These results highlight that the negative relationship between debt holdings and subjective well-being may be a function of the extent to which consumers mentally label that loan as a debt (Studies 2 and 3). Indeed, when the propensity to mentally label one's student loan debt as a debt was dispelled, the effect of holding that debt on life satisfaction was attenuated (Study 4). These findings build on the prior literature by showing that consumers are not only averse to taking on debt (Amar et al., 2011; Gal & McShane, 2012; Gourville & Soman, 1998; Kettle et al., 2016; Prelec & Loewenstein, 1998; Xie & Shugan, 2001), but their overall emotional well-being can suffer from having taken on debt—depending on the type of debt they have.

Thus, in line with the argument that the relationship between money and subjective well-being might have more to do with the way consumers spend their money than how much money they have (Dunn, Gilbert, & Wilson, 2011; Dunn & Norton, 2013; Mogilner & Norton, 2016), this research suggests that the relationship between debt and subjective well-being might have more to do with what consumers borrowed the money for than how much they owe.

### Theoretical Contributions

These findings make important theoretical contributions to the subjective well-being literature. The extensive research examining subjective well-being and the role of wealth has typically assessed wealth using household or personal income (e.g., Aknin et al., 2009; Diener & Biswas-Diener, 2002; Kahneman & Deaton, 2010; Kahneman et al., 2006), even though debt holdings are an equally important determinant of a person's wealth. That is, just as a dollar of income increases one's wealth by a dollar, a dollar of debt reduces one's wealth by a dollar. To further inform the field's understanding of the relationship between wealth and happiness, we identified the specific role of debt, showing whether and when this feature of financial well-being influences people's emotional well-being.

These findings broaden the scope of previous inquiries into the link between debt and stress (Adams & Moore, 2007; Bell et al., 2014; Brown, Taylor, & Price, 2005; Dew & Yorgason, 2010; Drenea, 2000; Drenea & Lavrakas, 2000; Grable & Joo, 2006; Lange & Byrd, 1998; Morra, Regehr, & Ginsburg, 2008; Norvilitis, Szablicki, & Wilson, 2003; Olson-Garriott, Garriott, Rigali-Oiler, & Chao, 2015; Tay et al., 2017) by measuring consumers' satisfaction in life more generally and by distinguishing between debt types. These findings also contribute to the debt literature by identifying and explaining the downstream emotional consequences of holding debt. Research on the psychology of debt has primarily focused on consumers' decisions associated with taking on and managing their debt (Amar et al., 2011; Gal & McShane, 2012; Kettle et al., 2016; Olson & Rick, 2014; Prelec & Loewenstein, 1998). Our findings advance this literature by identifying the nuanced ways in which debts that consumers have already accrued influence their subjective well-being. This research reveals that consumers do not necessarily view all debts as "debt," which protects them from the emotional impact. Building on research that demonstrates that labeling and mental framing matter for consumer choice (Adjerid, Acquisti, & Loewenstein, 2014; Clot,

Grolleau, & Méral, 2017; Liberman, Samuels, & Ross, 2004; Sussman & Olivola, 2011; Yang, Vosgerau, & Loewenstein, 2013), we demonstrate that the extent to which a debt is mentally labeled as a “debt” determines its impact on life satisfaction.

## Applications

This research has clear implications for people looking to improve their emotional well-being despite being saddled with large student debt. In an additional exploratory study, we examined whether focusing college graduates with student loans on the continued benefits of having gone to college might be able to offset the negative effect of having this debt. Among indebted college graduates ( $N = 399$ , 56.6% female,  $M_{\text{age}} = 33.33$ ; recruited on Amazon Mechanical Turk), we asked half to write about how they were still benefiting from having gone to their college before reporting their satisfaction in life. Those led to focus on the continued benefits of their degree reported greater life satisfaction ( $M_{\text{continued benefits}} = 4.29$ ,  $SD = 1.54$  vs.  $M_{\text{control}} = 3.87$ ,  $SD = 1.48$ ),  $t(397) = 2.77$ ,  $p = .006$ . These preliminary data suggest that institutions of higher education might better satisfy and connect with their alumni by directing attention to their graduates’ continued professional and personal benefits of having gone to the school. By aligning consumption with payment, this could minimize the labeling of one’s financial investment to have attended college as “debt” and thus reduce the far-reaching emotional burden of carrying student loans.

This research also has practical implications for how consumers can improve their satisfaction following major purchases that require debt accrual more generally. Because feeling indebted makes people feel less satisfied, people should make purchases with benefits that align with their debt repayment, and should continue to focus on the lasting benefits of that purchase. For instance, instead of choosing products that are fancier and more expensive, consumers should choose products that have better long-term value so that their debts are less likely to be mentally labeled as such.

## Limitations and Directions for Future Research

Two caveats are worthy of mention. First, the causal effects of debt on subjective well-being (Studies 3 and 4) are based on scenario studies. Because we were not able to randomly assign actual debt holdings to consumers, we cannot rule out the possibility that other omitted factors or selection effects account for the results from Studies 1A–D. Second, our samples primarily comprise consumers in the United States, which as a culture may be relatively more comfortable with various forms of debt. It is possible that in other cultures in which lending at interest is less palatable, the effect of debt on subjective well-being could be stronger or less dependent on debt type.

Future research should attempt to further unpack the determinants of the mental labeling of certain debt types as debt. In our open-ended study mentioned in the introduction, we learned that people associate feelings of debt with a lack of control, limits on autonomy, and feeling burdened or weighed down. Further examination of the psychological underpinnings of indebtedness that lead to the negative relationship between debt and subjective well-being could provide fruitful avenues for future research and the design of interventions that could make consumers more satisfied with their financial situations and lives.

## Conclusion

We inquired into whether and how debt affects subjective well-being. Results of seven studies reveal that the type of debt matters, in part because not all debts are equally perceived as “debt.” In short, the more a debt is mentally labeled as such, the more likely holding that debt will make people less satisfied with their lives. For people to achieve greater well-being, they should aim to take on debt only when they can continue (actually or perceptually) enjoying the benefits of the purchase through repayment.

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