

# **Influencing Business Student Intent to Use a Personal Budget**

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## **Abstract**

This study seeks strategies to improve college student financial behavior by examining the influence of cognitive and life cycle factors on students' intent to budget and attitude toward budgeting. Based on survey data collected from business students, attitude, subjective norm, and perceived behavioral control are significant positive influences on the intent to budget. Financial responsibility and prior financial education are positive influences on attitude toward budgeting. The results suggest that teaching students a low-effort method of budgeting and emphasizing how budgeting helps students recognize overspending may broaden the appeal of personal budgeting.

## **Introduction**

As a group, college students are not highly financially literate (e.g., Avard, Manton, & English, 2005; Chen & Volpe, 1998; Cummins, Haskell, & Jenkins, 2009). Financial education is viewed as a solution to improve financial literacy among the young. Although U.S. high schools have implemented financial literacy programs, few states require students to complete a stand-alone personal finance course (Council for Economic Education, 2014) and the long-term efficacy of such programs is mixed (e.g., Avard et al., 2005; Bernheim, Garrett, & Maki, 2001; Cole, Paulson, & Shastry, 2013; Hastings, Madrian & Skimmyhorn, 2013). For example, Mandell and Klein (2009) find no difference in spending and saving behavior between a sample of high school graduates that received financial education and a control sample. On the other hand, college students who attended personal money management classes or workshops in high school report a higher likelihood of following a personal budget, paying bills on time, contributing to savings, and having a financial plan for completing their education (The Ohio State University, 2011).

Why does financial education influence behavior for some people but not for others? Prior research suggests that both attitude about money management and motivation to retain financial knowledge are tied to the perceived importance of financial literacy (e.g., Mandell & Klein, 2007; Pritchett & Mitchell, 2011). The psychology literature indicates that intent to engage in a behavior is driven in part by attitude toward the behavior (Ajzen, 1991). Life cycle factors such as the prospect of full-time labor income and financial responsibility may drive motivation to obtain personal financial knowledge (e.g., Jappelli & Padula, 2013), and thereby may influence attitude toward engaging in beneficial financial behaviors.

This study asks if the intent to create and maintain a personal budget and attitude toward budgeting are related to cognitive and life cycle factors. We focus on budgeting as a single personal financial practice that may improve the financial well-being of college students (Gutter & Copur, 2011) but is not commonly adopted by U.S. households (Hilgert, Hogarth, & Beverly, 2003). Developing good money management skills early in life may be particularly relevant for college students who on average graduate with over \$35,000 in combined student loan, credit card, and other personal debt (Fidelity Investments, 2013). However, college students exhibit low interest in personal finance (Lyons, 2004).

In a broader context, our aim is to identify strategies to make financial education appealing to college students with the goal of improving financial behavior. Kidwell and Turrisi (2004) argue that focusing on determinants of decision-making such as intent to perform a behavior may be a viable approach to financial education. Decision-making determinants such as feelings, beliefs, perceived control over a behavior, and attitude are likely to be influenced by intervention (Armitage & Conner, 2001). Targeting influences on the intent to engage in good money management habits may enhance the effectiveness of financial education efforts.

We adopt the model in Kidwell and Turrisi (2004) and examine college student intent to budget as a function of cognitive influences including social pressure (subjective norm), past behavior, perceived control, positive and negative feelings (affects) associated with budgeting, and attitude. Since attitude is suggested as changeable, we follow Kidwell and Turrisi and separately analyze the determinants of attitude. Life cycle factors are theoretically associated with investment in financial education (Jappelli & Padula, 2013; Lusardi, Michaud, & Mitchell, 2013). We extend the Kidwell-Turrisi model of attitude and test for the independent influences of year in school, the initial stock of financial literacy, and financial dependence.

This study contributes to understanding the determinants of effective personal finance education for college students. In the context of budgeting, the empirical results suggest that an effective education strategy will emphasize how a budget can increase personal well-being, help students recognize overspending, and be easily implemented using spreadsheets or apps. Prior research suggests that financial education is more effective when targeted to specific groups (Lusardi, et al., 2013; Lusardi & Mitchell, 2014). Requiring freshmen to learn how to budget may improve well-being while in college and attitudes about money management. Seniors have relatively higher self-efficacies and better attitudes toward budgeting. Targeting seniors who want to learn how to budget may be an effective strategy.

Few studies have applied Ajzen's (1991) theory of planned behavior in a personal finance context (e.g., Croy, Gerrans, & Speelman, 2010; Kidwell, Brinberg, & Turrisi, 2003; Kidwell & Turrisi, 2004). This study provides robust support for Ajzen's theory of planned behavior, but does not strongly support the findings in Kidwell and Turrisi (2004). By extending the Kidwell-Turrisi model of attitude, we provide empirical support that life cycle factors influence attitude toward beneficial financial behavior. Students who are responsible for paying their credit card bills have a better attitude toward budgeting, and this form of financial responsibility appears to override the influence of expected income. Finally, we find that prior financial education positively influences both attitude and intent to budget and adds to the evidence that financial education early in life may stimulate interest in additional financial education and good financial practices (e.g., Lyons, 2004).

We fully acknowledge that our findings may be of limited applicability. We exclusively survey students enrolled in business courses at a private, mid-size university and examine a single personal finance topic. Business students may have a bias toward personal finance and are more likely to enroll in a personal finance course (Beierlein & Neverett, 2013). Further, students attending a private university may be less financially independent compared to students at other types of higher education institutions.

The paper continues as follows. Section 2 reviews the literature related to the intent to budget, attitude toward budgeting, life cycle influences on attitude, and develops testable hypotheses. The sampling procedure and descriptive statistics are discussed in Section 3. Section 4 describes the empirical methods for testing the hypotheses. Section 5 presents and discusses results for the main tests along with subsample results by class, financial

responsibility, and prior financial education. Section 6 concludes with insights from the analysis for delivering financial education.

### Related Literature and Hypotheses

The theory of planned behavior (TPB) (Ajzen, 1991) suggests that a person's intent to engage in a behavior or action is determined by attitude, subjective norm, and perceived control over the behavior. Attitude is a person's a priori assessment of the intended behavior that may range from bad to good, negative to positive, or similar endpoints. Subjective norm relates to a person's social pressure from family, friends, or perceived social conventions to perform the action or not. Perceived control is a person's assessment of the ease or difficulty of performing the intended action. The TPB has been tested in many different contexts with broad empirical support (e.g., Armitage & Conner, 2001; McEachan, Conner, Taylor, & Lawton, 2011; Sandberg & Conner, 2008). Although the TPB is applied most frequently in health-related contexts, several studies suggest that the TPB applies to personal finance. For example, Croy et al. (2010) provide large sample evidence that the TPB explains a significant portion of the variation in intentions to contribute additional savings for retirement. Kidwell et al. (2003) and Kidwell and Turrisi (2004) are two studies that support the TPB in a personal budgeting context.

The TPB predicts that attitude, subjective norm, and perceived control positively influence intended behavior. These relationships form the basis for our first three hypotheses about a person's intention to maintain a personal budget: budgeting intent is positively related to a positive attitude toward budgeting, social pressure to use a budget, and the perceived control over the ability to create and use a budget (H1-H3).

Kidwell and Turrisi (2004) merge the TPB with two additional cognitive constructs and suggest that budgeting intent is determined by attitude, subjective norm, perceived control, affect, and past behavior.<sup>1</sup> Some researchers argue that affect, or a person's feelings about the intended behavior, is a strong predictor of intent to perform the behavior (e.g., Sandberg & Conner, 2008; Triandis, 1977), but this is disputed in the literature (e.g., Ajzen, 2011; Ajzen & Sheikh, 2013). Kidwell et al. (2003) find a weakly significant inverse relationship between budgeting intent and responses to the statement, "It makes me feel good to have a budget of my finances" suggesting that budgeting is viewed as an unenjoyable task. Kidwell and Turrisi split affect into positive and negative feelings about budgeting. Positive affect is insignificant, but negative affect expressed as worry, concern, etc. is a strong positive influence on the intent to budget.

Similar to Kidwell and Turrisi (2004), we consider the independent influences of positive and negative affect on budgeting intent. Following Kidwell et al. (2003), positive affect is characterized as feeling good about using a budget. Casual observation suggests that the current generation of college students is motivated by positive feedback (Goudreau, 2013). Because of this influence, we predict a positive relationship between intent to budget and feeling good about using a budget (H4). Following Kidwell and Turrisi, negative affect is characterized as stress and worry about finances. The 2012 National Survey of Student Engagement reports that around 60% of both college freshmen and seniors worry about having enough money to meet regular expenses and agree that financial concerns interfere with academic performance. Joo, Durband, and Grable (2009) investigate how financial stress impacts college students who slow degree progress by either reducing course load or dropping out. Around 77% of financially strained students report worrying about debt versus 30% of non-financially strained students. Given survey evidence that college students feel stress and worry over finances and the findings in Kidwell and Turrisi, we predict that budgeting intent is positively associated with negative affect (H5).

Triandis (1977) proposes that both past behavior and intent positively influence the likelihood of performing a behavior. Past behavior dominates the influence of intent on future behavior provided that the past behavior is frequently performed or habitual, suggesting that past behavior and intent are related constructs. Ajzen (2011)

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<sup>1</sup> Kidwell and Turrisi (2004) also suggest that perceived control will moderate the influences of subjective norm and affect, but find limited support for these hypotheses in the context of personal budgeting.

argues that the three TPB determinants subsume past behavior and affect, suggesting that both factors are correlated with the three determinants of intent in his model. Several meta-analyses find that past behavior independently influences intent (e.g., McEachan et al., 2011; Ouellette & Wood, 1998; Sandberg & Conner, 2008). In a meta-analysis of health behavior studies McEachan et al. find that past behavior has a 47% mean correlation with intent and a 50% mean correlation with current behavior. However, past behavior shares a relatively low level of correlation with attitude, subjective norm, and perceived behavioral control with mean correlations ranging from 22%-33%. These results suggest that past behavior is a significant independent predictor of intended behavior. Ouellette and Wood find that frequent past behavior is more strongly associated with intended behavior in a meta-analysis of studies that examine the influence of past behavior on intent. Although most college students are not in the habit of budgeting (Kidwell & Turrisi, 2004), based on theory and empirical evidence we predict that budgeting intent is positively related to past budgeting experience (H6).

### ***Modeling Attitude toward Budgeting***

Attitude is a theoretical determinant of intent (Ajzen, 1991) with robust empirical support (e.g., Armitage & Conner, 2001). Kidwell et al. (2003) survey college students and find that attitude is the most important determinant of budgeting behavior. Kidwell and Turrisi (2004) extend this work and hypothesize that attitude toward budgeting has five determinants: structured spending, consumption saliency, undesired effort, purchase barrier, and perceived knowledge. We follow Kidwell and Turrisi and model attitude toward budgeting as a function of these five determinants. Below, we discuss each determinant and state empirical hypotheses.

A budget may be viewed as a mechanism to structure spending and may heighten awareness of potential overspending while shopping (consumption saliency). Heath and Soll (1996) and Heilman, Nakamoto, and Rao (2002) provide evidence that the majority of consumers use either a formal or mental budget when shopping. Stilley, Inman, and Wakefield (2010) hypothesize that consumers build slack into their budgets to accommodate forgotten needs or unplanned wants while on a shopping trip and find that most consumers do not overspend with a budget that includes slack. Cheema and Soman (2006) suggest that budgets both structure spending and make potential overspending more salient but individuals will seek loopholes to justify additional spending. For example, consumers do not tend to exceed the limit of a budget category (e.g., food). However, if an expenditure such as dining out fits into multiple budget categories (e.g., food and entertainment), then consumers will justify spending when one related category has slack. van Ittersum, Pennings, and Wansink (2010) find that shoppers track in-store spending primarily due to budgetary constraints. These studies suggest that budgets help to structure spending and make potential overspending more salient. We predict that attitude toward budgeting is positively related to the consumption saliency and spending limit features of a budget (H7 and H8).

Kidwell and Turrisi (2004) hypothesize and empirically support the notion that viewing budgeting as an undesired effort lowers a person's attitude toward budgeting. We have not identified other studies that model attitude as a function of undesired effort. However, attitude and effort are connected in the psychology literature. For example, Bagozzi, Yi, and Baumgartner (1990) link attitude and effort to an individual's behavior, but effort is relevant only to the intent to perform a behavior. In this theory, an individual forms an attitude about a behavior. Low-effort behaviors do not require much planning or intent to perform. However, intent becomes relevant when a task requires a relatively high effort. In Wigfield and Eccles (2000), effort is a measure of the cost required to complete a task and is itself a function of the individual's expectations and values. Studies that employ the theory in Wigfield and Eccles model attitude as positively related to the willingness to exert effort (e.g., Ramirez, Schau, & Emmioglou, 2012). Given the differing treatments of effort in the literature, we defer to Kidwell and Turrisi and predict that viewing budgeting as an undesired effort will lower a person's attitude toward budgeting (H9).

Kacen and Lee (2002) suggest that impulse buyers derive pleasure from impulse purchases and do not pay attention to the potential negative consequences. Van Doorn and Verhoef (2015) find that price consciousness is a purchase barrier for organic food. A budget may serve as a purchase barrier because budgets are thought to heighten awareness of prices (e.g., van Ittersum et al., 2010). For impulse buyers, a budget may increase price consciousness and awareness that impulse spending has potential negative consequences, thus reducing pleasure from impulse

spending. We predict that individuals who identify as impulse buyers will view a budget as a purchase barrier and therefore have a lower attitude toward budgeting (H10).

Kidwell and Turrisi (2004) hypothesize that lower perceived knowledge on how to budget improves attitude toward budgeting given that a person may desire to overcome this knowledge deficit. However, their empirical results indicate that perceived ability to budget is positively related to attitude toward maintaining a budget. Borden, Lee, Serido, and Collins (2008) find that financial knowledge is positively associated with a favorable attitude toward credit cards. Specifically, more knowledgeable students are likely to view credit card use as a path to establishing good credit, where students with relatively less financial knowledge tend to associate credit card use with negative financial consequences (e.g., bankruptcy). Kidwell et al. (2003) find a positive relationship between perceived budgeting ability and maintaining a budget. Given these empirical results, we predict that attitude toward budgeting is positively related to perceived knowledge about budgeting (H11).

### ***Life Cycle Influences on Attitude***

Jappelli and Padula (2013) and Lusardi et al. (2013) present and test life cycle models in which consumers choose optimal savings and investment in financial literacy. Both models incorporate life cycle and demographic factors that determine the path of savings and financial knowledge. Both savings and investment in financial knowledge depend on income and the initial stock of financial knowledge, among other factors. Higher income gives greater incentive to invest in financial knowledge, but a higher initial stock of financial knowledge reduces the incentive to invest. Further, both models predict that the existence of a safety net such as social security reduces the need to save and invest in financial literacy.

Income, the stock of financial knowledge, and the existence of a financial safety net may influence student attitude toward budgeting. Full-time labor force entry is imminent for many college seniors, and the prospect of earning full-time labor income may increase interest in money management. Jorgensen and Savla (2010) suggest that attitude about financial knowledge may improve with age. Extending this argument to attitude about personal budgeting as a component of financial knowledge, we hypothesize that college seniors will have a relatively better attitude about budgeting (H12). Similarly, students with prior financial education may better understand the benefits of budgeting as well as how to maintain a budget. We propose that prior financial education in high school, the military, or the workplace positively influences attitude toward budgeting (H13). A financial safety net reduces the incentive to invest in financial knowledge. Students who do not have significant financial responsibility for their expenses may have a less interest in money management and therefore a less favorable attitude toward budgeting. We propose that financial responsibility positively influences attitude toward investing in financial knowledge while in school and thereby positively influence attitude toward budgeting (H14).

### **Data Collection and Sample Description**

We collect data to test the hypotheses by surveying students enrolled in business courses at a mid-size, private university. Survey questions and response choices are in the Appendix. The survey begins with a short section that collects college level (freshman, sophomore, etc.), gender, and background information for each participant to establish formal exposure to financial education and personal financial responsibility. The financial education question asks if the student has prior personal finance education either in high school, the military, or through the workplace. The financial responsibility question asks if the student has a credit card and pays his/her own credit card bill.

Following Kidwell and Turrisi (2004), survey participants are asked to read the following definition of a personal budget and answer questions in this context to reduce subjective interpretation: "A personal budget allocates your total income (from employment, student loans, gifts, or parental support) into distinct spending categories such as rent, groceries, entertainment, etc. For each category, you estimate and track your actual spending using paper, a spreadsheet, or an app." This definition combines the budget descriptions in Kidwell and Turrisi and Wagoner (2012). The survey continues with fourteen statements thought to measure budgeting intent and related constructs.

Survey participants are asked to respond to all statements except past behavior using a 7-point scale ranging from strongly disagree=1 to strongly agree=7. The statement on past behavior asks each participant to write the number of months she or he has maintained a budget over the past six months.

Based on Kidwell and Turrissi (2004), the following statements measure budgeting intent, subjective norm, past behavior, perceived control, and attitude, respectively: "I plan or intend to use a personal budget in the future," "People who are important to me think I should use a budget," "I have maintained a budget in (0 through 6) months from April through September of this year," "I feel confident that I can create a budget without any help," and "I have a positive attitude toward using a budget for my finances." As in Kidwell et al. (2003), positive affect is measured by the response to the statement, "Sticking with a budget would make me feel good." Kidwell and Turrissi suggest that negative affect is a strong influence on budgeting intent. To investigate this finding, we use three alternative statements for negative affect: "I feel stressed when I think about my finances," "I worry about my credit card and student loan debt," and "Stress about my finances negatively affects my schoolwork."

Questions related to constructs thought to be associated with attitude follow Kidwell and Turrissi (2004). Consumption saliency, undesired effort, purchase barrier, perceived knowledge, and structured spending are measured by responses to the respective statements, "Using a budget would help me recognize overspending on things I buy," "Using a budget takes too much effort," "I buy whatever I want when I feel like it even if I don't need it," "Using a budget is difficult because I don't know how to track my spending," and "Using a budget would help me set limits on what I can spend."

#### ***Construct Validity and Reliability of the Survey Measures***

With the exception of negative affect, we employ a single-item measure of each construct. Measures of intent, attitude, perceived control, undesired effort, perceived knowledge, and structured spending use the same wording as in Kidwell and Turrissi (2004). The wording for the positive affect measure is from Kidwell et al. (2003). Kidwell et al. and Kidwell and Turrissi test and support the validity and reliability of these constructs using multiple methods. We measure the reliability of our negative affect question ("I feel stressed about my finances") with two related questions ("I worry about my credit card and student loan debt", "Stress about my finances negatively affects my schoolwork") and find a Cronbach's alpha of 0.71, suggesting that the measures are consistent.

Other items in our survey do not require reliability and validity tests. The questions for subjective norm ("People who are important to me think I should use a budget"), consumption saliency ("Using a budget would help me recognize overspending on things I buy"), and impulsivity/budget as a purchase barrier ("I buy whatever I want when I feel like it even if I don't need it") represent the constructs of interest and are therefore better represented by single-item measures (Kidwell et al., 2003). Similarly, the measures of past behavior, pays the credit card bill, and has prior financial education are objective reports by the survey participants.

#### ***Survey Protocol***

The survey is conducted with the approval of the University's Institutional Review Board. Paper surveys are distributed in 19 sections of business courses ranging from freshman to senior levels and across business specializations, as well as one business student organization to capture a broad cross-section of year in school and majors. Students are told the purpose of this research and that participation in the survey is voluntary. Students complete the survey without any further interaction with the investigators.

#### ***Sample Description***

A total of 460 students completed the survey resulting in 442 complete responses to all survey questions. Table 1 contains a description of the survey respondents. The majority of the students surveyed are male (60.6%). The sample contains 26.0% freshmen, 19.2% sophomores, 20.4% juniors, 31.7% seniors, and 2.7% graduate students. Although not tabulated, students are traditional college ages. We split the sample by credit card use and prior financial education. The majority of students (65.8%) report having a credit card, of which 60.1% are responsible for paying their credit card bill (39.6% of the full sample). Only 32.3% of students surveyed have prior financial education.

Having a credit card, paying a credit card bill, and prior financial education are classified as prior financial experience, and paying for a credit card is a form of financial responsibility. This abbreviated list may not fully reflect a survey participant's financial experience and responsibility. We disaggregate prior financial experience by college level in Table 2. Only 52.2% of freshmen report having a credit card compared to 75% of seniors and 91.7% of graduate students. Credit card bill payment responsibility increases from 23.5% of freshmen to 52.9% of seniors and 83.3% of graduate students. Prior financial education varies by class with 41.7% of freshmen, 23.5% of sophomores, 23.3% of juniors, 34.3% of seniors, and 50% of graduate students reporting prior financial education.

The first column of Table 3, Panel A displays full-sample means for budgeting intent, attitude, and their respective hypothesized determinants. Mean budgeting intent is 6.16, suggesting that the average student intends to use a budget. The average student agrees that subjective norm is an influence on using a budget and has used a budget in 2.81 of the past 6 months. The average student strongly agrees that budgeting would result in feeling good (positive affect). The average response to negative affect ranges from 3.58 to 4.78 on the 7-point scale, suggesting that the typical student is neutral to worry and stress over finances. The average student somewhat agrees that s/he is able to make a budget without help, has a somewhat positive attitude toward using a personal budget, agrees that using a budget will help to recognize overspending and set limits on spending, and somewhat disagrees that a budget is an undesired effort and a purchase barrier. Finally, the average student somewhat disagrees that using a budget is difficult because s/he does not know how to track spending.

### *Difference in Means Tests*

We examine differences in means between freshmen and seniors, pays versus does not pay credit card bill, and has versus does not have prior financial education to gain insight into how these three life cycle variables influence the determinants of intent to budget and attitude. We calculate two alternative test statistics based on equal and unequal variance assumptions and report the lower (weaker) of the two results in Table 3, Panels A and B.

Columns 2-6 of Table 3, Panel A display average responses by class. Compared to seniors, the average freshman has used a budget in fewer of the past six months, a significantly lower perceived control, a worse attitude toward budgeting, and less knowledge about tracking spending. Although not tabulated, full-sample responses for perceived control and attitude have a relatively low correlation of 0.40 (Cronbach's alpha of 0.56). This lack of correlation is pronounced for freshmen (correlation coefficient=0.34, Cronbach's alpha=0.50), but perceived control and attitude about budgeting are more strongly associated for seniors (correlation coefficient=0.60, Cronbach's alpha=0.74).

Panel B of Table 3 shows differences in means test statistics for the sample split by pays versus does not pay a credit card bill and has versus does not have prior financial education. The average student responsible for paying a credit card bill has budgeted more in the past six months, worries more about debt, has a higher perceived control, and a better attitude toward budgeting. Partitioning the sample by prior personal finance education, the average student with prior financial education has a higher intent to budget, more social pressure to budget, has budgeted more in the past six months, feels relatively better as a result of sticking with a budget, has greater perceived control, a better attitude toward budgeting, and views a budget as a way to identify overspending.

### **Empirical Methods**

We test hypotheses 1-6 by regressing the intent to maintain a personal budget (intent) on measures of subjective norm (SN), past budgeting behavior (past), positive affect (posafect), negative affect (negafect), perceived behavioral control (PBC), and attitude about personal budgeting. For each individual  $j$  in the sample, the empirical model is:

$$\text{intent}_j = b_0 + b_1 \text{SN}_j + b_2 \text{past}_j + b_3 \text{posafect}_j + b_4 \text{negafect}_j + b_5 \text{PBC}_j + b_6 \text{attitude}_j + e_j \quad (1)$$

Because Kidwell and Turrisi (2004) find a strong influence of negative affect on intent, negafect is measured in three alternative ways for robustness. The three measures of negative affect are correlated with p-values of less than

0.0001. Cronbach's alpha is 0.71, suggesting that the measures are internally consistent. In the survey questions related to eq. (1), a higher response number indicates a higher intent to budget, greater social pressure to budget, more past budgeting experience, greater positive or negative affect related to budgeting, more control over the ability to budget, and a better attitude toward budgeting. Positive and statistically significant coefficient estimates for all independent variables in eq. (1) will support hypotheses 1-6.

To test hypotheses 7-11, we estimate the coefficients from a regression of attitude toward budgeting on measures of consumption saliency (saliency), undesired effort (effort), purchase barrier (barrier), perceived knowledge (know), and structured spending (structure). For each individual  $j$ , the regression model is:

$$\text{attitude}_j = b_0 + b_1 \text{saliency}_j + b_2 \text{effort}_j + b_3 \text{barrier}_j + b_4 \text{know}_j + b_5 \text{structure}_j + e_j \quad (2)$$

Given the survey questions, a higher numbered response indicates that budgeting makes spending salient and would help set spending limits. Therefore, positive and statistically significant coefficient estimates for saliency and structure will support the related hypotheses. Higher numbered survey responses for effort, barrier, and know suggest that participants agree that budgeting is an undesired effort, creates an undesired purchase barrier, and is difficult due to lack of knowledge. Finding significant negative coefficient estimates for effort, barrier, and know will support the related hypotheses.

We hypothesize that attitude toward budgeting is related to year in school, financial responsibility, and prior financial education. We augment eq. (2) with indicator variables for senior year in college as a measure of imminent full-time labor income (1=senior, 0 otherwise), credit card payment responsibility (1=pays credit card bill, 0 otherwise), and prior financial education (1=has prior financial education, 0 otherwise) to test hypotheses 12-14. Positive and statistically significant coefficient estimates for senior, pays credit card bill, and has prior financial education will support these hypotheses.

Eqs. (1) and (2) are estimated using both generalized least squares and ordinary least squares for consistency with prior studies. The OLS standard errors are heteroscedasticity-consistent. Non-dichotomous survey responses are treated as interval data which assumes that the distance between responses is equal. We report the OLS estimates because these are slightly weaker than the GLS estimates.

## Results

Coefficient estimates for eq. (1) are displayed in Panel A of Table 4. We estimate eq. (1) using three alternative measures of negative affect and show the results in columns 1-3. In all three versions, subjective norm and positive affect are significantly positively related to budgeting intent as predicted. Past behavior, perceived control, and attitude are positively related to intent but with relatively weak statistical significance. The three alternate expressions of negative affect are insignificant. Ajzen's (1991) TPB indicates that subjective norm, perceived control, and attitude alone explain intent to perform a behavior. Results from regressing intent to budget on the original TPB variables are in column 4 of Table 4. The influence of subjective norm and perceived control are similar to the preceding columns, but attitude is now strongly positively related to budgeting intent. In untabulated results, we drop past behavior from eq. (1) and find an increase in the statistical significance of attitude. These results indicate that attitude may be correlated with past behavior and affect as suggested by Ajzen and Sheikh (2013).

The significance of positive affect and the insignificance of the three variations of negative affect differ from Kidwell and Turrisi (2004) who find the opposite results. The strong positive influence of positive affect on budgeting intent may reflect a change in the individual's motivational influence over time (Goudreau, 2013). The insignificance of negative affect may be related to the degree of financial responsibility of the survey participants. Slightly under 40% of the survey participants have credit card payment responsibility. Although our measure of financial responsibility is far from comprehensive, the majority of students surveyed are likely not highly financially



independent. Negative affect may be more of an influence on budgeting intent in a sample with greater variation in financial responsibility.

Results from regressing attitude on its hypothesized influences are presented in Panel B of Table 4. In column 1, attitude toward budgeting is significantly positively related to viewing a budget as a tool to recognize overspending. Attitude is significantly inversely related to undesired effort and lack of knowledge about how to track spending (“don’t know how” in the table). Purchase barrier and structured spending do not influence budgeting attitude. The correlation between recognition of overspending and structured spending is around 56% with a p-value of less than 0.0001 (not tabulated). We drop structured spending from the regression in column 2 and find an increase in the coefficient estimate for recognize overspending from 0.30 to 0.35 and a slight drop in the adjusted  $R^2$  from 0.24 to 0.23. In column 3, we drop the variable recognize overspending from eq. (2) and find that structured spending is a statistically meaningful explanatory variable for attitude toward budgeting. However, the regression  $R^2$  falls to 0.19. In our sample, viewing a budget as a tool to recognize overspending subsumes the explanatory power of viewing a budget as a way to help set spending limits.

We investigate the influence of life cycle factors on attitude toward budgeting by including dummy variables for senior, pays credit card, and has prior financial education in eq. (2). The sample proportions in Table 2 suggest that financial responsibility and college class are highly correlated, where one variable may be sufficient for the other in explaining the variation in attitude. Correspondingly, the dummy variable for senior class is not significant when included in eq. (2) and reduces the explanatory power of pays credit card, so we drop the senior indicator variable from the analysis. By estimating eq. (2) without the indicator variable for senior, pays credit card and has prior financial education are significant positive influences on attitude toward budgeting as shown in column 4 of Table 4, Panel B.

### ***Subsample Results***

To better understand the determinants of attitude by life cycle attributes, we estimate eq. (2) in subsamples including freshman and senior class, pays and does not pay credit card, and has and does not have prior financial education. For these regressions, we omit spending limits since recognizing overspending is sufficient for this variable. Except for the freshman subsample, the results are repetitive of those in column 2 of Table 4, Panel B and are therefore not tabulated. Across all subsamples except for freshmen, recognizing overspending, viewing budgeting as an undesired effort, and lack of knowledge about tracking spending are significant influences on attitude toward budgeting. In the freshman subsample, viewing budgeting as a way to recognize overspending is the only significant explanatory variable for attitude. The subsample adequately controls for the influences of undesired effort and lack of knowledge about budgeting on attitude toward budgeting.

In summary, we find support for Ajzen’s (1991) TPB hypotheses that attitude, subjective norm, and perceived control are significant positive influences on intent in the context of budgeting (H1-H3). Augmenting Ajzen’s original model with past behavior and affect weakens these results. Positive affect is a significant positive influence on intent as predicted (H4) but is correlated with attitude in our sample. The hypothesis for negative affect is not supported (H5). Frequent past behavior is predicted to be a relatively stronger influence on intent. The full-sample mean for past behavior indicates that budgeting is relatively habitual. The regression results weakly support the notion that past behavior positively influences intent (H6). Further, including past behavior reduces the explanatory power of attitude, supporting Ajzen and Sheikh (2013).

We do not find robust support for the model of attitude in Kidwell and Turrisi (2004). Our data support the predictions for consumption saliency (H7), undesired effort (H9), and perceived knowledge (H11). Against prediction, consumption saliency dominates the influence of spending limits (H8). Undesired purchase barrier is insignificant (H10). Finally, life cycle considerations matter to attitude toward budgeting, but are manifested in financial responsibility and experience with personal finance through prior education and not year in college, supporting H13 and H14 but not H12.

## Conclusions

This study examines how psychological and life cycle factors influence budgeting intent and attitude toward budgeting for a sample of students enrolled in business courses. We find that expectations by parents or significant others to budget and feeling good because of budgeting (positive affect) are significant positive influences on the intent to budget, as predicted. However, attitude toward budgeting and positive affect are related constructs. Past budgeting experience and perceived behavioral control are weakly associated with intent, but negative affect is not significant. The insignificance of negative affect and the strong significance of positive affect differ from the findings in Kidwell and Turrisi (2004), perhaps reflecting a generational shift in motivation or financial independence.

The results from a separate analysis of attitude toward budgeting suggest that emphasizing the benefits of budgeting for recognizing overspending, presenting budgeting as a low-effort activity, and showing students how to budget may improve attitude toward budgeting. Life cycle factors of financial responsibility and prior financial education are independent positive influences on attitude toward budgeting.

Compared to seniors, the average freshman has a worse attitude toward budgeting, views budgeting as an undesired effort, and has lower knowledge of how to track spending. Exposing freshmen to budgeting, explaining the benefits of using a budget to recognize overspending, and demonstrating the simplicity of budgeting with spreadsheets or apps to dispel the notion of undesired effort may improve their attitudes toward budgeting. Voluntary workshops offered to college seniors may be a more effective financial education strategy given the relatively high self-efficacy of this group. The results of this study suggest that exposing all students to financial education may improve attitudes about money management.

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## Appendix

**Survey on Personal Budgeting**

**Circle the responses** that best describes your background (it's okay to be honest; your answers will be confidential and anonymous):

1. My university level is: Freshman Sophomore Junior Senior Graduate student
2. I am: Female Male Other
3. I had personal finance education in high school, the military, or at work. Yes No
4. My credit card bill is paid by: Me Parent Other Don't have a credit card
5. I have a student loan Yes No

Consider the following statements as they relate to the definition of a personal budget given below. Circle the response that best reflects your opinion of each statement:

**A personal budget allocates your total income (from employment, student loans, gifts, or parental support) into distinct spending categories such as rent, groceries, entertainment, etc. For each category, you estimate and track your spending. Spending for each category is recorded using paper, a spreadsheet, or an app.**

1. I plan or intend to use a personal budget in the future

*Strongly disagree      Disagree      Somewhat disagree      Neutral      Somewhat agree      Agree      Strongly agree*

2. People who are important to me think I should use a budget

*Strongly disagree      Disagree      Somewhat disagree      Neutral      Somewhat agree      Agree      Strongly agree*

3. I have maintained a budget in \_\_\_\_ months from April through September of this year.

0	1	2	3	4	5	6
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4. Sticking with a budget would make me feel good.

*Strongly disagree      Disagree      Somewhat disagree      Neutral      Somewhat agree      Agree      Strongly agree*

5. I feel stressed when I think about my finances.

*Strongly disagree      Disagree      Somewhat disagree      Neutral      Somewhat agree      Agree      Strongly agree*

6. I worry about my credit card and student loan debt.

*Strongly disagree      Disagree      Somewhat disagree      Neutral      Somewhat agree      Agree      Strongly agree*

7. Stress about my finances negatively affects my schoolwork.

- |  | <i>Strongly disagree</i> | <i>Disagree</i> | <i>Somewhat disagree</i> | <i>Neutral</i> | <i>Somewhat agree</i> | <i>Agree</i> | <i>Strongly agree</i> |
|--|--------------------------|-----------------|--------------------------|----------------|-----------------------|--------------|-----------------------|
| 8. I feel confident that I can create a budget without any help.               |                          |                 |                          |                |                       |              |                       |
|  | <i>Strongly disagree</i> | <i>Disagree</i> | <i>Somewhat disagree</i> | <i>Neutral</i> | <i>Somewhat agree</i> | <i>Agree</i> | <i>Strongly agree</i> |
| 9. I have a positive attitude toward using a budget for my finances.           |                          |                 |                          |                |                       |              |                       |
|  | <i>Strongly disagree</i> | <i>Disagree</i> | <i>Somewhat disagree</i> | <i>Neutral</i> | <i>Somewhat agree</i> | <i>Agree</i> | <i>Strongly agree</i> |
| 10. Using a budget would help me recognize overspending on things I buy.       |                          |                 |                          |                |                       |              |                       |
|  | <i>Strongly disagree</i> | <i>Disagree</i> | <i>Somewhat disagree</i> | <i>Neutral</i> | <i>Somewhat agree</i> | <i>Agree</i> | <i>Strongly agree</i> |
| 11. Using a budget takes too much effort.                                      |                          |                 |                          |                |                       |              |                       |
|  | <i>Strongly disagree</i> | <i>Disagree</i> | <i>Somewhat disagree</i> | <i>Neutral</i> | <i>Somewhat agree</i> | <i>Agree</i> | <i>Strongly agree</i> |
| 12. I buy whatever I want when I feel like it even if I don't need it.         |                          |                 |                          |                |                       |              |                       |
|  | <i>Strongly disagree</i> | <i>Disagree</i> | <i>Somewhat disagree</i> | <i>Neutral</i> | <i>Somewhat agree</i> | <i>Agree</i> | <i>Strongly agree</i> |
| 13. Using a budget is difficult because I don't know how to track my spending. |                          |                 |                          |                |                       |              |                       |
|  | <i>Strongly disagree</i> | <i>Disagree</i> | <i>Somewhat disagree</i> | <i>Neutral</i> | <i>Somewhat agree</i> | <i>Agree</i> | <i>Strongly agree</i> |
| 14. Using a budget would help me set limits on what I can spend.               |                          |                 |                          |                |                       |              |                       |
|  | <i>Strongly disagree</i> | <i>Disagree</i> | <i>Somewhat disagree</i> | <i>Neutral</i> | <i>Somewhat agree</i> | <i>Agree</i> | <i>Strongly agree</i> |
| 15. I want to learn more about (check all that apply):                         |                          |                 |                          |                |                       |              |                       |
| <input type="checkbox"/> Making and using a budget                             |                          |                 |                          |                |                       |              |                       |
| <input type="checkbox"/> Managing my credit card debt                          |                          |                 |                          |                |                       |              |                       |
| <input type="checkbox"/> Managing my student loans                             |                          |                 |                          |                |                       |              |                       |

Table 1  
*Sample Description*

	N	% Sample
Full sample	442	
Female	174	39.4
Male	268	60.6
Credit card usage		
Has credit card	291	65.8
Pays credit card	175	39.6
Prior financial education		
Has prior fin. ed.	143	32.3
Year in school		
Freshman	115	26.0
Sophomore	85	19.2
Junior	90	20.4
Senior	140	31.7
Graduate	12	2.7



Table 2

*Financial Experience by University Level*

	Has Credit Card			Pays Credit Card		Has Prior Fin. Ed.	
	N	n	n/N	n	n/N	n	n/N
Freshman	115	60	52.2%	27	23.5%	48	41.7%
Sophomore	85	53	62.3%	28	32.9%	20	23.5%
Junior	90	62	68.9%	36	40.0%	21	23.3%
Senior	140	105	75.0%	74	52.9%	48	34.3%
Graduate	12	11	91.7%	10	83.3%	6	50.0%

Table 3  
*Sample Means*  
*Panel A: Full sample and by class*

	Full Sample	Freshman	Sophomore	Junior	Senior	Grad	Difference in Means (Freshman v. Senior)	
N	442	115	85	90	140	12	t	p-value
Budgeting intent	6.16	6.25	5.87	6.11	6.26	6.67	-0.03	0.9726
Subjective norm	5.65	5.97	5.38	5.29	5.76	5.92	1.18	0.2381
Past behavior	2.81	2.33	2.67	2.59	3.25	5.00	-3.12	0.0020
Positive affect	5.92	5.99	5.72	5.74	6.04	6.67	-0.38	0.7011
Negative affect 1	4.78	4.73	4.74	4.82	4.83	4.67	-0.47	0.6361
Negative affect 2	3.92	3.97	3.95	3.80	3.89	4.58	0.30	0.7611
Negative affect 3	3.58	3.40	3.56	3.62	3.73	3.25	-1.42	0.1582
Perceived control	5.15	4.81	5.12	5.06	5.49	5.42	-3.78	0.0002
Attitude	5.64	5.57	5.54	5.44	5.84	6.25	-2.00	0.0465
Recognize overspending	6.10	6.17	6.00	5.84	6.24	6.50	-0.58	0.5648
Undesired effort	3.16	3.15	3.29	3.20	3.07	3.17	0.43	0.6699
Undesired barrier	3.11	3.22	3.28	2.86	3.09	3.08	0.66	0.5072
Don't know how	2.81	3.05	2.91	2.89	2.56	2.33	2.61	0.0097
Help set limits	5.96	6.13	5.63	5.82	6.04	6.58	0.76	0.4501

*Panel B: By credit card bill payment and prior financial education*

	Pays credit card	Does not pay or does not have credit card	Difference in means (pays v. no pay or card)		Has prior fin. ed.	No prior fin. ed.	Difference in means (fin. ed. v. no fin. ed.)	
N	175	267	t	p-value	143	299	t	p-value
Budgeting intent	6.18	6.15	0.3	0.7655	6.41	6.05	3.13	0.0018
Subjective norm	5.65	5.65	0.03	0.9790	5.95	5.51	3.26	0.0012
Past behavior	3.43	2.40	4.45	<.0001	3.13	2.66	1.96	0.0509
Positive affect	6.03	5.85	1.69	0.0927	6.12	5.83	2.71	0.0071
Negative affect 1	4.75	4.80	-0.33	0.7413	4.58	4.88	-1.71	0.0880
Negative affect 2	4.39	3.61	3.99	<.0001	3.92	3.92	-0.03	0.9730
Negative affect 3	3.68	3.51	0.96	0.3364	3.62	3.56	0.3	0.7646
Perceived control	5.40	4.99	3.03	0.0026	5.36	5.05	2.14	0.0327
Attitude	5.83	5.52	2.93	0.0036	5.93	5.51	3.95	<.0001
Recognize overspending	6.19	6.04	1.58	0.1157	6.25	6.03	2.33	0.0200
Undesired effort	3.05	3.24	-1.36	0.1748	3.15	3.17	-0.09	0.9296
Undesired barrier	3.05	3.15	-0.63	0.5319	3.05	3.14	-0.56	0.5781
Don't know how	2.74	2.87	-0.88	0.3797	2.65	2.89	-1.55	0.1215
Help set limits	5.96	5.94	0.24	0.8105	6.08	5.88	1.92	0.0551

Table 4

*Regression Results for Intent to Budget**Panel A: Dependent variable is intent to budget*

	(1)		(2)		(3)		(4)	
	Estimate	t	Estimate	t	Estimate	t	Estimate	t
Intercept	1.67	3.90	1.55	3.50	1.72	4.18	2.17	6.00
Subjective norm	0.36	6.25	0.35	6.38	0.36	6.37	0.41	7.19
Past behavior	0.04	1.78	0.04	1.77	0.04	1.97		
Positive affect	0.26	4.14	0.25	3.96	0.26	4.10		
Negative affect 1	-0.01	-0.44						
Negative affect 2			0.01	0.59				
Negative affect 3					-0.03	-1.16		
Perceived control	0.06	1.69	0.07	1.82	0.06	1.71	0.07	1.87
Attitude	0.11	1.82	0.12	1.96	0.10	1.73	0.23	4.25
Adj. R <sup>2</sup>		0.41		0.41		0.41		0.36

*Panel B: Dependent variable is attitude toward budgeting*

	(1)		(2)		(3)		(4)	
	Estimate	t	Estimate	t	Estimate	t	Estimate	t
Intercept	4.23	8.55	4.47	8.84	5.16	12.67	4.42	8.87
Overspending	0.30	3.38	0.35	4.89			0.33	4.69
Undesired effort	-0.12	-2.96	-0.12	-3.07	-0.14	-3.37	-0.13	-3.17
Purchase barrier	-0.04	-1.16	-0.04	-1.24	-0.04	-1.06	-0.04	-1.23
Don't know how	-0.15	-4.78	-0.15	-4.81	-0.15	-4.50	-0.14	-4.61
Help set limits	0.09	1.29			0.24	4.25		
Pays credit card							0.19	2.13
Has prior fin. ed.							0.29	3.38
Adj. R <sup>2</sup>		0.24		0.23		0.19		0.25