Millersville University of Pennsylvania

# Financial Management in College: How Personality, Education, and Family Affect Budgeting

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**ABSTRACT**

This study examines the association between whether a college student has a budget and their personality (conscientiousness and neuroticism), family, and education. Prior literature supports each factor, showing some level of association with general financial literacy. This study more specifically addresses budgeting, a sub-component of financial literacy. The sample consists of 80 students attending Millersville University during the Fall 2024 semester and pursuing a degree through the Lombardo College of Business. Each respondent was given a brief survey addressing factors in association with budgeting, composed of Likert scale questions, open-ended questions, and yes/no questions. A binary logistic regression of the survey responses shows that, of the independent variables, conscientiousness and involvement in family financial decisions are significantly associated with budgeting. Further, a t-test reveals that prior education is impactful in assessing if a student has a budget, and a Chi Square test provides additional support for the impact of involvement in family financial decisions on budgeting. The results of this study may provide direction and clarity for lawmakers, school administrators, and legal guardians in promoting the budgeting habits of younger generations.

Keywords: budgeting, financial literacy, personality, family, education

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## INTRODUCTION

Personal finance is a crucial part of anyone's well-being, but people are very hesitant to discuss finances, even with those that are most important in their lives. For example, in Fidelity's 2021 Couples & Money Study, 25% of survey respondents, individuals in married or long-term committed relationships, fail to discuss their finances with their partner at least monthly (Fidelity Investments, 2021). Finances are often a point of strain on relationships, and people avoid discomfort by eliminating discussion all together. Currently, the financial state in the United States is a concern with residents facing debilitating levels of debt, limited savings, and insufficient disposable income. According to the US Census Bureau, about 30% of individuals find it somewhat difficult or very difficult to pay for usual household expenses (US Census Bureau, 2024). Budgeting is essential for financial wellness and may combat some of the financial difficulties that threaten many Americans today.

This study investigates the factors that influence whether someone has a budget. The sample of the study comes from students enrolled in the Lombardo College of Business at Millersville University. Variables of interest include students' personality, family environment, and education. Prior literature has shown that each of these variables are associated with personal finance whether that be through budgeting habits, investment knowledge, credit management, or other personal finance-related topics. The study expands on prior research, drawing connections between the given predictor variables and a specific area of personal finance, budgeting. Following the review of literature, methodology is presented, followed by results and then the discussion, highlighting the important findings relevant to key stakeholders.

## REVIEW OF LITERATURE

### Introduction

As defined by Kidwell & Turrisi (2004) in their study titled, *An Examination of College Student Money Management Tendencies*, budgeting is the act of "allotting all or part of a person's total financial resources into distinct categories in order to track expenses against a tangible (electronic or manual) monetary forecast" (Kidwell & Turrisi, 2004, p. 602). For the purposes of this study, the same definition of budgeting will be applied. Budgeting is an organized way for an individual to not only track his or her spending but also assign spending limits. This often allows for savings, debt management, and retirement planning.

Personal finance continues to be a topic that challenges many people. According to the US Census Bureau Debt Tables, the average total household debt for those with a bachelor's degree as of 2020 is $149,800. This includes a variety of demographics and life stages, but it is a telling statistic when considering current college students pursuing bachelor's degrees. As an additional statistic, according to a study conducted by College Finance (2021), college students have more than $3,280 of credit card debt on average. Further, the same study finds that 64.8% of college students have some form of credit card debt, regardless of the amount (College Finance, 2021). It is crucial that college students understand their debt, including car loans, mortgages, or student loans, so that they may pay it down using a budget. With reduced debt, a student may have a higher quality of life, and this has been supported by studies by Lunt & Livingstone (2002) and Kidwell & Turrisi (2004), among others.

A budget is the foundation for good personal financial decisions and habits because it brings students a heightened level of awareness of where their money is sourced and spent each month. Therefore, to meet any kind of financial goal, a budget is critical.

**The Five-Factor Model of Personality**

The five-factor model of personality is a framework constructed by Goldberg (1990), and it is composed of five main trait dimensions that act to distinguish individuals from one another and highlight the variability of human nature. These “Big Five” dimensions include extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience (Soto, 2020). C.J. Soto compiles a variety of journals and studies, taking a deeper look into the “Big Five” personalities. To understand the impact that someone’s personality has on whether he or she has a budget, it is important to understand each of the five factors. A key consideration for the five-factor model is that each personality runs on a continuum. People can exhibit traits falling on both ends of the trait dimension spectrum, so it is critical to understand that people cannot be isolated to one aspect of a trait. Despite this consideration, the five-factor model remains a valuable tool for assessing someone’s personality.

Extraversion highlights someone’s inclinations to interact with others confidently. Soto (2020) explains that individuals with higher levels of extraversion are assertive and sociable, and their counterparts are quieter and more reserved. Agreeableness is reflected in people that are more cooperative and find more ease with working in groups (Soto, 2020). Less agreeable individuals, on the other hand, are more antagonistic and aloof. Conscientiousness is exhibited in task-focused, organized individuals, rather than distracted, disorderly individuals (Soto, 2020). Those who are more prone to feeling negative emotions like anxiety and irritation are more neurotic (Soto, 2020). The final trait dimension, openness to experience, is observed in individuals who have a broad range of interests and prefer spontaneity (Soto, 2020). Each of these dimensions work to profile individuals, and when considered together, they offer great insights into someone’s behaviors.

Many studies, including Ashton & Lee's *A Theoretical Basis for the Major Dimensions of Personality* (2001) and Denissen & Penke's *Motivational Individual Reaction Norms Underlying the Five-Factor Model of Personality: First Steps Towards a Theory-Based Conceptual Framework* (2008) have provided support, showing that conscientiousness represents engagement with intellectual goals. This is an important consideration when applying psychology to finance. Budgeting is the tangible form of someone's financial goals, and conscientiousness has been associated with budgeting (Donnelly et al., 2011). Donnelly et al. continues this discussion, explaining that materialistic goals such as the acquisition of tangible goods drive financial personality (2011). Further, a study called *Higher-order factors of the Big Five* by John Digman (1997) proposes that socialization experiences play a role in developing conscientiousness and neuroticism, indicating the evolving nature of someone's personality. This is another key consideration especially given the demographic of this study: college students.

Common measures for the five-factor model of personality include the NEO Personality Inventory (NEO PI-3), the NEO Five-Factor Inventory (NEO-FFI-3), the International Personality Item Pool (IPIP), and the Big Five Inventory-2 (BFI-2) (Soto, 2020). Personality is difficult to assess due to the subject's inherent biases. Paulhus & Oliver (1998) cite egoistic and moralistic biases both affecting the validity of the Big Five self-ratings. Egoistic bias affects extraversion and openness while moralistic bias impacts perceptions of agreeableness and conscientiousness (Paulhus & Oliver, 1998). Often, it is important to observe personality for maximum reliability, depending on the scope of a study.

Throughout someone's lifetime, it is assumed that their personality will evolve. Bleidorn et al. (2009) finds that personality changes are influenced by both genetic and environmental influences. Caspi et al. (2005) and Roberts et al. (2008) both discuss personality structure and the way it changes across adulthood. Other studies focus more deeply on gaining a greater understanding of individual trait dimensions. Donnellan & Lucas (2008), Roberts et al. (2006), Srivastava et al. (2003), and Terracciano et al. (2005) all find that conscientiousness peaks in middle age. This is an important note because if it is true, college students, the target demographic for this study, may not be as apt to start budgeting now as their personalities are not yet developed for it. Roberts et al. (2006), Srivastava et al. (2003), and Terracciano et al. (2005) also find that neuroticism decreases with age. Thus, this decrease would promote better budgeting. Similarly, Qamar et al. (2016) synthesizes that a positive relationship between age and saving is supported by numerous studies. A study by Siegfried and Wuttke (2021) more generally investigates the relationship between demographic characteristics and financial literacy. The study is composed of 206 individuals from various educational backgrounds and ethnic groups, and it finds that age is a significant predictor of budgeting (Siegried & Wuttke, 2021, p. 7). These points can be considered in conjunction with the five-factor model of personality, seeing that conscientiousness increases with age and neuroticism decreases with age, both factors supporting better budgeting.

**i. Conscientiousness**

Jackson & Brent (2017) further expands the definition of conscientiousness, defining the trait dimension as someone's inherent ability to be responsible for themselves and others, hardworking, and rule abiding. Conscientiousness is a unique trait dimension, and it has not been observed in many nonhuman species as found in Gosling & John's 1999 cross-species review. Across two 16-week studies, Hudson & Fraley (2015) find that an individual's goals predict his or her personality change. Therefore, students can be better budgeters and overcome debt if they clearly define their goals, which will mold their personality. If personality is an inhibitor to someone keeping a budget, this study acts as an encouragement, and it eliminates the excuses that students may make for not keeping a budget.

Conscientiousness has been tied to budgeting in assorted studies. Specifically, Donnelly et al. (2011) finds that highly conscientious individuals do a respectable job of managing their money because they have a positive financial attitude and are future focused. Of the Big Five, conscientiousness and neuroticism are statistically significant in their correlation to money management (Donnelly et al., 2011). Money management is relevant, being tied to increased savings, reduced debt, and more calculated behavior (Donnelly et al., 2011). In three studies, Donnelly et al. concludes that conscientiousness is the most important Big Five trait dimension when predicting money management (2011). Further, the study concludes that “money management…is the most significant predictor of financial well-being” (Donnelly et al., 2011, p. 1138). This study offers support for the relevance of budgeting, and therefore, it explains why the Big Five’s influence on budgeting is important to consider.

Like Donnelly, Elgeka et al. (2018) conducts a study on students from Indonesia and China to connect conscientiousness to mental budgeting, considering money attitude. Mental budgeting explains the way that “[individuals] separated their expenditure categories into the budget, did the saving after spending the money and maintained the saving for the future month after spending in this month” (Elgeka et al., 2018, p. 28). Elgeka et al. finds that, among Indonesian students from the age of 18-25, there is a statistically significant correlation between budgeting retention-time and conscientiousness (2018). The study is composed of two models, and in the second model, conscientiousness is added. This addition shows that an additional 4% of the variation in mental budgeting can be attributed to conscientiousness (Elgeka et al., 2018). In a cross-culture reference, Elgeka et al. reveals that there are not differences in conscientiousness between Indonesia and China, and this is an important idea to develop for the purpose of study (2018). There is insignificant variation in budgeting habits between these two cultures.

### ii. Neuroticism

Neuroticism, like conscientiousness, has been tied to budgeting in numerous studies. Tackett & Benjamin (2017) define neuroticism as the differences in the likelihood that someone will experience negative affect such as, as previously mentioned, depression, anxiety, and anger. According to Magnus et al. (1993), negative life events are associated with neuroticism, showing that personality influences the quality of one's life. This is relevant when discussing budgeting and its relation to someone's overall well-being.

In his study titled The Big Five personality traits, material values, and financial well-being of self-described money managers, Donnelly et al. (2011) supports past findings that neuroticism predicts an increased level of debt. At the 0.01 level, neuroticism's negative correlation with money management is statistically significant (Donnelly et al., 2011).

Neuroticism is most clearly understood as someone's attitude and emotions. Kidwell & Turrisi (2004), like other studies, investigate the determinants of attitude toward budgeting, indicating the role of neuroticism in budgeting. According to Kidwell & Turrisi, this model of attitude to maintain a personal budget includes determinants of consumption saliency, undesired effort, purchasing barriers, perceived knowledge, and structured spending, and this is supported through findings of a study composed of 189 college students attending a large eastern university (2004). Undesired effort and purchasing barriers most clearly reflect determinants influencing attitudes. If someone understands the importance of budgeting, they are more likely to have a budget, indicating a rational viewpoint and positive attitude towards budgeting (Kidwell & Turrisi, 2004). In addition, when considering purchase barriers, individuals have a poor attitude toward budgeting if they see it as an obstacle to making purchases that they would traditionally impulsively make (Kidwell & Turrisi, 2004). These results are significant as attitude influences intention. This acts as a good intervention for students who lack budgeting skills: they can adjust their money attitudes which will impact their bottom-line budgeting intentions.

### iii. The Big Five Tied to Family

Personality is heavily influenced by family, and countless studies have illustrated this connection between the five-factor model and family. In a study among siblings and twins asked to complete a list of tasks and video record themselves completing those tasks, Borkenau et al. (2001) finds that many of the traits defined by the five-factor model of personality are influenced by a shared environment, environmental factors that contribute to inter-familial similarity. Furthermore, Vukasovic & Bratko (2015) also find that the five-factor model of personality is influenced by family, noting that 40% of individual variances in the Big Five can be explained by genes, and the remaining 60% can be attributed to environmental influences. Thus, nature and nurture both play a role in someone's personality, and this is important when considered in conjunction with personal finance and, more specifically, budgeting.

Furthering the discussion on nature versus nurture, Rohrer et al. (2015) finds that birth order does not affect a child's development of Big Five traits. This flows into the discussion of family, showing that birth order is not relevant in sibling pairs.

## Family

Brau et al. (2020) investigates the budgeting habits of 500 college students, assessing the difference between their spending expectations and actual habits. A financially well test subject will have a narrow dispersion between expectations and realized habits.

The study breaks down various expenses, acting as different dependent variables. In terms of realized credit card spending, being involved with family financial decisions is positively correlated at the 0.05 level (Brau et al., 2020). Furthermore, the study finds that students with college graduate parents and parents who make less than $30,000 a year are statistically significant factors when considering spending dispersion as the dependent variable (Brau et al., 2020). Parental income of less than $30,000 is significantly positively correlated with spending dispersion (Brau et al., 2020), indicating that the students are less likely to adhere to their budgets. It is intuitive that students coming from lower income households are less likely to have been exposed to consistent budget-keeping, and therefore, they are much less experienced and skilled in budgeting than their counterparts, students that were raised in more financially stable households with budgeting as the subjective norm (Brau et al., 2020). On the other hand, having a parent with a college degree is negatively correlated with spending dispersion with a p-value of 0.0372, and this indicates that the student is more likely to stick to a budget (Brau et al., 2020). Thus, someone's family plays a significant role in his or her assumed financial habits.

In terms of family and its impact on a student's financial habits, another important consideration is a model of social behavior proposed by Triandis (1977, 1994) and Kidwell et al. (2004). This model shows that past behavior and intention determine behavior (Kidwell et al., 2004). Further, another theory to consider is the social learning theory, and this views people as being motivated to achieve their goals and avoid punishments (Salem Press, 2023). Walter Mischel, Albert Bandura, and Julian Rotter are all famous social learning theorists who believe that people develop personality and behavioral tendencies based on the punishments and rewards they have experienced (Salem Press, 2023). Unlike this theory of evolving personality, the psychoanalytic theory is grounded in the idea that most basic personality traits are developed by the age of five or six (Salem Press, 2023). Although a person may experience minor changes as they develop, Salem Press Encyclopedia of Health explains that psychoanalytic theorists do not expect drastic personality transformations (Salem Press, 2023). Therefore, to psychoanalytic theorists, someone's childhood and home life plays a significant role in his or her personality because that is the foundation from which he or she grows. Personality is solely based on theory, so it is impossible to prove right or wrong. However, the interpretations may be used as a guideline when predicting someone's behavior. Most importantly, all personality characteristics are seen as resulting from the relationship between a person and the environment surrounding him or her (Salem Press, 2023), and this idea may be considered in unison with the Big Five model previously discussed.

**Education**

Someone's educational background and experience with common personal finance concepts plays a key role in his or her financial literacy as supported by many studies. Peng et al. (2007) investigates the impact of high school- and college-level personal finance education with the main outcomes of interest being investment knowledge and household savings rates. Peng et al. delivered a survey to 1,039 alumni from a large midwestern university assessing everyone's financial education, financial experience, income, and demographics (2007). Peng et al. notes that previous studies have shown that financial education received and financial knowledge exercised are positively correlated (2007). Financial education correlates with knowledge which predicts good financial decisions. Peng et al.'s study looks at investment knowledge, while this study is looking at budgeting (2007). Though these are different studies, Peng et al.'s study is relevant for background and comparison. It will function as a foundation to formulate expectations.

The test subjects were given a test to measure investment knowledge developed by the National Association of Securities Dealers (Peng et al., 2007). According to Peng et al., alumni who cited personal finance education from a college class performed the equivalent of more than a letter grade better than alumni who were only exposed to a high school-level personal finance course (2007). Those receiving high school personal finance education earned an average investment knowledge score of 5.4, while alumni receiving college education earned a score of 6.6. This clear disparity is telling, emphasizing the impact of education, being one factor that influences personal financial behavior and habits. Such a difference is explained by differing curriculums. Further, financial experiences have a positive correlation with investment knowledge. Specifically, the students that held a bank account before the age of 18 scored 5% higher than the latter (Peng et al., 2007). Experience is an indirect form of education, exposing individuals to real life application of concepts that would otherwise be taught in a classroom.

Like Peng et al., Brau et al. (2020) finds that a high school finance class can be associated with a deeper understanding of personal finance, specifically budgeting. Brau et al. looks at expenditure dispersion, and he finds that students having taken a finance course in high school is indicative of efficient budgeting (2020).

In another study, Qamar et al. (2016) looks at the impact of money attitudes and financial knowledge on personal financial management, and budgeting can be considered a component of this. Attitude relies on, among other things, education. Qamar et al. synthesizes that responsible financial behavior is tied to financial knowledge (2016). In his study, Qamar et al. defines financial knowledge as “understanding key financial terms and ideas needed to function day by day in society” (2016, p. 300). The data of interest relates to hypothesis two: “There is significant moderating effect of financial knowledge on the relationship between money attitudes and personal financial management behavior” (Qamar et al., 2016, p. 301). Qamar et al. surveys 500 employed college students from five universities in Lahore (2016). According to the results, financial knowledge contributes to 24.1% of the variance in personal financial behavior influenced by money attitudes (Qamar et al., 2016). Therefore, it may be seen that financial knowledge has a significant positive impact on personal financial behavior of these 500 students, and this supports the hypothesis defined in the study (Qamar et al., 2016).

Studies have found that college-level personal finance education improves investment knowledge. This will be a consideration when assessing the relationship between a Millersville student’s budget use and his or her personal finance educational background.

As further consideration, despite the apparent positive effect of education on personal finance-related knowledge, Kidwell & Turrisi (2004) find that behavioral tendencies and personalities are more useful in changing budgeting habits than educational measures. The study looks at the determinants of budgeting intention and the predictors of budgeting attitude (Kidwell & Turrisi, 2004). This is important to keep in mind when assessing a student’s personal finance educational background. Though the value of education may be supported by studies, many also refute its importance. Therefore, education is not the only influence and cannot be analyzed in a vacuum when determining a student’s budgeting status – whether they have a budget.

**Budgeting and Long-Term Financial Wellness**

Numerous studies have revealed a relationship between budgeting habits and overall financial wellness. Versal et al. (2023) researches this relation in the journal, *How do Savings and Personal Budgeting Matter on Financial Literacy and Well-Being*. The study consolidates data from OECD/INFE 2020 survey data, data for Ukraine for 2021, and the Global Findex Database. The study seeks to support the correlation between savings and personal budgeting and financial literacy, financial well-being, and gross domestic product at purchasing power parity per capita. Versal et al. defines financial well-being based on various subjective measures as well as one objective measure, "I have money left over at the end of the month" (2023, p. 191). Versal cites OECD/INFE methodology that defines financial well-being based on the analysis of someone's agreement/disagreement with different statements: "Because of my money situation, I feel like I will never have the things I want in life; I am just getting by financially; I am concerned that my money will not last; I have money left over at the end of the month; My finances control my life" (OECD, 2020b, p. 53). Further, other studies have defined financial well-being based on two factors: income and savings (Headey & Wooden, 2004).

Versal et al. (2023) uses different indicators for personal budgeting: producing emergency funds, paying utility bills, and receiving wages. These indicators are divided into factor groups. Factor group 1 includes savings indicators, emergency funds, and wages (Versal et al., 2023). Notably, Versal et al. finds that 46.46% of the financial well-being level variation could be explained by the variation in Factor Group 1 at a p-value of 0.05 (2023). Therefore, it can be concluded that individuals associate saving with financial well-being. Saving for planned events or crises is made easier with budgeting, and as noted, savings is a key indicator of budgeting. Lunt & Livingstone (1991) further explore personal debt in two studies, and they use a multifactorial approach to construct a network of causes.

Because debt is such a complex issue with various causes, one cause cannot be isolated. Therefore, Lunt & Livingstone (1991) take various causes and their interactions with each other into consideration. According to Weiner (1986), causes are classified based on their features:

perceived locus, perceived stability, and perceived controllability, and Lunt & Livingstone consider this classification in their study. The study includes 64 subjects of various ages and social classes from the Oxford University subject panel (Lunt & Livingstone, 1991). Lunt & Livingstone presented the subjects with a questionnaire, asking them to rate each of 47 causes of debt on a five-point scale (1991). Notable causes fall under the categories of "lack of self-control" and "crisis." Lack of self-control considers careless budgeting, a lack of discipline, and impulse purchases. Crises consider, for example, unexpected expenses resulting from unexpected repairs, emotional crisis, and hardship. Crisis, as a cause of debt, connects to Versal et al. (2023) as an emergency fund prevents financial stress in crisis. Savings promotes financial well-being (Versal et al., 2023). A main observation is that the space is not evenly filled, and some causes are merging with one another, emphasizing the multifactorial model.

In their second study, Lunt & Livingstone (1991) instead look at a smaller number of causes, 18 causes. The study includes 45 subjects who were also from the Oxford University subject panel. Like the first study, subjects are asked about the causes of debt, but they were also asked to judge whether one factor affecting debt causes another factor that affects debt. This study focuses more on the interaction between different causes of debt. Careless budgeting has five incoming links and two outgoing links, indicating that it has a role in a person's accumulation of debt. The incoming links include lack of understanding, high credit limits, convenience of credit cards, lack of self-discipline, and stress (Lunt & Livingstone, 1991). The outgoing links are no savings and stress (Lunt & Livingstone, 1991). All these interactions show that the study subjects believe poor budgeting, among other factors such as stress and greed, is a cause of debt.

In addition, Kidwell & Turrisi (2004) also investigate the impact of budgeting inclinations on overall well-being, considering consumption saliency. Kidwell & Turrisi explain that, by maintaining a budget, individuals may open their eyes to the consequences associated with overspending and overconsumption (2004). Budgeting makes people hyperaware of their habits, allowing them to evaluate their financial well-being and their future.

Based on these studies, budgeting is important for financial and personal well-being. Having a budget allows for sufficient saving which may insulate someone from financial stress caused by crisis or overaccumulation of debt.

## METHODOLOGY

**Research Question:** What factors are associated with a student having a budget?

### Population

The population for this study is composed of Millersville business students enrolled in the following foundational business courses during the fall of the 2024-2025 academic year:

- Intro to Managerial Accounting
- Legal Environment of Business
- Business Research Methods
- Management Science
- Organizations and Transactions
- Intermediate Accounting 1
- Cost Accounting
- Federal Income Tax 1
- Business Applications Excel
- Personal Finance

- Financial Markets
- Operations & Supply Chain Management

Students enrolled in these courses come from various business-related majors including Accounting, Finance, Management, Marketing, Information Technology, and International Business. The sample class level ranges from first-year students to seniors.

**Instrumentation**

To collect data on the sample, a survey, found in Appendix B, was distributed to students as an optional activity from their professors, making participation voluntary. The medium for the survey was Microsoft Forms, so all data was collected and compiled electronically. The survey is composed of a combination of Likert-scale, open-ended, and yes/no questions. The survey consists of five sections, four corresponding to the specific study and one corresponding to general demographics. Considering the study-specific sections, the survey collects information on the subject regarding the Five Factor Model of Personality, Family, Education, and Budgeting. Below are specific questions posed in the survey.

- Two index variables were constructed based on the following statements, assessing the subject's agreement (range from 1=strongly disagree to 5=strongly agree) with each statement.
    - Conscientiousness
        - You are organized and careful.
        - You prefer a step-by-step approach.
        - You prefer a daily routine over spontaneity.
        - You become impatient when other people don't work efficiently.
        - You consider yourself an effective planner.

    - Neuroticism
        - You often experience intense feelings of nervousness or anxiety.
        - You're a pretty moody person.
        - You tend to remain cool, calm, and collected when under pressure.
        - You base most of your decision on emotions instead of logic.
        - You typically feel stressed or overwhelmed when you're busy.
- Family dynamics: parental college education experience, involvement in family financial decisions, and level of involvement in family financial decisions
- Education: number of high school- and college-level consumer education courses taken
- Budgeting: possession of budget and motivation (or lack thereof) for having a budget
- Demographic data: major, degree progress, and age

**Data Analysis**

Data collected from the survey was organized in an Excel spreadsheet and analyzed using logistic regression. The dependent variable is a dummy variable distinguishing whether or not a student has a budget. For this study, 1 means that the student has a budget, and 0 means that the student does not have a budget. The independent variables are the student's personality (conscientiousness and neuroticism), age, number of credits earned, parents' education, number of consumer education courses taken, and involvement in family financial decisions. Therefore, logistic regression was used to test for a significant relationship between budgeting and each of the independent variables. The data was also analyzed using various t-tests, comparing means for the same independent variables between students that have a budget and students that do not have a budget. A Chi Square test supplements the other tests. In addition to the quantitative analyses, the data was analyzed qualitatively. The open-ended questions were coded based on key terms and finance-related vocabulary, and this was then used to conduct a more generalized analysis across the entire sample. Three open-ended questions were coded pertaining to involvement in family financial decisions, motivation for budgeting, and reasoning for not having a budget. The coding is based on frequency of themes within responses, and it was reviewed by multiple professionals.

**Limitations**

This study is reliant on data sourced from students' self-perceptions. Therefore, by analyzing their own personality, a student may be biased. Specifically, people often present themselves in a manner that is favorable in accordance with societal norms and values, and this is known as social desirability bias (Zhu, et al., 2024). Because budgeting is such a widely accepted practice, study subjects may be more inclined to answer the survey questions supporting their own budget possession. Though there is no consequence to answering questions in the survey one way or another, subjects are concerned with how they may be perceived, leading them to exaggerate their practices and decisions. This social desirability and self-reporting bias can skew the data. The primary effect of this may be in relation to the personality questions and two index variables that are open to interpretation and self-reflection. Ultimately, the best way to collect data on someone's behavior is through observations, but this study is designed to collect data in the form of a survey which can be limiting (Zhu, et al., 2024).

To combat sampling bias, the students are supplied with definitions for budgeting and consumer education to limit misunderstanding. For the questions pertaining to the subjects' personalities, they are told to answer based on their initial gut feelings rather than spending an unreasonable amount of time assessing their agreement with the statements posed. Additionally, the surveys are anonymous. None of the questions collect any information on the study subject that may be personally identifiable. The anonymity is expected to limit any social desirability bias.

In addition to the biases inherent in the nature of the questions, the method for sample selection is another limitation of this study. The sample is obtained through volunteer participants from a select list of business courses. Therefore, this study cannot be generalized to all Millersville students. Rather, results may be applied to Millersville upper-level business students. The sample is not random. Students in business courses were specifically asked to volunteer to participate in the survey as an optional class activity.

## RESULTS

### Demographic Data

For the study, the sample was comprised of 80 students, mostly undergraduates, at Millersville University of Pennsylvania. Of the 80 respondents, 48 cite that they have a budget, and 32 do not. Considering degree progress, Table 1 (Appendix A) shows that the sample is fairly evenly split across freshmen (22.5%), sophomores (30%), juniors (21.3%), and seniors (22.5%). A minority of respondents, three people, report having earned greater than 120 credits. For all respondents, the average number of credits earned is 62.76, placing the average respondent in the junior standing (Table 2, Appendix A). According to Table 2 (Appendix A), students that report having a budget reported an average of 64 credits, while those without a budget reported an average of 60.91 credits. Table 3 (Appendix A) offers a breakdown of academic program for respondents. Students were grouped according to their major as accounting, finance, marketing, business administration, and “other.” The “other” group includes students with dual majors, computer science majors, mathematics majors, and other low frequency majors relative to the entire sample. Accounting majors are represented the most at

31.3% of all respondents, followed by business administration majors, then “other,” then finance, then marketing.

The average age of respondents was 20.44, shown in Table 4 (Appendix A). The average age is the same for the 48 respondents that have a budget, 32 respondents that do not have a budget, and all 80 subjects in the sample.

A notable result is shown in Table 5 (Appendix A). Of those that have a budget, 29.2% were involved with family financial decisions in the past. On the other hand, for students that do not have a budget, only 6.3% were involved in family financial decisions. Of the 32 students that do not have a budget, 93.8% were not involved in family financial decisions. Considering the 48 students that have a budget, 70.8% were not involved in family financial decisions. Table 6 (Appendix A) illustrates the average age when students became involved in family financial decisions. For those that have a budget and are engaged in family financial decisions, 14 students, the average age for their inclusion in family financial decisions is 16.07. Further, for students that participated in family financial decisions and do not have a budget, two respondents were an average of 15 years old when they were first included in such decisions.

Considering family involvement, respondents were asked how they contributed, if at all, to family financial decisions. In total, 16 out of 80 respondents participated in their family finances. Table 7 (Appendix A) illustrates the open-ended responses and codification. The responses were coded to reflect common themes between answers: budgeting, vacations, major life events. Two out of 16 respondents mentioned that they assisted with budgeting, whether working on their own budget or making their family budget. Three out of 16 respondents discussed their involvement with planning family vacations and travel. Three out of 16 respondents cited major life events leading to their involvement in family financial decisions: moving to a new country, planning student loans, and experiencing parental divorce.

Furthering the discussion of a student's family in relation to his or her budget, the survey addresses the subject's parents' educational history. Table 8 (Appendix A) shows that the average total years of college education for both parents combined is 5.33 and 4.72 years for students with a budget and without a budget, respectively. Table 9 (Appendix A) presents the frequency of the subject's parents' education using four ranges: 0 years, 1-4 years, 4-8 years, and 8+ years. The table shows that for students with budgets, 37.5% of respondents report that their parents' combined education is 1-4 years. On the other hand, for students without budgets, it is most common that their parents had a combined college education of 0 years, representing 31.3% of students without budgets.

Table 10 (Appendix A) shows the relation between a student's experience with consumer education and budgeting. In the survey, students were asked how many consumer education courses they have taken, including classes like personal finance and economics, and distinguishing whether they took those classes in high school or college. As a note, some students answered that they were currently enrolled in a consumer education course, but these were excluded from the data as only completed courses were considered. Education was similar between students that keep a budget and students that do not. For students with budgets, 91.6% of respondents had taken either a high school or college consumer education course. Further, 81.3% of students that do not have budgets had taken either a high school or college consumer education course. Notably, 8.3% of students that have a budget and 18.8% of students that do not have a budget have had no consumer education courses. Table 11 (Appendix A) furthers this discussion, presenting the average number of consumer education courses that students have taken. Students that have budgets have taken an average of 3.88 consumer education courses, high school- or college-level. On the other hand, students that do not have budgets have only taken an average of 2.91 consumer education courses.

**Explanatory Variables**

Descriptives. Students' self-perceptions of their personality, specifically conscientiousness and neuroticism, were assessed using Likert-scale questions. The survey constructs two index variables: one corresponding to the student's conscientiousness and one to neuroticism. Each index variable was matched to five statements with 1 representing "*strongly disagree*" and 5 representing "*strongly agree*". In total, there were 10 Likert-scale questions for respondents to answer: five paired with conscientiousness and five paired with neuroticism. Table 12 (Appendix A) shows the agreement frequencies and percentages for each question corresponding to conscientiousness, grouped based on whether the students have a budget. For students that have a budget, rates of agreement were high for each statement, each exceeding 55% of respondents. Though students that do not have a budget had lower rates of agreement, the frequency exceeded 40% for four of five statements. Further, Table 14 (Appendix A) offers a breakdown for the mean and standard deviation of each statement referring to conscientiousness. Every mean calculated exceeds 3.0 whether or not the students have a budget, indicating a level of agreement for each statement.

Table 13 (Appendix A) presents each survey question corresponding to neuroticism, and it offers a frequency for agreement with each statement. Unlike conscientiousness, the rate of agreement is low. Considering students that have budgets, the rate of agreement is less than 60% for each statement. Further, rates of agreement for students that do not have a budget are less than 70% for every statement. Additionally, Table 15 (Appendix A) provides the mean and standard deviation for each statement corresponding to neuroticism. The average rate of agreement for each statement is lower than that for conscientiousness.

To gain a greater understanding of student motivations for having a budget, students were prompted to answer an open-ended question. Responses to the open-ended question, “If you have a budget and use it, what motivated you to do this? On the other hand, if you don’t use a budget, why not?” were coded to extract general themes. The results of coding are found in Tables 16 and 17 (Appendix A). Considering those that budget, responses were divided into five categories to reflect each student’s reasoning behind keeping a budget: savings goal, familial influences, cost control, tracking/information purposes, and other. Table 16 shows that, for students that have budgets, the most common theme, capturing 33.3% of respondents, refers to the need to save. For students that do not have a budget, responses were coded into five categories: failed use, lack of necessity, mental budgeting, limited spending, and other. Table 17 offers support for the two main reasons that students do not have a budget: they do not have a perceived need (46.9%), and they have limited expenditures (21.9%).

Chi Square test. Table 18 (Appendix A) illustrates the Chi Square test of involvement in family financial decisions. Family involvement is a categorical variable with 1 indicating involvement and 0 indicating no involvement. Based on the results, researchers reject the null hypothesis ($p<.05$) to indicate that involvement in family financial decisions and budgeting are not independent. Rather, the two variables may be associated based on the results of the Chi Square test.

T-test. A t-test was performed to determine the variation between two samples: students that have a budget and students that do not have a budget. Table 19 (Appendix A) presents the t-test, assessing the number of consumer education courses taken by all students in the study. The statistical output allows researchers to reject the null hypothesis ($p<.1$), showing that the mean number of consumer education courses taken is greater for students that have a budget than students that do not have a budget.

Logistic regression. A logistic regression was used to determine a relationship between the independent variables (conscientiousness, neuroticism, parents' education, age, college credits, number of consumer education courses taken, and involvement) and the dependent variable (whether a student has a budget or not). The dependent variable is a dummy variable with a 1 reflecting that a student has a budget and a 0 reflecting that a student does not have a budget. Results of the logistic regression are presented in Table 20 (Appendix A).

Based on the output of the logistic regression, there is no significant relationship between neuroticism and budgeting. There is no significant relationship between parents' educational history and a student's budgeting. There is no significant relationship between a student's age and whether he or she has a budget. There is no significant relationship between the number of college credits a student has earned and whether he or she budgets. There is no significant relationship between the number of consumer education courses a student has taken and his or her budgeting.

However, there is a significant relationship between conscientiousness and a student having a budget ($p < .05$). For every unit increase in the conscientiousness index variable, a student is 4.474 times more likely to have a budget. There is also a significant relationship between involvement in family financial decisions and a student having a budget ($p<.05$). Analyzing involvement as a dichotomous variable, if a student cites involvement in family financial decisions, he or she is 7.185 times more likely to have a budget. Considering the model summary, the predictor variables explain 19.1-25.8% of the variation in the dependent variable, whether students have a budget or not. This is the range between the Cox & Snell R Square and the Nagelkerke R Square.

The output of the Omnibus Tests of Model of Coefficients shows how strong the model is, as a whole. Based on the results, together, the predictor variables (conscientiousness, neuroticism, parents' education, age, college credits, and number of consumer education courses taken) do not have a statistically significant association with a Millersville student having a budget.

## DISCUSSION

### Demographics

The survey collected information on respondents' demographics including class level, credits earned, academic program, and age. Based on the results, the number of credits and age are not significantly associated with a student having a budget. Table 4 (Appendix A) shows that the average age for respondents is the same for those that have a budget, those that do not have a budget, and the entire sample at 20.44 years.

Age is an important demographic to consider. Prior studies have shown that age is influential in determining financial literacy and budgeting habits. A study by Siegfried and Wuttke (2021) investigates the relationship between demographic characteristics and overall financial literacy. The study finds that age is a significant predictor of financial literacy, and, more specifically, budgeting (Siegried & Wuttke, 2021, p. 7). Had this result remained consistent for this study, average age should vary between students with budgets and students without budgets. However, the results show the same age for both groups, and this deviates from expectations based on Siegfried and Wuttke's study. In the sample, everyone was the same general age. Based on the target of the study, college students, age is a difficult predictor variable to test. Future studies may include a sample with a wider range of respondents in order to assess if age influences whether someone has a budget or not.

**Family**

In order to assess familial influences on whether a student has a budget, respondents were asked about their parents' level of education and their involvement in family financial decisions. The logistic regression presented in Table 20 (Appendix A) shows that parents' education is not significantly associated with budgeting. According to Brau et al., individuals with college graduate parents are more likely to stick to a budget (Brau et al., 2020, p. 3). Based on this, it is expected that students reporting having a budget would also have parents with some level of college education. Table 7 (Appendix A) presents the average combined total years of college education for each respondent's parents. On average, for students that have a budget, their parents have a combined college education of 5.33 years, while the average combined college education for parents of non-budgeters is 4.72 years. Interestingly, based on Table 8 (Appendix A), parents' level of education with the highest frequency for non-budgeters is zero years for 10 out of 32 respondents (31.3%).

At first glance, these results are in line with Brau et al.'s (2020) study. Students with budgets generally report parents with higher levels of post-secondary education than those students without budgets. However, statistical tests do not show a difference in average years of parental college education between students that have budgets and students that do not. This discrepancy between the study and prior literature may be attributed to the study location and the number of variables incorporated into the Brau et al. (2020) study. Brau et al.'s (2020) sample is composed of students from a western United States university, while this study surveys students at Millersville University, an eastern US university. Further, Brau et al. incorporates more extensive inquiry of respondents, capturing a much deeper level of data to establish associations between predictor variables. This study was completed on a much smaller scale with fewer questions, causing a difference in results.

To continue the discussion, involvement in family financial decisions is another factor influencing a student's tendency to have a budget. Brau et al. (2020) finds that realized credit card spending is positively correlated with involvement in family financial decisions. This relationship holds true when considering the relationship between involvement and having a budget. Table 5 (Appendix A) shows that 30 out of 32 students that do not have a budget (93.8%) were never involved in financial decisions at home, and this matches expectations developed by Brau et al.'s (2020) study. Not only do the frequency tables highlight the significance of involvement, but the logistic regression found in Table 20 (Appendix A) and Chi Square test found in Table 18 (Appendix A) also support the association between the two variables.

Students express high levels of involvement in family financial decisions through budgeting, planning for vacation, or navigating major life events. One student discusses exposure to a high level of financial responsibility at the age of 14: "[I] started working earlier… Since we moved to a new country, working was the only option to afford the expenses while going to school." Another student echoes this, explaining, "I was informed of my family's financial state… They asked if I had anything that could help with the promise to pay me back." As an overarching theme, many students were first involved in family financial decisions out of necessity rather than an educational opportunity. Parents must place an emphasis on their children's financial literacy not for their own convenience but for their child's well-being. According to Moreno-Herrero, et al. (2015), financial socialization is a process that occurs within the context and setting of the family. Bowen (2002) defines financial socialization as, "understanding key financial terms and concepts needed to function daily in American society." Like this study, Moreno-Herrero, et al. finds that students that have conversations with their parents about finances tend to get higher financial literacy scores.

Because involvement is so important in financial socialization, the American public must receive some form of intervention. Moreno-Herrero, et al. (2015) suggests financial education initiatives targeting parents. Lancaster County offers various resources for parents, promoting financial stability and education. United Way provides an aggregation of information and resources to the public. Some categories of assistance include help with immediate needs and future planning. For immediate assistance, the United Way website offers information for people who have experienced an emergency, are struggling to pay bills, or are feeling financially unstable. Considering future planning, United Way compiles information and resources pertaining to financial products, starting a family, providing for a family, and starting a job. The United Way of Lancaster County offers countless resources to the Lancaster community: VITA, a free tax preparation service for individuals making low levels of income; Savi, a student loan management platform offering opportunity for debt forgiveness; and community financial education programs, covering topics such as budgeting, credit, and identity theft (*What we do*, 2025). New parents may take advantage of these free programs to improve their own financial literacy to support their children in developing their budgeting habits.

Like the United Way of Lancaster County, Milagro House offers services to support Lancaster County residents. This non-profit provides education, housing, and support services to impoverished women and their children. Milagro House emphasizes the importance of long-term impacts, promoting the financial independence of mothers. Specifically, the non-profit offers life-skills programming for residents, and this includes activities and workshops covering budgeting and basic financial skills (*Milagro house programs*). Again, if mothers can learn about financial topics, they may impart their knowledge onto their children through involvement in financial decisions.

An additional non-profit to consider is Church World Service Lancaster. CWS provides support and educational opportunities to immigrants and refugees. Through extended case management, employment skills training, job referrals, and family budget planning, CWS can help individuals adjust to the Lancaster community and succeed financially (*Welcome Programs*). This creates a domino effect within families, ultimately affecting the sons and daughters of immigrants. The services of United Way, Milagro House, and CWS all support Moreno-Herrero's suggested interventions, all providing educational opportunities for parents.

When parents are more educated on their own finances, they may begin to involve their children in financial decisions. In a periodical, Winnie Sun (2016) provides suggestions for the ways in which parents may raise financially well children. Winnie Sun is a speaker, media personality, and entrepreneur. She has been featured on news outlets such as CNBC and Fox Business, and she is known for speaking about the control that people have over their financial futures (*About — Winnie sun*). Notable tips include providing children an allowance, helping children track their spending, and teaching children about credit cards and budgeting (Sun, 2016). Each of these activities will provide children with the opportunity to develop their own financial habits and awareness for financial decisions. Of the students that claimed to be involved in family financial decisions, 12.5% of students explained that they participated in budgeting. By being involved in budgeting at an early age, students are more likely to have a budget of their own, and Sun's (2016) assessment of the best ways to build a financial foundation reflects this.

Like Sun, Ron Lieber also discusses ways in which children should be involved in family financial decisions. Lieber is the author of the New York Times and Wall Street bestseller, *The Opposite of Spoiled: Raising Kids Who Are Grounded, Generous, and Smart About Money* (*About Ron*, 2021). He writes a column called “Your Money” for the New York Times, where he covers personal finance issues (*About Ron*, 2021). In his article, Lieber emphasizes the importance of financial transparency; parents should avoid shielding their children from money and answer their questions (Lieber, 2015). He suggests that parents may build a child’s awareness for household budgeting slowly. First, parents may expose children to something that they spend money on regularly like groceries (Lieber, 2015). Grocery shopping with children provides them with the opportunity to assess their needs and wants and even gain some exposure to couponing. Other forms of this slow exposure may include sharing bills with children and going through family budgets together weekly (Lieber, 2015). In discussing financial hardship, Lieber quotes Sara Solnick, associate professor of economics at the University of Vermont: “If you are not talking to [children], then they are drawing their own conclusions” (Lieber, 2015). Overall, Lieber suggests that parents involve their children with their finances to promote the children’s financial wellbeing. A culture of openness and transparency fosters financial literacy and overall wellness.

The study shows that involvement is significantly associated with whether a Millersville student has a budget, so it is a crucial factor to consider and intervene with. Parents must be financially literate to facilitate discussions and properly involve their children in their decisions. The Lancaster County area boasts countless financial educational resources to parents, and various experts have provided tips for ways to involve children in household finances. Students that are provided with quality opportunities for financial involvement are likely to have their own budget and find financial freedom.

**Education**

Education is often considered to be a key factor in developing financial literacy. Brau et al. (2020) finds that having a finance course in high school is indicative of budgeting. Further, Peng et al. (2007) finds that students that have taken a college personal finance course are more knowledgeable in terms of investment knowledge than students that have taken a high school personal finance course. Overall, it is expected that students that have a budget have taken more consumer education courses than students that do not have budgets. The t-test performed shows that the mean number of consumer education courses taken, whether that be high school- or college-level, is greater for students that have a budget than for students that do not have a budget (Table 19, Appendix A).

According to Donnelly et al. (2011), money management is the most significant predictor of financial well-being. Based on prior studies, this finding meets expectations that money management promotes financial well-being and may be associated with budgeting. One respondent says, "I recently started using a budget to keep track of my expenses because I have quite a few [more] expenses to keep track of [than] I used to. I would say part of the reason I didn't start a budget sooner is not knowing where to get started." This comment is interesting because the student has recognized a need for budgeting and overcome a learning curve to meet that need. Students are often uneducated on how to keep a budget, and this is also echoed in responses from students that do not have a budget.

For students that do not have a budget, most respondents expressed a lack of necessity for budgeting based on their low level of expenses and income. A study by Onyeukwu and

Azunwena (2020) offers data supporting knowledge gaps. The sample for the study is 260 registered and serving teachers in Owerri Municipal, Imo State, Nigeria. The study exhibits high agreement among low-income households that irregular income discourages budgeting (Onyeukwu & Azunwena, 2020, p. 164). This is also reflective in a college student's budgeting. Many students have little to no income that fluctuates which deters them from making a budget. This indicates knowledge gaps that must be addressed. One student says, "I don't have a lot of expenses to be worrying about right … the only thing that I have to take care off [*sic*] is transportation and some other personal stuff." Further, another respondent echoes this: "I have never committed the time to developing [a budget]. I have survived this long without one while still limiting my spending."

Though students do not have high levels of income, assessed needs for a budget, or high expenses, keeping a budget at an early age is about forming habits. If students do not realize and learn the differences between needs, wants, and priorities through the act of budgeting, they may spiral out of control (Lasalle, 2010). A habit is defined as a repeated act that does not require conscious thought (McBroom, 2024). Habits are complex, and they may be harmful or beneficial. William James, an early American philosopher and psychologist asserts that education is necessary to change someone's behavior and bring forward more beneficial habits (McBroom, 2024). New habits are often very tough to form because they require the process of neuronal imprinting (McBroom, 2024). Habit development is composed of three parts: the cue, the behavior, and the reward (McBroom, 2024). Each of these parts, after repetition, create a habit. Because habits can be difficult to start, it makes the most sense that students begin developing habits while they are young with ample time and few distractions or responsibilities.

With limited financial responsibilities, students can begin to understand the process of budgeting in a low-pressure environment. Though budgeting is not important for college students making low levels of income, budgeting skills may be translated to the student's adult life. Suggested tools to start a habit include gamification and behavior modification (McBroom, 2024). Gamification is easily accessible in the 21st century, allowing students to simulate good behaviors (McBroom, 2024). Many budgeting apps, such as Quicken Simplifi, YNAB (You Need a Budget), and PocketGuard, promote budgeting in an interactive, organized way (Tepper, 2025). Thus, students that grapple with budgeting based on their lack of expense and income should seek an approach to make a budget to start developing beneficial, lasting habits.

As discussed, high school and college consumer education are influential as to whether or not a student has a budget. Students must learn how to budget from some type of resource, and if they do not have a class, they are less likely to learn and develop positive habits. Based on the results, it can be concluded that it is important to invest time and money in the personal finance education of students. Such action is already in motion with Pennsylvania mandating personal finance classes for all high school graduates starting with the 2026-2027 school year (*Financial*). Future studies may show the effects of mandated personal finance courses on Pennsylvania high school students. This mandate was not in place at the time of study, so its effects cannot be assessed. As an additional measure, Pennsylvania passed Act 35 which requires that post-secondary institutions incorporate credit card debt education and money management skills for students into orientation programs beginning in the 2024-2025 academic year (*Financial*). Again, the effects of this Act may not be apparent in this study as most of the students in the sample (77.5%) are above the freshman level, so they will not have been involved in such orientation activities.

Mandates are, in theory, a promising idea to promote the financial well-being of students. However, some studies have contradicted this. Cole et al., for example, finds that mandated personal finance courses have no causal impact on credit management or savings by students (Cole, et al., 2015). The mandates were passed by 14 US states between 1957 and 1982, and the study is composed of a sample from the US census. Thus, though mandates are intended to improve the financial literacy of students, they may often fail. Again, future studies may assess if Pennsylvania's new mandates and acts affect whether a college student has a budget. Personal finance can be taught, but it is often difficult to alter behaviors, which is a crucial part of budgeting as supported by the study.

**Personality**

Two components of personality assessed by this study's survey are conscientiousness and neuroticism, two attributes of the Big Five. Based on prior research by Donnelly et al. (2011), it is expected that conscientiousness would be positively associated with budgeting. Of the factors evaluated in this study, conscientiousness is statistically significant. Table 20 (Appendix A) presents the binary logistic regression, and it shows that there is a significant relationship between conscientiousness and if a student has a budget ($p<0.05$).

Students that have budgets provide well-thought-out reasons for their use of a budget, expressing their levels of organization and conscientiousness. Many students explain that they save for emergencies. One respondent says, "I don't use [my savings] and keep saving more in case it's an emergency." Further, another person says, "Having savings gives me comfort." By saving for emergencies, students are provided a sense of peace and control over their financial situation. Additionally, students also save for special purposes: "If I can save my money, I can eventually try to buy important assets (home, new car, etc)." Saving can be used for countless purposes, and budgeting allows for a means of tracking that.

Unlike conscientiousness, neuroticism is not significantly associated with a student having a budget. Tables 14 (Appendix A) offer a deeper analysis of the neuroticism index variable. Students with budgets have lower average agreement for each statement corresponding to neuroticism, while students without budgets have higher average agreement. Though students without budgets are more neurotic, on average, the difference is small and falls short of expectations. Based on the study by Donnelly et al. (2011), it may be expected that students without budgets have high rates of agreement for the statements corresponding to neuroticism. Often, people are likely to present themselves in a positive light resulting in social desirability bias. Neuroticism and the corresponding statements have a negative connotation, so the respondents may have been hesitant to be honest in answering the questions. Therefore, a discrepancy arises between expectations and actual results. In future studies, researchers may pose different, more subtle questions regarding neuroticism to limit social desirability bias.

Based on the results, conscientiousness is a variable of interest and should be highlighted in considering whether a student has a budget or not. Personality, unlike the other predictor variables, cannot be taught, and this makes intervention difficult. Family involvement and education are both controllable variables, while conscientiousness corresponds to personality; therefore, it is God-given and inherent in an individual. This study emphasizes psychological barriers which prevent some people from developing healthy, beneficial habits for their financial well-being. Often, when considering personality, nature versus nurture is an important consideration. Someone's personality is influenced by their genes and surrounding environmental factors. Thus, family and friends may play a part in a student's personality development. Future research may assess the ways to intervene with personality development to promote financial literacy and budgeting in younger generations.

**Key Stakeholders**

Involvement in family financial decisions, consumer education, and conscientiousness are all significant factors that affect whether a student has a budget. Past studies support these findings, and new ones are encouraged to deepen the discussion. This study may be of interest to lawmakers, school administrators, and legal guardians. Lawmakers can mandate educational programs for students, promoting widespread access to consumer education. Further, school administrators can implement their own personal finance course requirements, whether or not they are required by the states. Legal guardians have the responsibility to involve their dependents in financial decisions, providing consistent exposure to personal finance to better prepare them for the real world. These key stakeholders are responsible for ensuring the well-being of children and young adults as they prepare to start their lives and seek to achieve their goals using a personal budget.

**CONCLUSION**

This study addresses the factors associated with budgeting using a sample of 80 college students at Millersville University pursuing degrees in the business department. It adds to the existing discussion surrounding the most impactful influences on general personal finance by taking a deeper look at associations specifically pertaining to budgeting. The results of this study show that budgeting is influenced by a student's conscientiousness, past involvement in family financial decisions, and previous consumer education history.

Some suggested areas of future research include an expansion to investigate the association between personality and whether a student has a budget. For example, researchers may restructure this study's research on neuroticism in relation to budgeting, posing questions to limit social desirability bias. Personality is difficult to assess when respondents take surveys. Often, personality assessments are much more extensive than the statements included in this study's survey, so future researchers may incorporate a more structured approach, using something like the NEO Personality Inventory.

Further, additional research is proposed to investigate appropriate interventions for personality development. As supported by the statistical output of the binary logistic regression, conscientiousness is significantly associated with whether a student has a budget. Interventions for education and family involvement are tangible and clear, but personality is a more complicated factor. Future studies may involve observations and focus groups to determine how students develop their personalities and ways in which the public may intervene.

Understanding the most impactful factors for budgeting is crucial because it may allow lawmakers, school administrators, and legal guardians more guidance in designing interventions as well as raising and supporting children. Young people, just like those sampled in this study, may achieve financial wellness and be empowered to live financially free lives with the help of governing bodies and family members.

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**APPENDIX A: RESULTS**

**Table 1:** Number of academic credits and budgeting

| Class Level Based on Credits Earned | Budget (n=48) | | No Budget (n=32) | | Total (n=80) | |
|---|---|---|---|---|---|---|
| | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| Freshman | 12 | 25.0% | 6 | 18.8% | 18 | 22.5% |
| Sophomore | 13 | 27.1% | 11 | 34.4% | 24 | 30.0% |
| Junior | 8 | 16.7% | 9 | 28.1% | 17 | 21.3% |
| Senior | 12 | 25.0% | 6 | 18.8% | 18 | 22.5% |
| Graduate Student (120+ credits) | 3 | 6.3% | 0 | 0.0% | 3 | 3.8% |

**Table 2:** Credits earned

| | Budget (n=48) | | No Budget (n=32) | | Total (n=80) | |
|---|---|---|---|---|---|---|
| | M | SD | M | SD | M | SD |
| **Credits** | 64.00 | 39.54 | 60.91 | 27.24 | 62.76 | 34.98 |

**Table 3:** Academic program and budgeting

| Major | Budget (n=48) | | No Budget (n=32) | | Total (n=80) | |
|---|---|---|---|---|---|---|
| | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| Accounting | 15 | 31.3% | 10 | 31.3% | 25 | 31.3% |
| Finance | 6 | 12.5% | 6 | 18.8% | 12 | 15.0% |
| Marketing | 8 | 16.7% | 3 | 9.4% | 11 | 13.8% |
| Business Administration | 10 | 20.8% | 7 | 21.9% | 17 | 21.3% |
| Other* | 9 | 18.8% | 6 | 18.8% | 15 | 18.8% |

*The "Other" category includes majors with a frequency of three or fewer: MSc. Technology and Innovation, Finance, Marketing and Finance, Sports Administration, Accounting/Finance, Math and Finance, Management, Business Education, Business Administration and International Business, Accounting and Computer Science, Accounting and Marketing, Biochemistry, Mathematics-Statistics. Most majors in this category are double majors.

**Table 4:** Age

| | Budget (n=48) | | No Budget (n=32) | | Total (n=80) | |
|---|---|---|---|---|---|---|
| | M | SD | M | SD | M | SD |
| **Age** | 20.44 | 1.75 | 20.44 | 1.46 | 20.44 | 1.63 |

**Table 5:** Involvement in family financial decisions and budgeting

| Family Financial Decisions | Budget (n=48) | | No Budget (n=32) | |
|---|---|---|---|---|
| | Frequency | Percent | Frequency | Percent |
| Involved | 14 | 29.2% | 2 | 6.3% |
| Not Involved | 34 | 70.8% | 30 | 93.8% |

**Table 6:** Age for involvement in family financial decisions

| | Budget (n=14) | | No Budget (n=2) | |
|---|---|---|---|---|
| | M | SD | M | SD |
| **Age** | 16.07 | 3.08 | 15.00 | 1.41 |

**Table 7:** Themes in Family Financial Decision Involvement Open-Ended Questions

| | Involved (n=16) | |
|---|---|---|
| | Frequency | Percent |
| Budgeting | 2 | 12.5% |
| Vacations/Travel | 3 | 18.8% |
| Major Life Events | 3 | 18.8% |
| Other | 8 | 50.0% |
| **Total** | **16** | **100.0%** |

**Table 8:** Parents' education

| | Budget (n=48) | | No Budget (n=32) | | Total (n=80) | |
|---|---|---|---|---|---|---|
| | M | SD | M | SD | M | SD |
| **Parents' Combined Total Years of College Education** | 5.33 | 3.92 | 4.72 | 4.25 | 5.09 | 4.04 |

**Table 9:** Parents' education and budgeting

| **Parents' Education** | Budget (n=48) | | No Budget (n=32) | |
|---|---|---|---|---|
| | Frequency | Percent | Frequency | Percent |
| 0 years | 9 | 18.8% | 10 | 31.3% |
| 1-4 years | 18 | 37.5% | 7 | 21.9% |
| 4-8 years | 9 | 18.8% | 9 | 28.1% |
| 8+ years | 12 | 25.0% | 6 | 18.8% |

**Table 10:** Education and budgeting

| **Education** | Budget (n=48) | | No Budget (n=32) | |
|---|---|---|---|---|
| | Frequency | Percent | Frequency | Percent |
| Either College OR High School | 10 | 20.8% | 11 | 34.4% |
| Both College AND High School | 34 | 70.8% | 15 | 46.9% |
| No Education | 4 | 8.3% | 6 | 18.8% |

**Table 11:** Number of consumer education courses

| Consumer Education Courses | Budget (n=48) | | No Budget (n=32) | | Total | |
|---|---|---|---|---|---|---|
| | M | SD | M | SD | M | SD |
| High School | 1.52 | 1.30 | 1.16 | 1.02 | 1.38 | 1.21 |
| College | 2.35 | 1.92 | 1.75 | 1.92 | 2.11 | 2.02 |
| Total | 3.88 | 2.74 | 2.91 | 2.69 | 3.49 | 2.75 |

**Table 12:** Rates of agreement for survey questions (agree or strongly agree) corresponding to Conscientiousness

| Statement | Budget (n=48) | | No Budget (n=32) | |
|---|---|---|---|---|
| | Frequency | Percent | Frequency | Percent |
| You are organized and careful. | 35 | 72.9% | 14 | 43.8% |
| You prefer a step-by-step method for solving problems. | 45 | 93.8% | 29 | 90.6% |
| You prefer a daily routine over spontaneity. | 36 | 75.0% | 20 | 62.5% |
| You become impatient when other people don't work efficiently. | 27 | 56.3% | 25 | 78.1% |
| You consider yourself an effective planner. | 30 | 62.5% | 10 | 31.3% |

**Table 13:** Rates of agreement for survey questions (agree or strongly agree) corresponding to Neuroticism

| Statement | Budget (n=48) | | No Budget (n=32) | |
|---|---|---|---|---|
| | Frequency | Percent | Frequency | Percent |
| You often experience intense feelings of nervousness or anxiety. | 20 | 41.7% | 14 | 43.8% |
| You're a pretty moody person. | 6 | 12.5% | 4 | 12.5% |
| You tend to remain cool, calm, and collected when under pressure.* | 27 | 56.3% | 11 | 34.4% |
| You base most of your decisions on emotions instead of logic. | 5 | 10.4% | 5 | 15.6% |
| You typically feel stressed or overwhelmed when you're busy. | 27 | 56.3% | 22 | 68.8% |

*A question corresponding to the neuroticism index variable was reverse scored to ensure consistency of statements.

**Table 14:** Descriptive statistics for Conscientiousness index variable

| Statement | Budget (n=48) | | No Budget (n=32) | |
|---|---|---|---|---|
| | M | SD | M | SD |
| You are organized and careful. | 3.94 | 0.89 | 3.31 | 1.00 |
| You prefer a step-by-step method for solving problems. | 4.46 | 0.62 | 4.31 | 0.64 |
| You prefer a daily routine over spontaneity. | 3.98 | 0.98 | 3.66 | 0.75 |
| You become impatient when other people don't work efficiently. | 3.65 | 0.89 | 4.00 | 0.84 |
| You consider yourself an effective planner. | 3.67 | 0.95 | 2.88 | 1.04 |

**Table 15:** Descriptive statistics for Neuroticism index variable

| Statement | Budget (n=48) | | No Budget (n=32) | |
|---|---|---|---|---|
| | M | SD | M | SD |
| You often experience intense feelings of nervousness or anxiety. | 3.23 | 1.04 | 3.34 | 1.21 |
| You're a pretty moody person. | 2.38 | 0.98 | 2.38 | 0.98 |
| You tend to remain cool, calm, and collected when under pressure.* | 3.54 | 0.87 | 3.09 | 0.93 |
| You base most of your decisions on emotions instead of logic. | 2.33 | 0.91 | 2.47 | 1.05 |
| You typically feel stressed or overwhelmed when you're busy. | 3.65 | 0.96 | 3.94 | 0.91 |

*A question corresponding to the neuroticism index variable was reverse scored to ensure consistency of statements.

**Table 16:** Themes in Budget Motivations Open-Ended Questions (those that have a budget)

| | Budget (n=48) | |
|---|---|---|
| | Frequency | Percent |
| Savings Goal | 16 | 33.3% |
| Familial Influences | 4 | 8.3% |
| Cost Control | 9 | 18.8% |
| Tracking/Information Purposes | 13 | 27.1% |
| Other | 6 | 12.5% |
| **Total** | **48** | **100.0%** |

**Table 17:** Themes in Budget Motivations Open-Ended Questions (those that do not have a budget)

| | No Budget (n=32) | |
|---|---|---|
| | Frequency | Percent |
| Failed to Use | 3 | 9.4% |
| No Need, Not a Priority | 15 | 46.9% |
| Mental | 5 | 15.6% |
| Limited Spending | 7 | 21.9% |
| Other | 2 | 6.3% |
| **Total** | **32** | **100.0%** |

**Table 18:** Chi Square test for Involvement in Family Financial Decisions

| | Value | Asymptotic Significance (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
|---|---|---|---|---|
| Pearson Chi-Square | 6.302 | 0.012 | | |
| Continuity Correction | 4.951 | 0.026 | | |
| Likelihood Ratio | 7.153 | 0.007 | | |
| Fisher's Exact Test | | | 0.020 | 0.010 |

**Table 19:** t-Test: Two-Sample Assuming Unequal Variances for Number of Consumer Education Courses Taken

| | Budget | No Budget |
|---|---|---|
| Mean | 3.875 | 2.90625 |
| Variance | 7.515957447 | 7.248991935 |
| Observations | 48 | 32 |
| Hypothesized Mean Difference | 0 | |
| df | 67 | |
| t Stat | 1.565121361 | |
| P(T<=t) one-tail | 0.06113288 | |
| t Critical one-tail | 1.667916114 | |
| P(T<=t) two-tail | 0.122265761 | |
| t Critical two-tail | 1.996008354 | |

**Table 20:** Logistic Regression Results

| | B | SE | Wald | Sig | Exp(B) |
|---|---|---|---|---|---|
| Conscientiousness | 1.498 | 0.620 | 5.843 | 0.016 | 4.474 |
| Neuroticism | -0.356 | 0.393 | 0.819 | 0.365 | 0.700 |
| Parents' Education | 0.012 | 0.068 | 0.030 | 0.864 | 1.012 |
| Age | 0.003 | 0.213 | 0.000 | 0.987 | 1.003 |
| Credits | 0.001 | 0.010 | 0.004 | 0.948 | 1.001 |
| Consumer Education Courses | 0.081 | 0.103 | 0.623 | 0.430 | 1.084 |
| Involvement | 1.972 | 0.869 | 5.147 | 0.023 | 7.185 |

**APPENDIX B: SURVEY**

**Five Factor Model**

- Index Variable 1 (Conscientiousness)
  - You are organized and careful.
  - You prefer a step-by-step approach.
  - You prefer a daily routine over spontaneity.
  - You become impatient when other people don't work efficiently.
  - You consider yourself an effective planner.
- Index Variable 2 (Neuroticism)
  - You often experience intense feelings of nervousness or anxiety.
  - You're a pretty moody person.
  - You tend to remain cool, calm, and collected when under pressure.
  - You base most of your decision on emotions instead of logic.
  - You typically feel stressed or overwhelmed when you're busy.

**Family**

- How many total years of college education did your parents acquire?
- If at all, what age were you involved in family financial decisions?
- If you were involved in family financial decisions, describe how.
  - Open-ended

**Education**

Please see the below examples of consumer education to consider in answering the following questions.

**Consumer education** courses include personal finance, foundations of personal finance, economics, home economics, and any course that includes topics preparing students to make financial decisions (buying a car, managing a budget, buying a house, planning for emergency).

- In high school, how many consumer education courses did you take?
- In college, how many consumer education courses did you take?

**Budgeting**

Please see the two definitions for budgeting below and use them to inform your answers for the following questions.

Budgeting: the act of "allotting all or part of a person's total financial resources into distinct categories in order to track expenses against a tangible (electronic or manual) monetary forecast" (Kidwell & Turrisi, 2004, p. 602)

Budgeting: tracking actual expenses against a pre-formed plan with cost categories such as food, housing, clothing, etc.

- Based on these definitions, do you have a budget?
  - Y/N
- If you have a budget and use it, what motivated you to do this? On the other hand, if you don't use a budget, why not?

**Demographics**

- What is your major?
- How many credits have you earned?
- How old are you?