Do Community Characteristics Relate to Young Adult College Students' Credit Card Debt? The Hypothesized Role of Collective Institutional Efficacy

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Abstract

This study examines the extent of emergent, outstanding credit card debt among young adult college students and investigates whether any associations exist between the characteristics of the communities in which these students grew up or lived and their credit card debt. Using data ($N = 748$) from a longitudinal survey and merging community-level characteristics measured at the zip code level, we confirmed that a community's unemployment rate, average total debt, average credit score, and number of bank branch offices were associated with a young adult college student's acquisition and accumulation of credit card debt. Community-level characteristics had the strongest associations with credit card debt even after controlling for individual characteristics such as a young adult college student's race, GPA, and financial independence and familial characteristics such as their parents' income and whether their parents discussed financial matters like establishing credit. The findings from this research may help to understand how communities can be better capacitated to support the financial goals of their residents.

Introduction

Despite the slight downward trend in credit card use that coincided with the Great Recession in 2007 (Hurd & Rohwedder, 2010), credit cards remain fundamental to the financial portfolios of households in the United States with 71% of individuals aged 18 or older owning at least one card (Swift, 2014). Indeed, access to credit can provide individuals with not only a means of facilitating consumption during income fluctuations (Karlan & Zinman, 2010), but also a way to cope financially with emergencies (Lusardi, Schneider, & Tufano, 2011) and to demonstrate timely payment history that can bolster a credit score (Simon, 2015). Used as intended, a credit card can facilitate consumption by increasing an individual's sense of security when purchasing an expensive product or earning rewards that can be used to subsidize everyday expenses. The ability to buy on credit easily can also avoid financial stress; many Americans, for example, regularly use a credit card to pay a utility bill due before payday or to rent a car while theirs is in the repair shop due to a traffic accident.

However, even as credit may facilitate the achievement of financial goals, overreliance on credit may contribute to financial setbacks. Many credit card users report overspending and underestimating monthly payment amounts necessary for paying off their balances (Soll, Keeney, & Larrick, 2013; Sotiropoulos & D'Astous, 2012; Wilcox, Block, & Eisenstein, 2011), suggesting that many individuals end up using more credit than they had intended. Overreliance on credit is a concern in the US given that over one third of credit card holders (34%) own three or more cards and nearly half of those (41% to 44%) either make only minimum debt payments each month or retain revolving balances with high interest rates (Board of Governors of the Federal Reserve System, 2015; Jacobe, 2008). From this perspective, credit cards can be pernicious, threatening an individual's current financial security and overall wellbeing and pushing future financial goals further out of reach. In effect, many of those who fall into such a payment pattern are taking two steps backward for every step forward, and some soon find themselves moving only backward. For them, the entire credit card system becomes a highly

risky way to manage debt, and their chances of avoiding financial ruin and bankruptcy eventually become virtually nil.

National data suggest that the current young adult generation born between the 1980s to 2000s— Millennials—are more reluctant to use credit cards and so use credit cards at a lower rate than did previous young adult generations (Holmes, 2014); however, these young adults who do use credit cards tend to accumulate more debt at a younger age than their predecessors (Hodson & Dwyer, 2014). The current generation's average amount of outstanding credit card debt in 2010, for example, was over $10,000, whereas in 1992 the average was roughly $3,000, after adjusting for inflation (Hodson & Dwyer, 2014). Consequently, and despite their greater reluctance on average to use credit cards, the way that the current generation of young adults uses credit remains a concern, especially given the generation's increasing indebtedness, which includes debt as a result of student loans (Elliott & Lewis, 2015). The financial obligations of today's young adult college students are particularly worrisome given the rising amounts of their average student debt (Dwyer, Hodson, & McCloud, 2013; Houle, 2013) and other types of debt (Hodson & Dwyer, 2014). This indebtedness could follow these young adults for years if left unpaid (Jiang & Dunn, 2013), lowering their credit scores and hindering their ability to save.

The Purpose of the Current Study

Researchers typically point to the individual's personal and familial characteristics when explaining the reasons behind a young adult's levels of credit card use and indebtedness (Robb & Sharpe, 2009; Xiao, Tang, Serido, & Shim, 2011). That is to say, it is thought that a young adult's financial knowledge and or the way a parent behaves financially may correlate with a young adult's inclination to use credit cards and accumulate debt (Lyons, 2004; Shim, Barber, Card, Xiao, & Serido, 2010; Xiao et al., 2011). Another equally important, yet understudied, explanation incorporates the characteristics of the community in which the young adult has lived. Recent studies have suggested that a person's street address—the community in which one grows up or lives—can be a key factor in determining their life outcomes (Chetty, Hendren, Kline, &

Saez, 2014; Clampet-Lundquist & Massey, 2008; Putnam, 2015). We do not know of any study that examines the relationships between community-level characteristics and credit card use specifically. However, this relationship is plausible given the existing research on community-level effects. For instance, a community's average credit score and or the presence or absence of mainstream financial institutions may predict how well a community prepares a young adult to make financial decisions, and these same characteristics may relate to the young adult's credit card use.

It is within these contexts that we undertook this study, and our purposes were two-fold: first, to examine the extent of emergent, outstanding credit card debt among a group of young adult college students during their first years in college between 2007 and 2009 (including their acquisition and accumulation of this type of debt); second, to ascertain any associations that might exist between community-level characteristics measured at the zip code level (unemployment rate, average household debt, average credit score, bank branch-office density) and the emergent, outstanding credit card debt accumulated by young adult college students. We should also note that our data collection process coincided with two macro-economic events that could have changed the way young adults interacted with credit cards. First, the young adults in our sample were making financial decisions at the height of the economic downturn known as the Great Recession that ranged from approximately 2007 to 2011. This means that, like millions of households across the US (Chakrabarti, Lee, van der Klaauw, & Zafar, 2015), young adult college students could have altered their use of debt in the face of an unpredictable economy that was retracting credit opportunities. Second, the implementation of the Credit Card Accountability, Responsibility, and Disclosure (CARD) Act of 2009 required cosignatories for credit card holders under age 21 and without proof of adequate income, prohibited credit card companies from advertising on or near college campuses and offering free gifts to encourage students to apply for credit cards. Opportunities to acquire and accumulate credit card debt may have been ubiquitous on college campuses prior to the implementation of the CARD Act and

during the time when our data was collected (Johnson, 2005). This meant that easy access to credit could have altered young adult college students' use of this type of debt. However, some research suggests that college students' access to credit has not changed much despite the CARD Act's implementation (Hawkins, 2012).

Acquiring and Accumulating Credit Card Debt

A number of previous studies have sought to determine whether individual and family characteristics could predict young adults' acquisition and accumulation of outstanding credit card debt. Many of these studies were conducted with samples of college students, who represent part of a broader category of inexperienced credit card users. One such study, for example, found that Black, Latino, and female college students were more likely to maintain revolving credit card balances as compared to White and male students (Grable & Joo, 2006; Lyons, 2004). Another of the studies found evidence suggesting that older college students who came from less advantaged socioeconomic backgrounds and without parents' financial support (Robb, 2011) were also more to likely to carry credit card debt (Robb, 2011; Robb & Sharpe, 2009). And yet another of study concluded that a young adult's financial knowledge was also related to their credit card debt acquisition and accumulation (Robb, 2011; Warwick & Mansfield, 2000). The authors of this third study found, for example, that those college students in their survey who had received financial instruction in a personal finance class taken in high school were more likely to have paid off in full each month the debt that had accumulated on their credit cards, when compared to those who had not received such instruction, (Robb, 2011). Taken together, a young adult's race or ethnicity, socioeconomic background, financial independence, or financial literacy may shape their credit behavior and, in light of these findings, our study controlled for these individual characteristics.

Those previous studies that looked to family characteristics for explanations also reached a number of apparent yet important conclusions. A number of study found, for instance, that parents play an important role in developing a young adult's financial health (Norvilitis &

MacLean, 2010; Shim et al, 2010; Shim, Xiao, Barber, & Lyons, 2009), including whether or not the young adult will develop a tendency to accrue credit card debt (Joo, Grable, & Bagwell, 2003). As socializers, parents typically model financial behaviors and provide hands-on training and first-hand experience, not only teaching in day-to-day interactions but also through direct intentional guidance. Parents' behaviors may help to shape their child's body of financial knowledge and may do so as strongly as, or even more strongly than, the behaviors of peers, work experiences, or information gained through formal financial education (Shim et al., 2010; Pinto, Parente, & Mansfield, 2005). One recent study has also found that not only does the parents' hands-on training and teaching (e.g., assistance with budgeting, saving) correlate with a reduced likelihood of credit card debt, but also the child's perceptions that parents will assist in dealing with problematic debt (Norvilitis & MacLean, 2010). Another study found that the parents' hands-on financial training or teaching of their child during childhood and adolescence relates indirectly to the child's level of debt during young adulthood (Shim et al., 2009). It has further been found that young adult college students also generally carried lower credit card balances if their parents had served as co-signors on their credit cards (Palmer, Pinto, & Parente, 2001), as compared to those peers who had assumed sole responsibility for their credit cards. All of these studies suggest that the socialization an individual experiences while living in the family home may be related to the individual's attitudes toward credit and may influence behavior by the time the individual reaches young adulthood and assumes more financial responsibilities.

A Community-Level Interpretation of Credit Card Debt: The Hypothesized Role of Collective Institutional Efficacy

Also notably absent from the extant literature is any consensus or even broad conjecture to the effect that the type of community in which a young adult grew up or at least lived for an extended period of time might also predict the young adult's credit card use and debt accumulation. There is a growing consensus among social science researchers that the community in which one grows up or lives may exert both a short- and long-term influence on a variety of

life outcomes (Chetty, Hendren, Kline, & Saez, 2014; Clampet-Lundquist & Massey, 2008; Katz, Kling, & Liebman, 2000; Rosenbaum, 1995), including financial outcomes such as earning income, gaining employment, and receiving public assistance (Chetty, Hendren, & Katz, 2015; Ludwig, Duncan, & Pinkston, 2005). Proponents of this notion argue that a community tends to be heterogeneous and thus provides a variety of resources and opportunities that its residents can leverage in order to achieve life outcomes. If this is so, and it seems reasonable to assume that it is, then it follows that some communities may be better than others at preparing young adults to gain access to credit and have opportunities to learn how to use credit wisely. Across the US, then, communities are collectively preparing young adult generations to make financial decisions.

The collective institutional efficacy of a community may be an underlying mechanism that can explain these effects, if in fact the community's individual members hold collective beliefs about their ability to exercise control over outcomes (Bandura, 2000; Morenoff, Sampson, & Raudenbush, 2001) and if those beliefs are related to the community's existing institutions (Elliott & M. S. Sherraden, 2013). In Bandura's (1997) conceptualization of self-efficacy, individuals are agents who are capable of applying behaviors to produce outcomes. The term, 'collective efficacy,' which is an extension of self-efficacy, refers to these shared beliefs about the community's ability to exercise control over outcomes (Bandura, 2000) and is often used to explain community-level violence and crime (Morenoff, Sampson, & Raudenbush, 2001; Sampson, 1997; Sampson, Morenoff, & Gannon-Rowley, 2002). For example, a community's level of violence may be reduced when its concentrations of poverty or unemployment are low and its collective efficacy is high (e.g., the extent to which trust exists among neighbors, whether neighbors will intervene on behalf of the community; Morenoff, Sampson, & Raudenbush, 2001; Sampson, 1997).

It may also be that individual members of a community develop beliefs about the extent to which the community and the institutions within it can facilitate the achievement of life outcomes. In this context, the term 'institutional efficacy' is used to refer to community members'

shared belief that "using institutional resources" can produce "designated levels of performance that influence events that affect their lives" (Elliott & M. S. Sherraden, 2013, p. 38)," events that, presumably include financial outcomes. For example, a community served by more (or more reputable) bank branch offices may signal that such institutions exist to serve the community and provide the financial products necessary for reaching financial goals, whereas a community served by fewer (or less reputable) branch offices may signal the opposite. Community members may develop collective, shared beliefs about a financial institution's ability to help them achieve their financial goals—beliefs that relate to whether and how community members use the institution's products, such as whether they open lines of credit or use credit cards.

Given the connections that apparently exist between a young adult's financial behaviors and the financial modeling and hands-on training provided by the young adult's parents (Shim et al., 2010; Pinto, Parente, & Mansfield, 2005), it is reasonable to assume that a young adult will adopt the community's shared beliefs (i.e., collective efficacy, institutional efficacy) about financial institutions and that these beliefs will relate to the young adult's financial outcomes. In light of the extensive research examining the role of collective efficacy as an explanation for community-level violence and crime (Morenoff, Sampson, & Raudenbush, 2001; Sampson, 1997; Sampson, Morenoff, & Gannon-Rowley, 2002), and also given recent research on an individual's institutional efficacy (Elliott & M. S. Sherraden, 2013), we suggest that collective institutional efficacy may be applicable for understanding how young adults develop beliefs about the institutions within their communities and that those beliefs can also be applicable for understanding their financial outcomes. As a preliminary test of these relationships, we explored how communities' unemployment rate, average household debt, average credit score, and bank branch density may relate to the emergent credit card debt of young adults during their college attendance.

Methods

Design

The data for this study were drawn from an ongoing, longitudinal study examining the financial behaviors of emerging adults and their associations with adult life success. To date, four waves of data have been collected: Wave 1 (T1) baseline data, collected in spring 2008 from first-year university students enrolled at a major, land-grant university and Wave 1.5 (T2) economic impact data collected in spring 2009; Wave 2 (T3) data during fourth year in college collected in fall 2010, and Wave 3 (T4) early career data collected in summer 2013. After receiving Human Subject Committee's approval for the baseline data collection, we invited the entire freshman class (approximately 6,000 students) to participate in the longitudinal study. We offered students a nominal incentive (e.g., $10 to the first 1,000 respondents and $5 to subsequent respondents) for their participation. The survey questionnaire was posted online throughout an 8-week period. The full sample comprised 2,098 first-year students representing 32% of the 2007 first-year cohort. For clarity, the waves of data are referred to as T1, T2, T3, and T4 from this point forward.

Following the global financial crisis of 2008, we launched an interim survey in winter 2009 (T2), to capture the immediate impact of the financial crisis on the students. This timing was important to understanding our data and interpreting the findings because young adult college students could have found themselves in a financial bind. Dwindling family financial support may have placed greater responsibility on young adult college students for affording on their own some of their college expenses (Settersten & Ray, 2010). At the same time, the economic downturn disproportionately affected young adults and made it more difficult for them to find employment (Bell & Blanchflower, 2011). As such, using credit may have been one of their limited choices. All T1 students who were still enrolled at the university (1,950 or 93% of the full sample) received an email invitation to take the brief (5-minute) follow-up survey. The email indicated that the first 500 students to complete the survey would receive a $10 incentive. A total of 748 students completed the survey in T2 (36% of the T1 sample). There were no significant differences in socioeconomic status, gender, or ethnicity between the baseline sample and the economic impact subsample. However, there was a significant difference in self-reported GPA,

with 77% of the subsample reporting a GPA greater than or equal to 3.0 compared to 67% of the

T1 respondents who reported a GPA greater than or equal to 3.0 ($p < .001$)[1].

Study Sample

As shown in Table 1, the study's primary sample included 748 young adult college

students who participated in T1 and T2 of data collection. The following sample characteristics

were based on students' information from T1. Two thirds of the sample were female (66%) and

one third was male (34%). The majority of the students identified as White (67%), with smaller

percentages identifying as Asian / Pacific Islander (11%), African American (3%), Latino (14%),

and other racial or ethnic groups (5%). Seventeen percent of the sample was made up of first-

generation college students and nearly half (43%) had achieved a GPA greater than 3.50. The

majority of students (87%) lived independently in either on- or off-campus housing, while the

remainder lived at home with parents (13%). Only 11% were financially independent from their

parents, and this group's average financial satisfaction score was 3.239 ($SD = 1.032$) on a five

point scale.

Most of the students surveyed had parents who were currently married (71%) and over

half of the parents (fathers: 60% and mothers: 56%) had achieved at least one college degree.

About half of the   parents (53%) of those students we surveyed reported that earning annual

household incomes below $99,000. Young adult college students reported their family had

difficulty paying bills and making ends meet more often than not averaging 3.802 ($SD = .819$) on

five point scale. On average, the sample reported that they had received financial socialization on

the use of credit at home (scoring a mean of 3.559 ($SD = .985$) on a five point scale).

Community-level characteristics were based on each student's reported permanent home

zip code and included the community's unemployment rate, debt level, and credit score and

density of bank branch-offices. For the entire sample, the average unemployment rate across all

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[1] Detailed descriptions of the design and sample are available in this report: Serido, J. & Shim, S. (2014) *Arizona Pathways to Life Success for University Students (APLUS) Wave 3 Life after college: Drivers for Life Success*. Available at http://aplus.arizona.edu/wave-3-report.pdf.

zip codes was 6.5% ($SD = 2.8\%$), a percentage that was consistent with the range of average US unemployment rate, which between the years 2007 and 2009 ranged from 5% to 9.5% (US Census Bureau, 2010). The average total debt reported was $111,287 ($SD = \$59,907$) and the average credit score was 704 ($SD = 32.349$). The communities (as identified by zip code) averaged between eight and nine bank branch offices ($M = 8.764$; $SD = 6.623$). Only 8% of these communities had no bank branch offices.

Variables

      Young adults' credit card debt. This outcome variable was measured at T2 by asking each student to state a total dollar amount owed on credit cards that had not been paid in full, representing the student's acquisition of outstanding or revolving debt and the amount owed. Descriptive amounts of young adult college students' debt acquisition and accumulation were reported for all four waves; however, we focused our analysis on their emergent credit card debt at T2 as reported in Tables 3 and 4.

      We chose to analyze credit card debt that was measured at T2 for three reasons. First, T2 occurred early in the data collection process (it was the second wave of five years of observation) and thus allowed us to examine the respondents' emerging credit card debt with respect to any community-level characteristics that may still have been exerting influence during spring semester of their second year (when T2 occurred). Second, the analysis of credit card debt measured at T2 allowed us to order the controls chronologically and test them longitudinally (against debt levels as measured at T1). Third, a higher percentage of the sample at T2 reported credit card debt (27%) than reported debt at T1 (18%), a difference that facilitated analyses using multiple control variables. Some of our analyses analyzed credit card debt measured at T2 among young adult college students who did not have any credit card debt at T1, the results of which are reported in Table 4. These were students who acquired their credit card debt during their first year in college ($N = 616$), as opposed to students who potentially entered college with this debt ($N = 748$). In addition to credit card debt, we also considered measuring young adult college students'

use of credit cards and the number of credit cards they owned as an outcome. However, this question was not asked in T2.

Young adults' individual characteristics. Eight measures were drawn from T1 and used to assess each respondent's individual characteristics, which included their gender (male = 1; female = 0), race (Other racial or ethnic groups = 4; Latino/a = 3; African American = 2; Asian or Pacific Islander = 1; White = 0), and status as a first-generation college student (yes = 1; no = 0). College grade-point average (GPA) was quantified categorically (≥ 3.50 = 3; ≥ 3.00 to < 3.50 = 2; ≥ 2.50 to < 3.00 = 1; < 2.50 = 0). The students were also asked whether they had taken a financial education class in high school (yes = 1; no = 0), if they were living dependently from their parents (yes = 1; no = 0), and if they were financially independent from their parents (yes = 1; no = 0). Overall financial satisfaction was measured on a scale ranging from 1 (lower satisfaction) to 5 (higher satisfaction) and was recorded as the average of the student's numerical responses to three questions that asked about satisfaction regarding their financial status, level of agreement regarding difficulty paying for things, and level of worrying regarding money. Each of the latter two questions was reverse coded.

Familial characteristics. The seven measures used to assess familial characteristics were drawn from T1 and included parents' marital status (married = 1; not married = 0) and each parent's education level (college degree or more = 2; some college = 1; high school degree or less = 0). Annual household income was defined categorically ($\geq \$200,000$ = 3; $\geq \$100,000$ to $< \$200,000$ = 2; $\geq \$50,000$ to $< \$100,000$ = 1; $< \$50,000$ = 0). The extent of financial hardship while growing up at home was calculated by finding the average of the student's numerical responses to three questions that asked the student to estimate, on scales of 1 (not difficult at all) to 5 (very difficult), the degree of difficulty parents experienced in paying monthly bills and meeting family financial needs and also the degree to which the family was financially worse off than other families in the neighborhood (1 = a lot better off; 5 = a lot worse off). Financial socialization was measured on a scale of 1 (strongly disagree) to 5 (strongly agree) and was

calculated by finding the average of the student's responses to six questions regarding whether, before coming to college, parents discussed such topics as how to establish a good credit rating and the importance of saving. Financial behavior was measured on a scale ranging from 1 (never) to 5 (always) and calculated by finding the average of the student's responses to six questions asking about the students' observed frequencies of parents' financial behaviors while growing up at home regarding such actions as paying credit card balances in full each month, tracking monthly expenses, and spending within a budget.

Community-Level Characteristics. The unit of analysis for community-level characteristics was at the zip code level and was based on respondents' permanent address. Zip codes were collected in the fall of 2007 from forms provided by students to the university registrar during their freshman orientation and assumed to be the zip codes of the communities in which students lived prior to starting their first year in college. Though it was not possible to measure the length of a student's residency in any of these zip codes, which would have been tantamount to measuring the duration of exposure to the communities' effects (Chetty, Hendren, & Katz, 2015), knowing the community's characteristics may still have added to our understanding of a student's financial opportunities and experiences prior to college enrollment. We did assume that any significant associations that emerged in the analyses could be interpreted as conservative estimates of the importance of the influence exerted by the community.

Community-level characteristics included unemployment rate, average total debt, average credit score, and number of bank branch-offices. To analyze each community-level characteristic, we first established categories based on percentiles (25th, 50th, and 75th). The unemployment rate was retrieved from the US Census Bureau's American Community Survey (ACS) and was averaged over five years between 2007 and 2011.[2] The average total debt and average credit score

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[2] The unemployment rate from the US Census Bureau used zip code tabulation areas (ZCTAs), which are an approximation of the US Postal Service zip codes. Only 2% of zip codes from the data set were unable to be matched to the ZCTAs, meaning that unemployment rates were missing for those zip codes. For information from where unemployment rate came, visit the US Census Bureau's website: https://ask.census.gov/faq.php?id=5000&faqId=227

were both retrieved from Equifax by searching by students' zip codes.[3] These numbers were both reported by Equifax as averages, and therefore it was not possible to report on median amounts of total debt by zip code. Average total debt summed outstanding credit card, mortgage, and auto debt and ranged from $6,016 to $538,949. Average credit score was a three digit score based on Equifax's model for determining credit worthiness and ranged from 576 to 780. Bank branch density was retrieved from the Federal Deposit Insurance Corporation's (FDIC) bank data and statistics[4] and measured the number of brick-and-mortar bank branches within the zip code, ranging from 0 to 44.

Analysis Plan

We analyzed the data in two phases, the first undertaken as a way to account for missing data. Rather than using the technique known as "listwise deletion" to limit any threat to validity and to improve generalizability (Rose & Fraser, 2008; Rubin, 1987; Saunders, Marrow-Howell, Spitznagel, Dore, Proctor, & Pescario, 2006), we used a method recommended by Little and Rubin (2002), which entails estimating the missing data when less than 20 percent of the variables is missing. This was the case with all the variables. To accomplish the estimates, we relied on the Expectation Maximization (EM) algorithm (Dempster, Laird, & Rubin, 1977), which uses maximum likelihood based on the observed data and employs an iterative estimation process (Little & Rubin, 2002).

In the second phase, we used Cragg's (1971) double-hurdle models to analyze credit card debt as reported in T2. Cragg's (1971) double-hurdle models were estimated by Stata (Stata Corp, 2011) to examine the acquisition and accumulation of this debt.[5] The double-hurdle approach was

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[3] For information from where average total debt and average credit score came, visit Equifax's website: http://www.equifax.com/places/
[4] For information from where bank branch density came, visit the FDIC's website: https://www2.fdic.gov/idasp/main.asp
[5] Multilevel and instrumental variable modeling approaches were also considered for the analyses. Multilevel modeling was ruled out because the sample size was insufficient for clustering at the zip code level given that in many instances there was only one observation per zip code. Instrumental variable modeling was ruled out because we believed that instrumenting on a single community-level characteristic was insufficient for understanding how a community—with variables measured on many dimensions

ideal for analyzing credit card debt because it assumed that a college student's acquisition or use of credit card debt was separate and should be examined separately from the amount of debt they accumulate (Cragg, 1971; Ricker-Gilbert, Jayne, & Chirwa, 2011; Yen & Jones, 1997). This assumption is similar to that made by the two-step Heckman (1979) selection model; however, Heckman's model was designed to analyze data when zeros are unobserved or missing. In the case of credit card debt, an observed value of $0 could effectively represent a college student's choice or preference to avoid this type of debt. An observed value of $0 could also represent a college student's inability to take on debt despite preferring to do so (because the student, for example, is discriminated against, has a limited credit history, or had parents who paid off their balances or took away their credit cards). Unfortunately, the data did not allow us to draw definitive conclusions about why particular students' credit card debt might equal $0. It could also be that once a student acquired debt, that acquisition did not typically lead to an accumulation of more debt. In other words, the extent to which the students in the sample were leveraged may have varied even among those that used credit cards to acquire debt, and their debt may have been unrelated to their preference to avoid debt and or their inability to access this type of debt.

The results reported in Tables 3 and 4 represent the probability that a student acquired credit card debt (hurdle 1; debt > $0 compared to debt = $0; $N = 748$ [all young adult college students]; $N = 616$ [young adult college students without credit card debt at T1]) and the value of accumulated credit card debt (hurdle 2; accumulating debt > $0; $n = 202$ [all young adult college students]; $n = 115$ [young adult college students without credit card debt at T1]). The students who reported no credit card debt at T1 were analyzed separately in order to exclude those who had entered college with credit card debt and for whom community-level characteristics may have had a stronger association. Thus, the models that analyzed data collected from students who

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including unemployment rate, average credit score, average total debt, and bank branch density—could be associated with young adult college students' credit card debt.

reported no credit card debt at T1 may have produced more conservative results. These results for students without credit card debt at T1 are reported in Table 4.

Results

Descriptive Results

There were linear increases in the descriptive patterns of the acquisition and accumulation of credit card debt between 2008 and 2013 (T1, T2, T3, and T4), as shown in Table 2 (columns 2 and 3). Eighteen percent of the students sampled had acquired credit card debt and carried debt at T1 when they were surveyed during their first year of college. Five years later at T4, over half (55%) had acquired credit card debt. Credit card debt accumulation followed a similar increase in a similar fashion as credit card debt acquisition. Among those students in 2008 who had acquired credit card debt that was greater than $0, the average amount   was $669. By 2013, that average amount of debt had quadrupled, reaching $2,665 among those with debt greater than $0.

[Insert Table 2 here]

Credit Card Debt Acquisition

Young adult college student's acquisition and accumulation of credit card debt used data from T1 and T2. Hurdle 1 (Tables 3 and 4) examined the acquisition of credit card debt apart from accumulation. The model shown in Table 3 included all the students in the subsample ($N =$ 748). As shown in Table 3 Model 1, if a student had achieved a GPA at or above 3.0 (as opposed to less than a 2.5), had scored higher on the financial satisfaction scale, if the student's parents had scored higher than the average on the modeling financial-behavior questions, and or if the student had lived in a community with a higher average total debt, then the student would be less likely to have acquired credit card debt. Having lived in a community with a higher average total debt was related to young adult college students' decreased likelihood of acquiring credit card debt.

The model in Table 4 included only those students who had not yet acquired any credit card debt when surveyed in T1 ($N = 616$). Those who were less likely to acquire any credit card debt at T2 (Table 4, Model 1) were from other racial or ethnic groups (as opposed to white), had achieved a GPA at or above 3.0 (as opposed to less than a 2.5), had a father with at least one college degree (as opposed to a high school diploma or less), had parents who scored higher on the modeling financial behavior questions, and lived in a community with an unemployment rate at or above 7% and or with a higher average total debt ($p < .10$). While there were differences regarding the significance of associations between community-level characteristics and young adult college students' credit card debt acquisition for those with and without debt at T1 (between Hurdle 1, Models 1 and 2), the patterns of the associations were similar.

[Insert Table 3 here]

Credit Card Debt Accumulation

Credit card debt accumulation was examined in the second hurdles of the double-hurdle models (as shown in Tables 3 and 4). The results presented in Hurdle 2 of Model 1 (as shown in Table 3) revealed that the student's reported lower levels of credit card debt accumulation was associated with having a GPA at 3.0 to 3.5 (as opposed to less than a 2.5 ($p < .10$), having parents whose household income ranged from $50,000 to $100,000 (as opposed to less than $50,000), and having parents who scored higher on providing their children with opportunities for financial socialization ($p < .10$). If a student had lived in a community with an unemployment rate at or above 4% (as opposed to less than 4%), with an average total credit score between 687 and 703 (compared to lower scores), and with a density of between one and three bank branches (as opposed to none), then student was more likely to report a greater accumulation of credit card debt.

The results presented in Hurdle 2 of Model 2 (as shown in Table 4) indicated some differences for young adult college students who did not have credit card debt at T1. Any of these students who reported having achieved a GPA of 3.0 or higher (as opposed to less than a 2.5) and

having parents whose household income was in the range of $50,000 to $100,000 were more likely to have reported a lesser accumulation of credit card debt. Living in a community with between one and three bank branch offices was also associated with ($p < .10$) a greater accumulation of credit card debt. There were differences regarding the significance of associations between community-level characteristics and young adult college students' credit card debt accumulation for those with and without debt at T1 (between Hurdle 2, Models 1 and 2), most notably between unemployment rate and average credit score. However, the patterns of the associations between community-level characteristics and young adult college students' credit card debt accumulation were similar for those with and without debt T1.

[Insert Table 4 here]

Discussion

Credit cards are an integral part of Americans' financial lives, including the financial lives of young adults; however, the overall credit card debt being accumulated by the current young adult generations is worrisome because it has been increasing at a significant rate over the past several years (Hodson & Dwyer, 2014; Holmes, 2014). This trend is especially concerning because many of these young adults are simultaneously accumulating student loan debt (Elliott & Lewis, 2015). If we are to reverse the trend, gaining a better understanding of the forces that may be driving so many young adult college students into what could become a debilitating level of debt might well be imperative.

This paper examines two aspects of young adult college students' emergent, outstanding credit card debt: their acquisition and accumulation of this debt during their first year in college and any associations that existed between the characteristics of the communities in which they lived prior to attending college and their debt. Our first key finding is that community-level characteristics are associated with the acquisition and accumulation of young adult college students' credit card debt. Moreover, these characteristics have the strongest associations with the amount of credit card debt that young adults accumulate even after controlling for individual and

familial characteristics. These findings provide empirical support for the assertion that the characteristics of the communities in which young adult college students grew up or lived continue to bear on how they use credit—even after attending college and in some cases leaving the communities that exerted these influences. A second and related finding, based on the similar patterns of relationships for young adults who entered college with and without credit card debt, suggests that associations between community-level characteristics and credit card debt may be irrespective of college. Our third key finding is that, on the whole, there are rather few differences between young adult college students who acquire credit card debt and those who do not across a number of their individual, familial, and community-level characteristics. This suggests that the acquisition of credit card debt is a rather common occurrence amongst the students in our sample. Taken together, the findings reported in this paper provide initial insights into young adult college students' early credit card use and the potentially influential role of their communities.

Acquiring Credit Card Debt

According to the data we analyzed, the percentage of young adult college students who acquired credit card debt while in college rose steadily over a five-year span, beginning at 18% in 2008 and ending at 55% in 2013. Even by the end of the second year of college (in 2009), the percentage of students in debt had topped 33%, or one third of the sample. Also, according to the data, several individual and/or familial characteristics may have helped some students avoid debt. A higher GPA, for example, appeared to offer protection, with a GPA of 3.00 or greater ($p < .10$, which is typically a B letter grade) being negatively associated with the probability of acquiring credit card debt. It is probable that GPAs could serve as a proxy for their financial aid packages, those students achieving higher GPAs also being more likely to have received more scholarships, grants, or other financial aid awards that afforded them a means of making purchases other than by using credit cards. Previous descriptive research adds credence to this explanation is plausible (Lyons & Hunt, 2003). Likewise, being more highly satisfied financially was negatively associated with the probability of acquiring this debt, suggesting that those who worried less

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about money and reported being more easily able to pay for expenses may not have had to rely as much on credit cards compared to their counterparts who were less satisfied financially. Survey respondents who achieved higher scores on questions relating to their parents' financial behavior were also more likely to report less credit card debt acquisition. Those who reported observing their parents' budgeting behaviors and spending responsibly, paying credit cards in full and on time, and saving for the future also were less likely to have accumulated debt (Xiao, Serido, & Shim, 2011; Shim, Xiao, Barber, & Lyons, 2009).

Even though we were unable to directly measure the mechanism by which these forces were able to exert their influence, we posited that collective institutional efficacy could mediate the relationship between community-level characteristics and the credit card debt acquired by young adult college students. We hypothesized that community-level characteristics would be associated with the probability that young adult college students would acquire credit card debt. Among all young adult college students in our sample, a community's higher average total credit card debt was associated with the decreased probability of acquiring credit card debt. Communities with higher debt may have also been communities with more resources and, along these lines, a young adult college student from a high resource community may not have needed to acquire credit of their own. Among those who began to accumulate credit card debt in college, we find that a young adult was less likely to have acquired credit card debt when they lived in a community with an unemployment rate above 7%, which is above the national average (US Bureau of Labor Statistics, 2015). In light of this finding, we will surmise that while a community's high unemployment rate may have signaled a limited labor market, how the labor market's dynamics related to the acquisition of debt is unclear. Nevertheless, it would seem that having a steady source of income can be a prerequisite for opening a credit account (Johnston, 2015; Kinsey, 1981), and if so, then young adults may be less likely to buy on credit and accumulate debt if the community in which they lived could not provide them employment.

Accumulating Credit Card Debt

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The total amount of credit card debt accumulated by young adult college students rose over the five years of the survey, and nearly quadrupled among those who accumulated debt greater than $0, with average low totals of $699 and $657 in 2008 and 2009, respectively, and an average high total of $2,665 in 2013. In other words, the amount of emergent debt remained steady during the first year of college but apparently increased dramatically toward the end of the last year. Individual and/or familial characteristics proved to be related to their emergent, accumulated credit card debt in 2009. GPA, which also proved to be related to their credit card debt acquisition, had a protective, trend-level relationship with accumulated debt. Young adult college students who appeared to also accumulate less debt ($p < .10$) if their parents reported engaging more often in behaviors like paying off credit card debt and tracking expenses. While this relationship was significant at trend-level, previous research suggests that students who accumulate less credit card debt are more likely to have been raised by parents who carried have less credit card debt and were also willing to assist their children with credit matters such as serving as cosignatories or paying off the student's debt balances (Palmer, Pinto, & Parente, 2001). Young adult college students whose parents earned moderate incomes were also more likely to have accumulated significantly less debt compared to their lower-income counterparts. These young adults may have themselves had more financial resources and thus been better able to avoid accumulating debt; they may have, for example, relied on their parents' resources instead of making purchases on credit or their parents may have been better able to help them avoid debt accumulation.

We found evidence of a direct relationship between community-level characteristics and young adult college students' credit card debt accumulation. In fact, the models showed that some of the strongest associations were between community-level characteristics and debt accumulation. A higher unemployment rate within the community was found to be associated with greater debt accumulation. In fact, those respondents who had lived in a community with an unemployment rate at or above 7%, reported an increase in credit card debt accumulation that

averaged 63%. In other words, a debt of $657 (the average in 2009), would rise by $414. An average credit score between 687 and 703 within the community correlated with a 49% decrease in credit card debt accumulation (or a decrease of $322 based on the same average accumulated credit card debt). If a respondent had lived in a community with one to three bank branch offices, the respondent was more likely to have suffered a debt increase of 68% ($447).

These significant correlations provide evidence to support our suppositions concerning collective institutional efficacy, most notably in regards to the positive association between having lived in communities with one to three bank branch offices and accumulating more credit card debt. In these communities, students may have been socialized to believe banks are trustworthy and important conduits for achieving financial goals. It seems plausible that for these associations to exist after almost a full year of attending college and living outside the childhood community, a young adult must have retained some of the community's collective beliefs about banks. Community-level characteristics may also have ceiling effects and nonlinear relationships with young adult college students' credit card debt. For example, the number of bank branch offices is not significantly associated with credit card debt accumulation once that number surpasses three, and any number above eight has a negative relationship. For some communities, there may be a 'tipping point' in which community-level characteristics such as bank branch office density contribute positively to financial outcomes. In any case, additional empirical research is needed to confirm these findings and to determine whether collective institutional efficacy can help explain these relationships.

Limitations

Our study is one of the first to use a longitudinal dataset to confirm the correlation between community-level characteristics measured at the zip code level and young adult college students' credit card debt. It is also one of the first to speculate that collective institutional efficacy might be the   mechanism driving this apparent relationships. However, since we were unable to directly measure collective institutional efficacy and its relationship to young adult

college students' credit card debt (given that reasonable proxies were not available), we could not test this hypothesis. The database we relied on also did not contain data on the length of time that its respondents had lived in their communities prior to attending college, nor did it provide us information about the respondent's residential mobility between communities. Consequently, we could not determine the length of time a respondent had been exposed to a community's influence, and so we could not determine whether the length of a respondent's residence in a community correlated with outcomes, even though it seems reasonable to assume that there should be a correlation given that similar relationships have been found by other researchers. Chetty, Hendren, and Katz (2015), for example, were able to show that adults fared better on a number of outcomes across the domains of education, finance, and health if they had moved to socio-economically wealthier communities earlier in their childhoods than those who had moved into such communities later in their childhoods. Another study found that residential mobility tends to be lower among residents of socio-economically poorer communities and among young adults that lack a college education (Coulter & van Ham, 2013; Rosenblatt & DeLuca, 2012; Steele, Clarke, & Washbrook, 2013). Put simply, the influence exerted by a person's community may produce effects that persist throughout the person's life. If so, then it would seem reasonable to assume that a person's lifelong financial behaviors might well be shaped by the financial behaviors and attitudes of the community in which he or she grew up. However, given the data we had, we were unable to test this assumption. Future research on young adults' financial behaviors should take residential mobility and duration of exposure into consideration.

We were also unable to account for selection into communities (Hedman & van Ham, 2012), so we could not discern whether a community's characteristics did in fact encourage the students in the survey to acquire credit card debt or whether their financial behavior was instead a result of selection into the their communities for which zip code level information was collected. We cannot generalize the findings to apply to all young adults or even to all young adult college

students because the dataset we used had been derived from a limited sample (young adults currently attending college at a major, land-grant university in the southwestern US).

Future Research

This study is one of the first to longitudinally examine the relationship between community-level characteristics measured at the zip code level and young adult college students' credit card debt and to put forth collective institutional efficacy as a potential mechanism to explain these relationships. Future research should empirically test whether and how a community and its characteristics can have impact on a range of financial outcomes for their residents. While we measured the number of bank branch offices within a community, future research should measure the range of financial institutions within a community and how they interact to affect financial outcomes. It may be that the number or types financial institutions— including bank branch offices, ATM machines, payday lenders, and post office, retail, or grocery stores that offer check cashing services—have differing and interacting effects on outcomes. Residents of a community with fewer bank branch offices and more payday lenders, for example, may own checking or savings accounts less often and accumulate higher outstanding debt. Future research should also consider how the length of residency within a community and duration of exposure to a community's financial institutions may relate to financial outcomes. There may be different relationships with downstream financial outcomes for someone who lived in a community without any bank branch offices during their entire childhood—and internalized that community's beliefs about financial institutions—when compared to someone who lived in that same community for just a few short years. Future research should also test collective institutional efficacy as a mediator between community-level characteristics and financial outcomes. The findings from this research may help understand how communities can be better capacitated to support the financial goals of their residents.

Conclusion

Since it is well established that credit card debt in the US has the potential to hinder the achievement of financial goals (Hodson & Dwyer, 2014; Jiang & Dunn, 2013), we can reasonably conclude that college students who rely on credit cards to pay their bills should try manage their debt accumulation carefully in order to avoid financial ruin. While parents and other family members may influence the financial behaviors of young adults, the findings presented in this paper suggest that the community in which young adults grows up may also exert some level of influence. This influence could affect young adults' financial behaviors, even for a considerable time after they leave the community and family home and begin to live more independently. Along these lines, future research should consider contextual explanations of young adults' financial behaviors that include how the community in which one grows up or lives and the opportunities within can enable or hinder one's financial outcomes.

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Table 1: Sample Characteristics (*N* = 748)

	Percent / Mean (SD)
Young Adults' Individual Characteristics	
Gender	
Male	34
Female	66
Race	
White	67
Asian or Pacific Islander	11
African American	3
Latino	14
Other racial or ethnic group	5
First generation college student	17
GPA	
< 2.50	10
≥ 2.50 to < 3.00	15
≥ 3.00 to < 3.50	32
≥ 3.50	43
Residence during the academic year	
Lives independently from parents (university housing [residence hall, fraternity/sorority], apartment, or home)	87
Lives at home with parents	13
Financially independent from parents	11
Financial satisfaction scale	3.239 (1.032)
Received financial education in high school	75
Familial Characteristics	
Parents' marital status	
Married	71
Not married	29
Father's education level	
High school degree or less	21
Some college	19
College degree or more	60
Mother's education level	
High school degree or less	22
Some college	22
College degree or more	56
Annual household income	
< $50,000	18
≥ $50,000 to < $100,000	35
≥ $100,000 to < $200,000	33
≥ $200,000	14
Financial hardship scale	3.802 (.819)
Financial socialization scale	3.559 (.985)
Financial behavior scale	3.749 (.925)
Community Characteristics	
Unemployment rate (average)	.065 (.028)

Unemployment rate (categories based on percentiles)	
< 4%	9
≥ 4% to < 6%	32
≥ 6% to < 7%	13
≥ 7%	45
Total debt (average)	$111,287 ($59,907)
Total debt (log transformed)	11.486 (.511)
Credit score (average)	704 (32.349)
Credit score (categories based on percentiles)	
< 687	32
≥ 687 to < 703	19
≥ 703 to < 729	25
≥ 729	24
Bank branch density (average)	8.764 (6.623)
Bank branch density (categories based on the mean)	
0	8
≥ 1 to < 4	17
≥ 4 to < 8	21
≥ 8	54

Source: Data restricted to young adult college students who participated in both T1 and T2 of the APLUS Data. Missing data was estimated using the Expectation Maximization (EM) method of imputation.

Table 2: Young Adult College Students' Credit Card Debt ($N = 748$)

	Percent with Credit Card Debt		Value of Accumulated Credit Card Debt			
	Has Credit Card Debt	Does Not Have Credit Card Debt	Non-Transformed Value		Log-Transformed Value	
	Percent (*n*)	Percent (*n*)	Mean (SD)		Mean (SD)	
			(w/ debt = $0)	(debt > $0)	(w/ debt = $0)	(debt > $0)
2008	18 (132)	82 (616)	$107 ($474)	$669 ($1,019)	.939 (2.201)	5.883 (1.107)
2009	27 (202)	73 (546)	$157 ($399)	$657 ($583)	1.653 (2.757)	6.120 (.884)
2010	41 (309)	59 (439)	$326 ($774)	$1,101 ($1,084)	1.933 (3.040)	8.200 (1.489)
2013	55 (410)	45 (338)	$923 ($2,267)	$2,665 ($3,199)	2.514 (3.532)	7.261 (1.224)

Source: Data restricted to young adult college students who participated in both T1 and T2 of the APLUS Data. Missing data was estimated using the Expectation Maximization (EM) method of imputation.

Note: Across all four years, 69% of the sample accumulated credit card debt. The values of accumulated credit card debt were calculated with and without young adults who reported not accumulating any credit card debt. For example, in 2008 18% of the sample had some amount of credit card debt and 82% of the sample did not have any credit card debt. The mean accumulated value of debt of $107 included young adults who did not have any credit card debt (w/ debt = $0) and the value of $669 included only young adults who accumulated debt greater than $0 (debt > $0).

Table 3: Cragg's Double-Hurdle Models Predicting Young Adult College Students' 2009 Credit Card Debt (Log Transformed; *N* = 748)

	Model 1			
	Hurdle 1		**Hurdle 2**	
	Probability of Acquiring Credit Card Debt (*N* = 748)		Value of Accumulated Credit Card Debt (*n* = 202)	
	β	(SE)	β	(SE)
Young Adults' Individual Characteristics				
Male	−.076	(.111)	.132	(.126)
Race (Reference group: White)				
Asian or Pacific Islander	.185	(.177)	−.096	(.180)
African American	.447	(.299)	−.028	(.272)
Latino	.169	(.156)	.132	(.163)
Other racial or ethnic group	−.287	(.271)	−.021	(.290)
First generation college student	−.069	(.177)	.120	(.170)
GPA (Reference group: < 2.50)				
≥ 2.50 to < 3.00	−.311	(.209)	−.290	(.204)
≥ 3.00 to < 3.50	−.359†	(.187)	−.327†	(.180)
≥ 3.50	−.592**	(.185)	−.281	(.131)
Lives independently from parents	−.086	(.162)	−.192	(.170)
Financially independent from parents	.288	(.169)	.065	(.169)
Financial satisfaction scale	−.227***	(.059)	−.045	(.067)
Financial education classes in high school	.213	(.130)	−.052	(.149)
Familial Characteristics				
Parents' marital status	.011	(.124)	−.115	(.129)
Father's education level (Reference group: High school degree or less)				
Some college	.110	(.168)	−.003	(.168)
College degree or more	−.215	(.173)	−.038	(.177)
Mother's education level (Reference group: High school degree or less)				
Some college	−.213	(.173)	−.231	(.177)
College degree or more	−.149	(.165)	−.025	(.167)
Annual household income (Reference group: < $50,000)				
≥ $50,000 to < $100,000	−.142	(.157)	−.384*	(.161)
≥ $100,000 to < $200,000	.009	(.176)	−.076	(.189)
≥ $200,000	.249	(.226)	−.117	(.242)
Financial hardship scale	.080	(.083)	.066	(.087)
Financial socialization scale	.075	(.069)	−.128†	(.072)
Financial behavior scale	−.166*	(.075)	.004	(.078)
Community Characteristics				
Unemployment rate (Reference group: < 4%)				
≥ 4% to < 6%	−.183	(.197)	.449*	(.213)

	β	SE	β	SE
≥ 6% to < 7%	−.207	(.227)	.758**	(.243)
≥ 7%	−.277	(.217)	.634**	(.241)
Average total debt (log)	−.402**	(.151)	.098	(.167)
Average credit score (Reference group: < 687)				
≥ 687 to < 703	−.097	(.170)	−.492**	(.189)
≥ 703 to < 729	.107	(.186)	.093	(.212)
≥ 729	.066	(.208)	−.224	(.243)
Bank branch density (Reference group: None)				
≥ 1 to < 4	.281	(.235)	.677*	(.264)
≥ 4 to < 8	−.038	(.231)	.110	(.262)
≥ 8	.333	(.205)	−.004	(.227)
R^2	.115		--	
Model Constant	5.235**	(1.767)	5.053*	(1.961)
Sigma Constant	.758***	(.038)	.758***	(.038)

Source: Data restricted to young adult college students who participated in both T1 and T2 of the APLUS Data. Missing data was estimated using the Expectation Maximization (EM) method of imputation.

Notes. β = regression coefficient; SE = Robust standard error.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, † $p < .10$

Table 4: Cragg's Double-Hurdle Models Predicting Young Adult College Students' 2009 Credit Card Debt, Only Among Those without Debt at Wave 1 (Log Transformed; $N = 616$)

	Model 2			
	Hurdle 1		Hurdle 2	
	Probability of Acquiring Credit Card Debt ($N = 616$)		Value of Accumulated Credit Card Debt ($n = 115$)	
	β	(SE)	β	(SE)
Young Adults' Individual Characteristics				
Male	−.092	(.134)	.234	(.170)
Race (Reference group: White)				
Asian or Pacific Islander	−.077	(.227)	−.191	(.268)
African American	.504	(.342)	−.256	(.329)
Latino	−.095	(.194)	−.235	(.231)
Other racial or ethnic group	−.985*	(.512)	.104	(.904)
First generation college student	.107	(.213)	.265	(.234)
GPA (Reference group: < 2.50)				
≥ 2.50 to < 3.00	−.396	(.241)	−.406	(.266)
≥ 3.00 to < 3.50	−.547*	(.241)	−.673**	(.248)
≥ 3.50	−.707**	(.214)	−.489*	(.242)
Lives independently from parents	−.062	(.207)	−.150	(.246)
Financially independent from parents	.106	(.210)	−.248	(.242)
Financial satisfaction scale	−.108	(.072)	−.017	(.097)
Financial education classes in high school	.160	(.156)	−.137	(.191)
Familial Characteristics				
Parents' marital status	.052	(.149)	−.074	(.176)
Father's education level (Reference group: High school degree or less)				
Some college	−.075	(.205)	.037	(.252)
College degree or more	−.443*	(.212)	.057	(.250)
Mother's education level (Reference group: High school degree or less)				
Some college	−.015	(.215)	−.070	(.241)
College degree or more	−.050	(.209)	.144	(.230)
Annual household income (Reference group: < $50,000)				
≥ $50,000 to < $100,000	−.124	(.192)	−.486*	(.227)
≥ $100,000 to < $200,000	−.065	(.214)	−.180	(.262)
≥ $200,000	.221	(.267)	−.239	(.311)
Financial hardship scale	−.008	(.101)	.100	(.114)
Financial socialization scale	−.101	(.082)	−.136	(.091)
Financial behavior scale	−.099*	(.092)	.015	(.118)
Community Characteristics				
Unemployment rate (Reference group: < 4%)				
≥ 4% to < 6%	−.239	(.223)	.271	(.255)

	β	SE	β	SE
≥ 6% to < 7%	−.334	(.256)	.411	(.282)
≥ 7%	−.521*	(.247)	.305	(.290)
Average total debt (log)	−.344†	(.184)	.219	(.222)
Average credit score (Reference group: < 687)				
≥ 687 to < 703	.154	(.197)	−.310	(.235)
≥ 703 to < 729	.124	(.219)	−.099	(.271)
≥ 729	.108	(.240)	−.418	(.287)
Bank branch density (Reference group: None)				
≥ 1 to < 4	.150	(.289)	.661†	(.376)
≥ 4 to < 8	.085	(.277)	.417	(.358)
≥ 8	.299	(.253)	.034	(.332)
R^2	.100		--	
Model Constant	4.305*	(2.160)	3.630	(2.690)
Sigma Constant	.699***	(.046)	.758***	(.038)

Source: Data restricted to young adult college students who participated in both T1 and T2 of the APLUS Data and who did not have any credit card debt at Wave 1. Missing data was estimated using the Expectation Maximization (EM) method of imputation.

Notes. β = regression coefficient; SE = Robust standard error.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, † $p < .10$