

Student-loan and depression: Implications for higher education educators

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ABSTRACT

Research indicates that student loans have negative implications on students' mental health, including depression. However, research on the mechanism by which the student loan leads to depression has lagged. Drawing from the hopelessness theory of depression, this paper investigates the mediating role of negative financial management behaviors as a pathway from student loans to depression. Additionally, the paper discusses implications and interventions that educators can design in their classrooms. The data was collected using IRB-approved questionnaires from 318 undergraduate students at a large public university in the Southwest United States. Preachers and Hayes Process macros were used to test the moderated mediation. Results reveal that negative financial management behaviors mediate the path from student loans to depression. The paper provides tips for educators on how to incorporate discussions on financial management behaviors and mental health in their classrooms. After performing an extensive search, this study seems to be the first to examine the relationship between student loans, negative financial management behavior, and depression among currently enrolled undergraduate students.

Keywords: Student Loan, Depression, Negative Financial Management Behavior, Resilience, Moderated Mediation

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INTRODUCTION

The student loan is a topic of significant concern for educators because of its implications on students' academic performance and wellbeing. According to the Institute of College Access and Success, in 2018, two out of three graduating seniors in the USA had student loan debt, with an average borrowing of \$29,200. Students pay high tuition fees and are financially stressed (Godek et al., 2015; Matthews, 2017; Hamdani, 2021; Valadez & Rodriguez, 2016), which negatively influences students' attrition (Borden et al., 2008), academic performance (Crocker & Luhtanen, 2003; Baker & Montalto, 2019) and their retention in the university (Crocker & Luhtanen, 2003). Student loans have been associated with low psychological functioning (Walsemann et al., 2015), financial anxiety (Archuleta et al., 2013; Aldrovandi et al., 2015), insomnia, and depression (Cooke et al., 2004; Nissen et al., 2019; Tran et al., 2018).

Universities in the United States offer different resources and services to help students with student loans and mental health problems. However, these services take place outside the classroom, and even if they are available, not all students may take advantage of them (Yorgason et al., 2008). An interesting question is what educators can do in their classes to help students. To answer this question and design appropriate interventions, it is essential to understand how student loans influence depression. The purpose of this paper is to uncover the role of negative financial management behavior (NFMB) as a potential mediator in the relationship between student loans and depression. Student loans provide recipients with a substantial amount of money that can be used to pay tuition and living expenses. However, the students may not be equipped with the knowledge or foresight to manage this money responsibly. They may engage in impulsive buying, which may add to their mental health issues later. This paper seeks to ask two questions: Do the student loans increase NFMB? Does engaging in NFMB ultimately lead to depression?

The paper draws from the hopelessness theory of depression (Abramson et al., 1989), and tests the relationship between student loans, NFMB, and depression. Not all students who take student loans and engage in NFMB, however, would suffer from depression. Past research indicates that individuals' resilience (the tendency to navigate and bounce back from hardship) and social-support seeking behavior (a behavior through which individuals can receive information and emotional support) can help to mitigate depression (Lin & Dean, 1984; Paykel, 1994; Roy & Steptoe, 1994; Block & Kremen, 1996; Werner & Smith, 1992). Drawing from these studies, this paper investigates the role of trait resilience and students' support-seeking behavior (SSSB) as moderators in the relationship between NFMB and depression. The paper discusses the implications of the study results for designing interventions in classes to mitigate the problems related to student loans.

THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

The National Institute of Mental Health (NIMH) defines depression as a serious mood disorder that affects how individuals think, feel, and handle their daily life. When depressed, individuals tend to feel sad, low, and empty. They may experience a loss of interest even in the activities that once were pleasurable to them (Klinger, 1993; Hammen & Watkins, 2008). Further, depression may cause problems with sleep, eating, concentration, and feelings of self-worth (Gotlib & Hammen, 2008; Lakdawalla et al., 2007).

According to the NIMH, adults between the ages of 18 to 25 were the single largest group suffering from depression in the US in 2017. The latest survey done by the American College of Health Association (ACHA) in the fall of 2019 reports that out of the 30,000 undergraduate students who participated in the survey, around 19.1% of the students had been diagnosed by health care professionals as having depression (ACHA-NCHA III, 2019). Sadly, depression is a common mental health condition influencing students' lives and their academic performance on US campuses (DeRoma et al., 2009; Smith et al., 2001; Wong & Whitaker, 1993).

The hopelessness theory of depression (Abramson et al., 1989), a prominent theory that has received wide empirical support (Abramson et al., 2002; Liu et al., 2015; Scher et al., 2005), was used to understand how and when student loan taking can lead students into depression. The theory suggests that when faced with an aversive life event, individuals tend to make sense of the situation by inferring i) why the situation occurred (internal versus external cause), ii) what the consequences are of the event (global versus specific), and iii) what personal inferences might be made about themselves (unstable versus stable characteristics). The theory predicts that individuals are likely to feel hopelessness and, ultimately, depression when they infer that the negative event resulted because of themselves (i.e., an internal cause) rather than external factors and, the event affects their whole life (global) that the cause of the adverse event is stable.

Student Loan and Depression

Student loans are taken to pay for higher education, typically when students would otherwise not have the financial resources to attend college (Walsemann et al., 2015). Research suggests that such loans can negatively impact students' mental wellbeing (Law, 2014; Nissen et al., 2019; Sato et al., 2020; Tran et al., 2018; Walsemann et al., 2015), increase their likelihood of dropping-out (Baker et al., 2017; Britt et al., 2017), and cause strain in family relationships (Antonucci, 2016).

Student loan taking can increase depression for several reasons. Students are obliged to pay back the loan, and unlike other loans, student loans are not forgiven even in standard bankruptcy filings (Hancock, 2009; Walsemann et al., 2015). Knowing that they are responsible for paying back the loan after graduation may put extra stress on them. Further, attributing the loan taking and loan repayment to their internal cause; their own choice rather than an external cause can exacerbate their sense of hopelessness (Abramson et al., 1989).

In addition, student loans have long term consequences, across different areas of life, making it a global event in students' lives. Student loans delay adult life transitions (Gicheva, 2016; Goldrick-Rab, 2016; Seig & Wang, 2018). For instance, student loans have increased the likelihood of children staying with parents (McKee, 2012) and delaying homeownership (Velez, et al., 2019). Additionally, students who had taken student loans were more likely to defer marriage and starting a family (Gicheva, 2011; Hodson & Dwyer, 2014; McKee, 2012). Knowing the influence of student loans on adult life transitions can induce fear and uncertainty in students' minds. Stress induced by the need to pay back student loans can be exacerbated by limited earning potential. The nature of work is changing. Jobs have shifted from manufacturing to service jobs, and these jobs are increasingly contractual and prone to automation (Bosio et al., 2018; Friga et al., 2003). These conditions may increase uncertainty for students regarding their future earning potential, ability to pay back student debt, and pose a mental health risk (Law, 2014). As the hopelessness theory of depression (Abramson et al., 1989) suggests these "internal

and global effects" of the student loan increase uncertainty and hopelessness among students and may lead students to depression(as indicated in Figure 1).

H1: Student loan is positively associated with depression of students currently enrolled in school.

Negative Financial Management Behavior as a Mediator

Financial management behaviors are actions and decisions related to an individual's management of finances, including financial planning, saving money, controlling spending, paying off bills, and providing for oneself and family (Garman et al., 1996; Montalto et al., 2019; Rabbani et al., 2021; Topa et al., 2018). Negative financial management behaviors (NFMB) are actions and decisions of individuals that increase their vulnerability to negative financial consequences. These behaviors include compulsive buying, in which an individual engages in repetitive purchasing behaviors to mitigate negative feelings (O'Guinn & Faber, 1989), and impulsive buying behaviors, in which individuals buy something because of a sudden urge and instinct to buy (Rook, 1987). Other examples include regular gambling, overspending money, delaying paying bills, and installment debts. By engaging in negative financial behaviors, individuals may lose their ability to keep their finances under control and tend to experience negative economic consequences.

Taking a student loan increases a student's short-term liquidity and provides the opportunity to attend an undergraduate program that otherwise may not have been possible. Although the loan might help ease stress due to immediate financial concerns (such as how to pay a semester's tuition), access to additional funds can lead to overspending Cadena & Keys, 2013). Extra liquidity offered by the student loan can trigger students' desire to conform with their peer group, ultimately spending money for purposes other than what is practically necessary.

Money becomes an essential means that enables students to participate in activities, buy desirable material goods, and attend events to gain their desired peer groups' approval. Students face high stress and social pressure to conform to the norms of their peer groups and to meet the standards of their aspirational groups (Moffatt, 1989; Wang & Xiao, 2009). Spending can lead to positive rewards for the short-term such as more friends and popularity among a peer group, which might help students enhance their self-esteem and feel a change in their status (Hanley & Wihelm, 1992; Wang & Xiao, 2009). These short-term advantages may set the stage for long-term negative consequences in the form of mounting debt. To avoid this debt challenge, students must continuously avoid their temptations to spend money on restaurants, beer, and football tickets (Cadena & Keys, 2013).

One can argue that students with NFMB are more likely to seek student loans. However, college students are below 25, they do not have enough time to earn a substantial sum of money prior to university attendance that would prompt the development of financial management skills (either positive or negative). Without significant time prior to attending an undergraduate program in which money could be earned and financial management behaviors developed, these students may be more prone to making bad financial decisions after taking a student loan and suffering from the consequences. Hence, student loans can facilitate the development of NFMB by providing short-term liquidity to fulfill desires that are highly valued among student communities, such as drinking, shopping, and buying tickets to concerts and games.

H2: Student loan is positively associated with NFMB of students currently enrolled in school.

Negative Financial Management Behavior and Depression

Although rewarding for a short time, NFMB can lead to long-term negative consequences for students. By engaging in overspending, students may lose confidence in their ability to manage their finances. Loss of self-efficacy in managing finances tends to make it difficult for the individual to formulate financial plans, making it even harder to overcome their financial problems (Lown, 2011). As a result, students may experience a sense of hopelessness (Abramson et al., 1989). Students' increased hopelessness in their ability to manage their finances can lead them to depression.

H3: NFMB is positively associated with depression of students currently enrolled in school.

H4: NFMB mediates the relationship between student loans and depression.

Trait Resilience and Social Support Seeking Behavior as Moderators

Although NFMBs may trigger the onset of depression, not all students who engage in such actions are depressed. In this section, the role of trait resilience and social support seeking behavior (SSSB) as moderators that influence the relationship between NFMBs and depression is examined.

Trait Resilience as a Moderator

Resilience refers to the individuals' ability to bounce back and recover from stress (Smith et al., 2008). Individuals with high levels of resilience are able to regulate themselves under adversities (Block & Kremen, 1996; Fredrickson & Levenson, 1998; Isen et al., 1987; Loh et al., 2014). They are also likely to reframe their adverse experiences in a more positive light (Fredrickson et al., 2003; Loh et al., 2014). As such, resilient students may not lose hope (Solano et al., 2016) when faced with difficult financial situations and instead manage their responses so that they may still be able to achieve their financial goals. Further, resilient students may also reframe their NFMB in the past as a new lesson to be learned. Past research indicates, "Resilience allows for not only reactive recovery but also proactive learning and growth through conquering challenges" (Youssef & Luthans, 2007, p.778). Hence, NFMB is less likely to cause depression for high trait resilience individuals.

H5: Trait resilience moderates the relationship between NFMB and depression such that when trait resilience is high, students are less likely to be depressed.

Social Support Seeking Behaviors as a Moderator

Social support refers to the emotional and informational support that students can receive from others. Students can receive social support from multiple sources, including parents,

instructors, friends, classmates, and counselors (Awang et al., 2014). Social support can enhance positive emotions and help students to build financial knowledge (Nicpon et al., 2006; Robb & Sharpe, 2009). Those students who seek help may thus view their situations less negatively than those lacking social support (Cohen & Wills, 1985; Mitchell et al., 1982). This additional help can increase students' sense of hopefulness in managing their finances and overcoming financial adversity in the future. As such, social support seeking behavior (SSSB) can build resources and lessen the impact of NFMB on depression. Hence,

H6: Social support seeking behavior moderates the relationship between negative financial management behavior and depression such that when social support seeking behavior is high, students are less likely to be depressed.

METHODS

Participants and Procedures: Undergraduate students at a university in the Southwest United States were surveyed. Given incomplete or single value responses across instruments, only 318 out of 390 student responses were utilized for analysis. Around 82% were under 25 years old, 191 (60.1%) were male, 114 (35.8%) were White, 78 (24.5%) were Latino, 50 (15.7%) were Asian, 49 (15.4%) were Black, and 9 (2.8%) were Middle Eastern. Additionally, 146 (45.9%) of the students had taken a loan to pay for at least part of their education. Instruments used to measure the variables of interest, described in the next section, were administered via Qualtrics in the Fall semester of 2019 after the Institutional Review Board granted the study's approval. If students chose to take part in the study, their written consent was taken electronically, and they were awarded extra credit in their course for completing the survey.

Measures

Depression: To assess students' depression, the Center for Epidemiological Studies Depression (CESD) scale (Radloff, 1977) was utilized. The survey asked the students to evaluate how often they experienced a variety of depressive symptoms in the past month using a four-point scale (1= "Rarely" to 4 = "Most of the time"). The CESD scale consisted of twenty items; however, after performing the factor analysis, five items were dropped because of low factor loadings (less than 0.50 loadings). Four of the five items dropped were reverse coded items, including, "I felt hopeful about the future." The final scale consisted of fifteen items, including, "I was bothered by things that usually don't bother me" ($\alpha = .93$).

Student Loan: The survey asked students to indicate whether they have ever taken a student loan to pay for at least a portion of their college attendance cost, including any federal or private loans using "Yes" or "No" response. The students were explicitly told not to include loans taken by their parents for this question.

Negative Financial Management Behaviors: NFMBs was measured using the scale published in a national study of college students (Study on Collegiate Financial Wellness study, 2017). Students were asked to indicate the frequency with which they engaged in NFMB, including on a four-point Likert scale (1 = "Never" to 4 = "Frequently"). This three-item scale included the statements, "I overdrew my bank account," "I purchased things I could not afford," and "I made late payments on bills or educational expenses" ($\alpha = .76$).

Trait Resilience: To evaluate student resilience, the Brief Resilience Scale (Smith et al., 2008) was utilized. Students responded to items asking them to evaluate their resilience on a 5-point Likert Scale (1 = "Strong Disagreement" to 5 = "Strong Agreement"). The original scale consisted of six items; however, three items were dropped because of low factor loadings. The final scale consisted of three reverse coded items, including, "I have a hard time making it through the stressful event" and "It is hard for me to snap back when something bad happens" ($\alpha = .83$).

Social Support Seeking Behaviors: SSSB was measured using four items from the Brief Cope Scale (Carver, 1997). The subscale measured students' behavioral tendencies to seek emotional and informational help from others under stressful conditions on a four-point Likert scale (1= "Not at all" to 4= "A lot"). The four-item scale included items such as, "I try to get emotional support from others" and "I get help and advice from other people" ($\alpha = .88$).

Control: Gender was controlled since the likelihood of having depression is higher for females than for males (Maji, 2018; Alexandrino-Silva et al., 2013).

EFA and CFA: Data was subjected to Exploratory Factor Analysis (EFA) using Principal Component with Promax Rotation with the assumption that the factors to be somewhat correlated with each other. The intra-factor loadings were larger than 0.50 and were greater than correlations across factors. To consider the measurement error of the scale, the data was subjected to Confirmatory Factor Analysis (CFA) using SPSS AMOS. (Bagozzi & Yi, 1988; Bollen, 1989; Jöreskog & Sörbom, 1996). The fit indices for the four-factor structures ($\chi^2 = 673.09$, $df = 269$, p -value < 0.001 ; CFI = 0.90, GFI = 0.86, RMR = 0.05, and RMSEA = 0.07) were acceptable (Anderson & Gerbing, 1988; Bagozzi & Yi, 1988). The scale items' construct validity was assessed using a square of correlation, average variance extracted (AVE), and construct reliability (CR). All the AVEs were greater than 0.5 other than depression (0.46). The square roots of the AVE were higher than the inter-construct correlations. The CR for the scale items were greater than 0.75 (Fornell & Larcker, 1981; Hair et al., 2002). The analysis indicates that scale items had acceptable internal consistency, convergent validity, and discriminant validity. Table 1 displays the AVE, CR, and inter-construct correlations. Table 2 displays the CFA path estimates.

RESULTS

Descriptive statistics (as indicated in Table 3) suggests a positive relationship between student loan and depression ($r = .16$, $p < .01$), even when student gender was controlled (Partial Correlation Coefficient = .16, $P < .01$). The correlation between student loan and NFMB ($r = .15$, $p < .01$) shows students with a student loan had higher NFMB on average compared to students who did not take a loan.

The bootstrapping method with biased-corrected, 95% confidence interval (CI), proposed by Preacher and Hayes (2004), was selected to directly test the model presented in Fig. 1. Model 16 ($n = 5000$ bootstrap resamples, CI = 95%) of Preacher and Hayes' SPSS macro (2014) was used following the procedure advanced by Preacher et al. (2007) to test hypotheses concerning moderated mediation models. Before running the analysis, continuous variables were mean-centered to avoid multi-collinearity (Aiken & West, 1991; Cohen et al., 2003).

The regression model ($R^2 = .40$, $p < .001$; as indicated in Table 4) tests the mediation role of NFMB in the relationship between the student loan (IV) and depression (DV). Furthermore, it tests the interaction between NFMB and resilience (moderator 1) as well as SSSB (moderator 2).

As expected, there is a significant indirect pathway from student loan to depression through NFMB ($b = .12$, 95% CI [.02, .21], $p < .05$), supporting hypothesis 2, 3 and 4, whereas the direct effect of student loan on depression is insignificant ($b = .09$, 95% CI [-.02, .21]), suggesting full mediation.

The indirect effect of student loan (as indicated in Table 5) taking on depression at different values of each moderator. The results reveal an interaction between NFMB and resilience ($b = -.09$, 95% CI [-.17, -.01], $p < .05$), but not SSSB ($b = -.06$, 95% CI [-.16, .05]). An interaction between resilience and NFMB provides evidence of moderation in a mediation model. But evidence of interaction does not necessarily establish whether the indirect effect depends on resilience (Hayes & Preacher, 2013). To confirm, Hayes (2015) recommends the bootstrap confidence interval.

Although the bulk of 95% bootstrap CI for resilience [-0.05, 0.01] and SSSB [-0.05, .01] is below zero (as indicated in Table 6), it cannot definitively said (i.e., with 95% confidence) that the indirect effect depends on resilience and SSSB since the confidence interval for the index of moderated mediation includes zero. Thus, both hypotheses 5 and 6 were not supported.

DISCUSSION

The growing prevalence of mental health problems among university students (Evans et al., 2018; Thomas, 2014) has drawn the attention of researchers, yet many things on student mental wellbeing remain unknown (Edwards et al., 2019, 2021). This paper explored the role of student loans on depression among college students. It also explored the role of students' resilience and social support-seeking behavior in reducing the impact of the NFMB on depression.

Regarding the relationship between student loans and depression (hypothesis 1), the bivariate correlation was positive and significant. However, when other study variables, including NFMB, were put together in the model (see Table 4), the relationship became insignificant. One explanation for the result is that the other variables share the same variance as does the student loan with depression, highlighting the need to examine possible mediating and moderating relationships, which were examined next.

Student loans were found to be positively related to NFMB (hypothesis 2). NFMB was positively related to depression among students (hypothesis 3) and mediated the path from depression to student loans (hypothesis 4). The results add to the existing conversation in the literature on why student loans can lead to depression. In the past, scholars have posited that student loans increase a sense of worry for student loan repayments and delay adult life transitions that may ultimately lead to mental health symptoms, including financial anxiety, insomnia, and depression. This study uncovers the role of NFMB in increasing the probability of depression. The results from this study highlight the need to educate students on how to handle the extra liquidity the student loans offer to them. Given that the majority of the students in this study were below the age of twenty-five, many of them may not have had the opportunity to develop positive financial management habits including saving and spending judiciously. As a result, the peer pressure that students undergo in college to appeal to others and to "look cool" in social media may lead them to overspending.

Hypotheses 5 and 6 were not supported. However, granular observation of the relationship between NFMB on depression at different levels of resilience and SSSB revealed interesting observations (as indicated in Figure 2).

NFMB had a positive and significant influence on depression, at lower levels of resilience, regardless of the intensity of SSSB. However, the relationship between NFMB and depression became insignificant when resilience was high, regardless of SSB intensity. These results are interesting from an intervention standpoint and more research is needed to explore the relationships of the role of personality traits in mitigating the negative role of NFMB on depression.

IMPLICATIONS FOR EDUCATORS

Depression has become a widespread phenomenon today in U.S. college campuses (Browne et al., 2017; Eisenberg et al., 2013). Research suggests that 75% of mental illnesses emerge by the mid-20s (Kessler et al., 2007). Given that depression negatively influences students' wellbeing and degrades their academic performance in the classrooms, there is a clear need to help students. Currently, universities around the United States offer various kinds of facilities for students to cope with depression, including student health and wellness centers and financial coaching to students. Although these services are valuable, educators can make a difference in students' lives by mitigating the causes of depression. One such way would be to help students avoid negative financial management behavior.

The educators can help lessen the negative impact of student loans. Educators can raise awareness of student loan management; create an open and inclusive community to share stories about student loans and mental health and can refer students to various resources offered by the universities to help students. Such initiatives by the educators would be precious for those living in underserved areas, first-generation students, and students coming from minority backgrounds (Mehta et al., 2011; Perkins et al., 2016; Sethna, 2011). These students suffer from a "hidden curriculum," as they may not know what they don't know (Chatelain, 2018; Gable, 2021).

Instructors can raise students' awareness by deliberately using the student loan as a context to teach concepts. For example, in the introductory business courses, the instructor can emphasize how students can apply management concepts in managing their finances. An instructor teaching organizational behavior can discuss how the need for social belongingness, such as looking cool or socially desirable, causes students to overspend. Accounting and finance professors can use the student loan context for teaching topics such as the amortization of loans and time value of money. These interactions can reinforce financial management's importance and caution students of the student loans' long-term negative consequences.

Along with creating a discourse on student loans, the instructors can also create an inclusive environment for students to discuss mental health and student loan problems. Educators can deliberately share their student-loan repayment or mental health challenges and create space for thought-provoking discussions (Quijada, 2021). Such discussions can create an environment of sharing and trust-building, help the instructors connect with the students on a much deeper level, and reduce the stigma associated with mental health problems (Kent et al., 2017).

In addition, instructors can become a bridge between students and university resources. They can educate students about the importance of mental health, refer them to financial literacy classes and counseling centers, and offer extra credit for taking financial management courses. Instructors can emphasize the value of help-seeking and encourage students to take care of their mental and financial wellbeing.

LIMITATIONS AND FUTURE DIRECTIONS

The results of this study should be qualified in light of its limitations, which also provide opportunities for future research. Although the causal effect of student loans on NFMB and depression was posited, the cross-sectional nature of the data makes it difficult to rule out other alternatives. A longitudinal study that investigates the differences in financial management behaviors of students who apply for student loans will be helpful. Additionally, prior studies have found an association between depression and compulsive buying behaviors (Mueller et al., 2011). Future studies can investigate if a reciprocal relationship exists between financial management behavior and depression using a longitudinal design. Further, future studies can look more closely into students' overspending loans and the causes.

CONCLUSION

Brown's inspirational quote, "when we cannot change the direction of the wind, we can adjust our sails", captures the role of both students and instructors to solve the student loan problems. Today's challenging economic environment calls for skills that enable students to adjust swiftly and smoothly. This article investigated the impact of student loans on current student's well being and offered advice to educators. The results of this study show that student loans tend to increase NFMB among undergraduate students that ultimately increases the likelihood of depression. The study highlights the need for raising awareness about NFMB and increasing financial literacy in curbing student depression caused by the student loans. Finally, the study explores some intervention programs that educators can use in their classrooms to help students.

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Figures and Tables

Figure 1: Theoretical Model

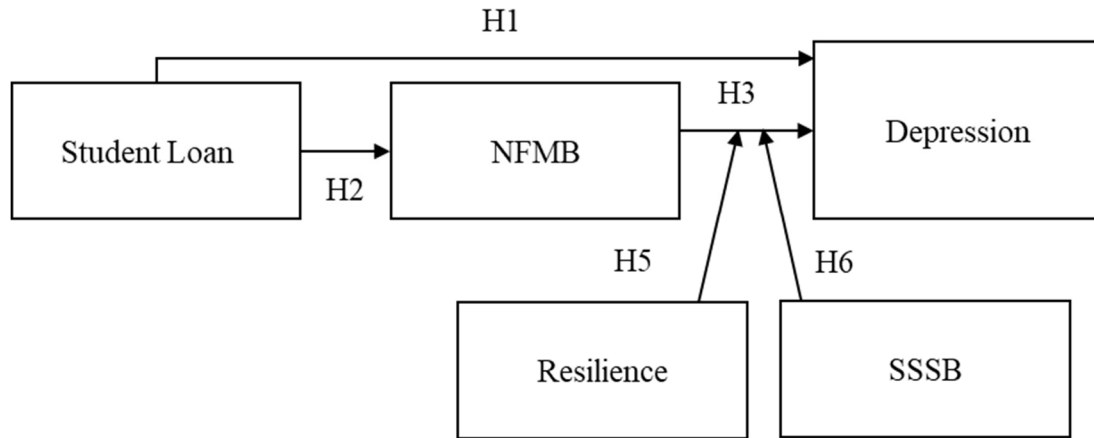


Figure 2: The Influence of NFMB on Student Depression at Various Levels of Resilience and Social Support Seeking Behavior

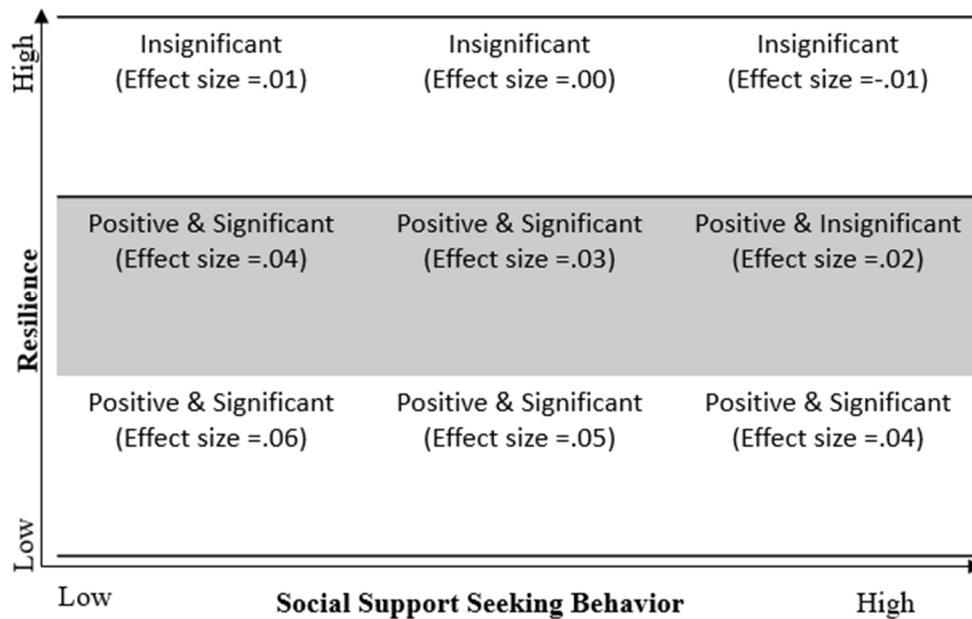


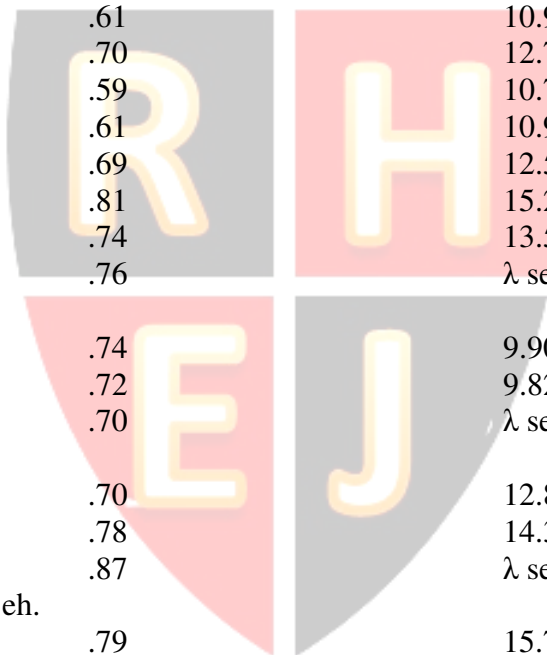
Table 1: C.R., AVE, and Inter-Construct Correlations

Variable	CR	AVE	\sqrt{AVE}	Inter-Construct Correlations			
				Dep	NFMB	Res	SSSB
Dep	.93	.46	.68	.68	---	---	---
NFMB	.76	.52	.72	.40	.72	---	---
Res	.83	.62	.79	-.61	-.41	.79	---
SSSB	.88	.65	.81	.18	.28	-.18	.80

Note: **p<.001 *p<0.05, N=318; CR = Composite Reliability; AVE = Average Variance Extracted; Dep = Depression; NFMB = Negative Financial Management Behavior; Res = Resilience; SSSB = Social Support Seeking Behavior.

Table 2: CFA Measurement Model: Structural Equation Model Estimates using SPSS Amos

Items	Standard λ estimates	t-stats
Depression		
D1	.61	11.05
D2	.65	11.73
D3	.74	13.65
D4	.54	9.70
D5	.78	14.52
D6	.68	12.39
D7	.68	12.48
D8	.61	10.96
D9	.70	12.78
D10	.59	10.70
D11	.61	10.95
D12	.69	12.55
D13	.81	15.24
D14	.74	13.58
D15	.76	λ set to 1
NFMB		
NFMB1	.74	9.90
NFMB2	.72	9.82
NFMB3	.70	λ set to 1
Resilience		
R1	.70	12.84
R2	.78	14.38
R3	.87	λ set to 1
Social Support Seeking Beh.		
SSSB1	.79	15.75
SSSB2	.77	15.21
SSSB3	.83	16.61
SSSB4	.84	λ set to 1



Global Fit indices: $\chi^2 = 673.09$, $df = 269$, $p\text{-value} = 0.000$; CFI = 0.90, GFI = 0.86, RMR = 0.05, and RMSEA = 0.07

Table 3: Descriptive Statistics

	1.	2.	3.	4.	5.
1. Depression	1.94 (0.65)				
2. NFMB	.36**	1.68(.72)			
3. Resilience	-.59**	-.34**	3.40(1.00)		
4. SSSB	.15**	.25**	-.16**	2.44(0.82)	
5. SL	.16**	.15*	-.14**	-.02	.46(0.50)

Note. *** $p < .001$, ** $p < .01$, * $p < .05$. In the main diagonal the mean for the variable is provided with the standard deviation in parentheses. NFMB = Negative Financial Management Behavior. SSSB = Social Support Seeking Behavior. SL = Student Loan

Table 4. Path Analysis

Relationships	R ²	b	SE	LL	UL
Social Support and Resilience as moderators, moderating relationship between the NFMB and depression,					
Model (SL □ NFMB)	.04	---	---	---	---
1. Student Loan	---	.22**	.08	.06	.37
2. Gender	---	.19*	.08	.03	.35
Model (SL □ Depression); with NFMB as Mediator; Resilience and SSSB as moderators	.40	---	---	---	---
1. Student Loan	---	.09	.06	-.02	.20
2. NFMB	---	.12*	.05	.02	.21
3. Resilience	---	-.34*	.03	-.40	-.28
4. Resilience *NFMB	---	-.09*	.04	-.17	-.01
5. SSSB	---	-.01	.04	-.07	.07
6. SSSB *NFMB	---	-.06	.05	-.16	.05
7. Gender	---	.11	.06	-.01	.23
	Effec	p	SE	LL	UL
Direct Effect of Student Loan on Depression	.09	.12	.06	-.02	.21

Note. ** $p < .01$, * $p < .05$ b represents unstandardized coefficients. SE = Standard Error; LL = Lower Limit CI; L = Upper Limit CI; CI = Confidence Interval; NFMB= Negative Financial Management Behavior, SL= Student Loan; SSSB= Social Support Seeking Behavior

Table 5. Indirect Effect of Student Loan on Depression through NFMB at Different Values of Resilience and Social Support

Res	SSSB	Effect	BootSE	BootLL	BootUL
-1.00	-.82	.06	.03	.01	.13
-1.00	.00	.05	.02	.01	.10
-1.00	.82	.04	.02	.01	.08
0.00	-.82	.04	.02	.01	.09
0.00	.00	.03	.01	.01	.06
0.00	.82	.02	.02	-.01	.05
1.00	-.82	.02	.02	-.01	.06
1.00	.00	.01	.02	-.02	.04
1.00	.82	-.01	.02	-.05	.04

SE = Standard Error; LL = Lower Limit CI; L = Upper Limit CI; CI = Confidence Interval;
 SSSB= Social Support Seeking Behavior; Res = Resilience

Table 6. Indices of Partial Moderated Mediation for Resilience and Social Support Seeking Behavior

	Index	BootSE	BootLL	BootUL
RES	-.02	.01	-.05	.01
SSSB	-.00	.02	-.04	.01

SE = Standard Error; LL = Lower Limit CI; L = Upper Limit CI; CI = Confidence Interval;
 SSSB= Social Support Seeking Behavior; Res = Resilience

