

College Student Loans and Subjective Well-being in South Korea: How Do Student Borrowers Evaluate Their Lives during Studies and after Graduation?

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This article examined the effects of student loans on the subjective well-being (SWB) of Korean student loan borrowers by analyzing the Korean Education and Employment Panel (KEEP) survey data. In order to systematically investigate how student loans affected borrowers, we assessed their specific effects on the students, both during their studies and after they graduated. The findings are as follows. First, college seniors who experienced difficulties in making repayments reported lower SWB than did those who had not taken out student loans or those who had not experienced difficulties repaying loans. Remaining debt did not influence college seniors' SWB. Second, neither experiencing difficulties on making repayments nor the remaining debt influenced the SWB of college graduates when control variables were considered. Our investigation into why student loans seemingly presented no negative effects after graduation revealed some evidence for the suggestion that loan-takers' expectations regarding their ability to repay after graduation contributed to making the negative effects of student loan debt on happiness disappear. The results of this article demonstrated that student loans, as one measure of the economic status of young adults, can be a predictor of college students' SWB. However, in order to fully assess the effects of student loans on college graduates, an analysis of a longer period after graduation is needed.

Keywords: Higher Education, Student Loans, Subjective Well-being (SWB), College Students, College Graduates

Introduction

The increase in students who attain higher education is a documented global phenomenon (Chamie 2017; OECD 2018, pp. 200-201). Whereas high unemployment rates among young people have become a major problem across OECD countries, growing labor market inequality has highlighted the benefits of and increased demand for higher education. The expansion of tertiary education benefits both societies and individuals by expanding human capital. One primary concern widely discussed is the burden of tuition fees and living expenses associated with higher education. Private expenditures on tertiary education, of course, depend on the tuitions charged by tertiary institutions. For instance, the share of private expenditures on tertiary education is less than or about 10% in Austria, Finland, Iceland, Norway, and Sweden, where tuition is low and even almost free, whereas it is about 65-70% in Japan, the United Kingdom, and the United States, where tuitions are higher; in Korea, the rate reaches about 65% (OECD 2018, p. 272, p. 277), and the country in fact ranks third in private institutions and fifth in public institutions (OECD 2018, p. 301). As of 2019, 82% of the total college students in Korea attended a private college.¹

There are several governmental financial-aid policies aimed at reducing the financial burden of tertiary education, including scholarships and student loans. Because scholarships are often limited to low-income families and are regularly not enough to cover tuition, school fees, and living expenses, student loans are an important form of support for postsecondary education. What is somewhat surprising is that not only in some OECD countries, such as the United States and Australia, where tuitions are high, but also in other OECD countries, such as Sweden and Norway, where tuition is nearly free, many college students take advantage of student loans (OECD 2018, p. 297, p. 305).

The number of college entrants has increased dramatically since the 1990s in Korea, and college tuition has generally proved to be a significant burden for Korean parents. Although scholarships and loans were available before its inception, the Korea Student Aid Foundation (KOSAF), established in May 2009, expanded the government's budget for national scholarships and student loans (KOSAF 2017a). Now, borrowing and repayment

¹ We referred to the Korean Education Statistics Service for the number of college students in different types (public or private) of 4-year and 2-year colleges (<https://kess.kedi.re.kr/>).

conditions have changed in favor of borrowers, and the amount of student loans being taken out has increased significantly (KOSAF 2018). Although there have been many studies on improving student loan schemes, research has just begun on the various effects of student loans on borrowers, because this newly revised student loan policy has only existed for a short time in Korea. In particular, the effect of student loans on subjective well-being (SWB) has not received significant attention yet.

Interestingly, there is a relative lack of studies on the effect of student loans on SWB even in the United States (Tay et al. 2017), where there has been a great deal of academic and public discussion on the rise of student loan debt, which has increased rapidly since the 1990s (Baum and Saunders 1998; Batz 2017; Bozick and Estacion 2014; Chamie 2017; Dwyer, Hodson, and McCloud 2013; Dwyer, McCloud, and Hodson 2011, 2012; Gicheva 2011; Houle 2013, 2014; Houle and Berger 2015; Jackson and Reynolds 2013; Neubert 2016; Postsecondary National Policy Institute 2016; Quadlin and Rudel 2015; Schoenherr 2016; Singletary 2016). Previous research has primarily focused on the effects of student loan debt on individuals, including questions such as who are more likely to face financial difficulties resulting from student loan debt or whether an increasing number of borrowers are struggling with getting married and purchasing homes because of the financial constraints of their loan repayments. What requires further attention in the research on student loans are the subjective aspects of the effects of student loans. Even among studies on their subjective aspects, most of the research concentrates on borrowers' financial well-being which is associated with student loans (Archuleta, Dale, and Spann 2013; Baek and Oh 2015; Cho, Xu, and Kiss 2015; Henager and Wilmarth 2018; Kwak and Lee 2015; Lee, Kim, and Hong 2018). However, it is valuable to understand the broader effects of student loans on a person's subjective life evaluation. If income is considered to be a critical factor in increasing overall SWB, student loan debt can be an important factor for predicting borrowers' SWB in the opposite direction (Tay et al. 2017). Student loan debt can be critical to the SWB of young adults, because most young adults are still financially dependent and unstable.

In this article, we focus on college students and recent graduates in Korea to investigate whether students who borrowed mainly KOSAF funds through the Korean government since the second semester of 2009 demonstrated lower or higher subjective well-being than those who did not take out such loans. On the one hand, student loans have undeniably been essential in broadening access to higher education and increasing degree

achievement as well. On the other hand, there have been studies on the negative effects of student loan debts on some aspects of borrowers' lives, such as financial well-being, marriage, home-buying, and job-finding (Bae and Park 2016; Bozick and Estacion 2014; de Gayardon et al. 2018; Gicheva 2011; Houle and Berger 2015; Jung, Chae, and Woo 2017). However, there have been few studies in Korea specifically focused on the relationship between student loans and SWB. We aim to systematically analyze the effects of student loans on the SWB of Korean college students and graduates.

Literature Review

Financing Tertiary Education and Student Loans in Korea

Following Ziderman's distinction about the function of student loans (2013), the function of student loans in countries where tuition fees are comparatively high is cost sharing; in these countries, students partaking in higher education share a fair amount of the expenses (Ziderman 2013, p. 12). The proportion of students who utilize loans is high in the United States, at 55%, with high interest rates for repayment (4.3% to 6.8% both during and after studies) (OECD 2018, p. 305). In contrast to this, student loans can also largely contribute to student independence; even when tuition is low or almost free, living expenses can also be burdensome to students (Ziderman 2013, p. 13). The OECD reports that in Sweden and Norway, where tuitions are very low if not free, 100% of tertiary students take out student loans (OECD 2018, p. 305). In these two countries, loan interest rates are very low: in Norway, there is no nominal interest rate during studies, and the rate is only 1.9% after graduation. In Sweden, the rate is 0.6% both during and after studies (OECD 2018, p. 305). The function of student loans in Korean seems to coincide with the cost-sharing model.

The number of students entering higher education in Korea has grown significantly since the 1990s. The entry rate for tertiary education increased from 23.6% in 1990 to 67.6% in 2017, with its peak in 2008 at 70.5% (Korea Statistics database).² Nearly 60% of college students received help from their parents for tuition in 2018, down from 70.5% in 2010 (KOSIS database),³

² Data were provided from the Korea Statistics. Refer to the Korea Statistics website (http://www.index.go.kr/potal/stts/idxMain/selectPoSttsIdxSearch.do?idx_cd=1520).

³ Data were extracted from the KOSIS database (<http://kosis.kr/search/search.do>).

perhaps because the government increased the budget for national scholarships and public loans after KOSAF was established.

One of the notable changes in Korea's student-aid policy after KOSAF was established was the introduction of the income-based national scholarship program in 2012. The number of national scholarship recipients increased more than tenfold from 261,602 in 2010 to 3,186,612 in 2013 (from 7.2 % to 86% as a percentage of the total enrollment), and more than hundredfold from 28,918 in 2007 to 3,186,612 in 2013 (from 0.8% to 86% as a percentage of the total enrollment). The number has remained more or less the same since 2013, although it did decrease to 2,930,365 in 2016, or 83% of the total enrollment (KOSAF 2017b, p. 19).⁴

There were also substantial changes made to student loan policies. The first noticeable change was the implementation of the post-employment repayment plan, also called the income-contingent loan, in the first semester of 2010. The number of students who borrowed public loans increased from 348,231 in the second semester of 2009 to 557,222 in the first semester of 2015 (from 9.7% to 15% as a percentage of the total enrollment) (KOSAF 2018, p. 337). This then dropped significantly to 360,279 in the second semester of 2015 (10% of the total enrollment), and it remained more or less the same but tended to decline until recently in the second semester of 2017 (KOSAF 2018, p. 16). The decline in the number of student borrowers can be linked to the increasing number of scholarship beneficiaries.

The second big change was a considerable reduction of the interest rates for student loans; it declined gradually from 5.8% in the second semester of 2009 to 2.25% in the second semester of 2017 (KOSAF 2018, p. 17). The same interest rates apply to the two different types of student loans, the income-based contingent loan for students below the top 20% family-income level and direct loans, which are available to all regardless of family income. Borrowers of income-contingent loans can delay loan repayment until they find employment at a job above a certain income level. Direct loans are similar to mortgage loans (OECD database).⁵

According to the KOSAF 2016 Statistical Yearbook, the proportion of Korean students who take out loans is 18.5%, and the average annual gross amount of the loan borrowed by each student (in USD converted using PPPs)

⁴ The number of Korean tertiary students in total increased from 3,363,549 in 2000 to 3,735,706 in 2011 and then declined to 3,516,607 in 2016, 3,437,309 in 2017. For the number of Korean tertiary students in the 2000s, we referred to the KOSAF 2017 Statistical Yearbook (KOSAF 2018, p.337).

⁵ Data were extracted from OECD.Stat (<http://stats.oecd.org>).

is 5,623 dollars (reference year 2013-14) (KOSAF 2017b, p. 422).

Research on Student Loans in Korea

Institutional Improvement and Outcomes for Borrowers' School Life

There was some research conducted on student loans in Korea right before the significant changes in student-aid policy that began after KOSAF was established in 2009; during this period, both the government and the academic community began to seek better student financial-aid policies. At the time, much of the research on student loans in Korea was on groups that needed loans (Kim and Kim 2006; Nam 2008) and the efficient operation of student loans (Kim 2004; Kim 2002, 2005). There was also an international comparative study of student loans (Chae 2005; Chae and Lee 2005; Nam 2007). Researchers examined the effects of financial support for college students on various aspects of their education and found that student loans made it less likely that low-income students would extend their enrollment period (Kim and Rhee 2008). That is to say, with student loans, low-income students did not have to take time off from school frequently. The effects of student loans on college students in general differed by income level. Scholarships improved academic achievement (grade point average) of low-income students much more than they did for middle-income students, but student loans had a negative effect on their academic achievement (Kim and Rhee 2009).

More recent researchers have paid attention to the effects of current government-funded student loans since the national student-aid policy was enacted, examining characteristics of debt and repayment, such as types of loans and repayment status (Jung, Cha, and Koo 2018) in order to assess whether current student loans have been functioning well or what must be improved for their more efficient or sustainable operation (An and Kim 2017; Kim 2009; Kim 2016; Nam, Ryu, and Jeong 2012; National Assembly Budget Office 2010; Park and Jung 2010).

Lee and Park (2012) found positive effects of student loans on low-income students' working hours: low-income students who received income-contingent loans worked fewer hours for pay during the semester, although the authors found no evidence of positive effects on the students' academic achievement. However, Woo (2016) studied the effects of income-contingent loans on student learning and showed that students who received these loans had significantly better learning achievement in 2014. Woo suggested that the decrease of the interest rate from 4.9 % to 2.8% in 2011 reduced students'

financial worries and allowed them to concentrate on learning. Similarly, Jin and Kim (2014) found that lower-income students who had received student loans significantly improved their academic achievement, such as by receiving better grades..

Effects on Various Aspects of Borrowers' Lives: Positive, Negative, or Mixed?

There is a relatively small body of literature on the effects of student loans on individuals' lives outside of school life. There are a few studies on the transition from college into the labor market. Bae and Park (2016) examined the effects of student loans on female students' transition to working life. Analyzing representative statistical data from the Korean Education and Employment Panel (KEEP) survey by the Korea Research Institute for Vocational Education and Training, they concluded that loan borrowers found their first jobs after graduation sooner than students who did not borrow loans, but their first jobs tended to be lower paying (Bae and Park 2016). In addition, loan recipients' first jobs were less likely to fit their college majors (Bae and Park 2016). Jung et al. (2017) also analyzed KEEP data and found that students who took out income-contingent loans found work more quickly than did non-borrowers but also that they worked for lower wages than did non-borrowers. The authors suggested that despite being able to delay loan repayment until finding employment, loan borrowers felt financially burdened and accepted jobs more quickly, which could lead to lower-waged jobs (Jung et al. 2017).

One qualitative study presents how students receiving loans gradually changed their thoughts on debt (Baek and Oh 2015). Many Korean students interviewed for the study first felt positive about student loans and debt, believing that incurring this debt would bring about positive outcomes in their lives. However, they gradually felt unstable and stressed as the pressure from the debt increased, particularly when it came time to repay it (Baek and Oh 2015). In a work on recent graduates, Kwak and Lee (2015) surveyed 302 individuals with student loans and 308 without loans in 2015 and found that student loan borrowers faced more financial stress, possibly because of pressure to repay.

The findings from the few works in Korea about the association between student loan debt and borrowers' sense of financial burden indicated that the financial domain is an important one for college students' and graduates' lives that could influence their overall subjective evaluation of life. Because there have been few such studies in Korea, we can refer to some relevant literature about American college students or young adults in order to understand the

function of student loans or, specifically, the nuanced association between student loans and financial well-being. These studies showed various aspects of the association, indicating that student loan debt is related to borrowers' mental health (anxiety or stress), objective financial difficulties, and subjective evaluation of their financial situations. However, most of the literature has not directly pointed out a negative association with overall quality of life. We should not overestimate the negative effect of student loan debt on borrowers' material difficulties or their subjective evaluations of their financial conditions. The effects of student loan debt depend on how the student borrowers perceive student loan debt or how many unpaid loans they have, or whether they have or expect to have other resources (savings or income) to reduce the burden of repayment.

Archuleta, Dale, and Spann (2013) specifically looked at the financial pressure put on borrowers by student loan debt. In particular, because they were interested in the effects of financial concerns on overall mental health, they examined the influence of debt on student financial anxiety. They analyzed 180 US college students who sought consultation at a Midwestern university's peer financial-counseling center and found that if students were satisfied with their overall financial situation, total debt itself did not influence their financial anxiety (Archuleta, Dale, and Spann 2013). Henager and Wilmarth (2018) found a similar association between student loan debt and financial wellness. In a sample of 16,670 adults who had been out of college long enough to have jobs relevant to their education level, the results from the analysis showed that holding a student loan was negatively associated with financial wellness as measured by several components, including objective personal financial situation and subjective evaluation of personal financial conditions. However, having a college degree (compared with having a high-school degree) was positively associated with financial wellness; the authors suggested that obtaining a college degree could ultimately offset the negative effects of holding a student loan (Henager and Wilmarth 2018). Lee, Kim, and Hong (2018) studied 2,161 U.S. households with outstanding student loan balances and found similar outcomes: households with higher levels of education and those with higher incomes, were more likely to pay off their debt in a relatively short time, even if they had larger student loan debts. That is, outstanding student loan balances are not a problem for more highly educated people.

Debt is not always negatively related to financial well-being, depending on whether borrowers obtain a college degree or not, how they subjectively evaluate their financial situation, or whether they are in college or have

already graduated. Despite these conditions, debt can be one important measure of college students' or young adults' financial status (Xiao, Tang, and Shim 2009). Hence it should be examined as a critical factor for predicting young adults' overall SWB, such as happiness or satisfaction with life. The effects of student loan debt on personal SWB are worth studying. Income has been considered to be critical for predicting an increase in personal SWB. Thus, debt should be considered to be a critical factor for predicting a decrease in SWB.

Research related to the association between student loans and SWB are still few in Korea. Kang et al. (2018) is the only study that has specifically dealt with the relationship between experience with student loans and SWB for Korean college students so far. Focusing on college students in the 11th-year (2014) of KEEP data, Kang et al. (2018) showed that, after they controlled for the quality of life by sub-domain satisfactions, including physical, material, and personal achievement and social well-being, student loans had a significantly positive effect on an individual borrower's level of happiness. However, the significance of holding student loans differed by income level: loans had a positive influence on happiness only among those with higher incomes (Kang et al. 2018). The weakness of this study is first of all analytical. Kang et al. (2018) did not include many control variables, such as demographic and socioeconomic variables, but these need to be accounted for in order to understand the extent to which student loans affect SWB. Furthermore, their study did not provide us with any meaningful explanation that allows us to understand the importance of student loan debt in SWB research.

To interpret or understand the importance of student loan debt in predicting SWB, it is worth paying attention to the study by Tay et al. (2017). Tay et al. (2017) conducted a systematic review of past empirical studies on the association between debt and SWB, and found a negative association between the two in most of the relevant studies; individuals with debt generally experienced negative feelings or had lower subjective evaluations of their lives. They also conducted their own empirical analysis of a large number of college graduates within 10 years of graduating in the United States ($N = 2781$) and arrived at the following two conclusions. On the one hand, the amount of student loan debt directly influenced a graduate's satisfaction with life in a negative way. On the other hand, the amount of student loan debt increased financial worry, and then financial worry lowered satisfaction with life. That is, student loan debt influenced satisfaction with life indirectly, mediated by financial worry (Tay et al. 2017,

p. 916). They explained the two mechanisms by which debt influences SWB. First, individuals burdened with debt feel stressed and financially unsatisfied, which ultimately leads to lower overall SWB. Among several life domains, the negative effects of debt on one life domain, such as the financial domain, can spill over other life domains, such as marriage, family, and leisure, which decreases the level of SWB. Second, individuals with debt have limited choices in fulfilling life goals and fundamental needs, such as autonomy and social relations, because of the lack of financial resources during their period of repayment; debtors have few opportunities to improve their SWB. However, if debt is manageable or debtors can use other recourses, so that crucial life choices are not constrained, debt itself does not necessarily lower SWB; rather it can provide more opportunities to increase SWB in the long term (Tay et al. 2017, p. 909).

Because there are few studies on the relationship between student loans and SWB in Korea, the research on this topic will allow us to pay attention to the importance of student loan debt in predicting SWB among Korean young adults who are in college and those in the transition to adulthood. College students and recent graduates expect and face many important life choices related to economic and social independence such as employment and marriage. Student loans can assist students in their completion of college, but they, as debt, can also constrain students' options during and after college. Given that most young adults have limited financial resources at this stage of life, debt fundamentally adds more pressure on their financial constraints. Therefore, it should be considered to be a critical factor that can influence the SWB of young adults, and it requires more attention, especially at this point, because the number of student loan recipients in Korea has swelled tremendously over the last decade.

Whether the relationship between taking out student loans and SWB is negative or positive might be an empirical matter. The relationship can be conditioned by various factors, such as borrowers' perception of debt, their expectation of the future, the amount of debt they have accumulated, other resources available to them, whether or not they completed college, their status before graduation/after graduation, or the amount of time since graduation. Though we should consider various factors that are likely to condition the effect of student loans on SWB, as Tay et al. (2017) suggested and demonstrated, the effect of student loans on borrowers' SWB looks negative overall. At the same time, the change of social status from students to job seekers might matter: having completed college, college graduates are capable of taking jobs and earning money, which will help reduce their

financial worries, at least for a short time after graduation. Comparing the two periods can help us understand whether the effects of student loans will differ with the change of social status from students to job seekers or income-earners. This would contribute to the general research on the SWB of young adults.

Methodology

Data and Methods

The KEEP survey is a longitudinal research study that selected 6,000 middle-school or high-school students in 2004, and traced them for 11 years; the main aim of the KEEP survey was to investigate various aspects of students' school life and scholastic abilities and attitudes, along with their activities in the labor market upon completing their education. The 6,000 cases comprised three cohorts: 2,000 middle-school seniors, 2,000 high-school seniors, and 2,000 vocational and technical high-school seniors. For this study, we analyzed the cohort of middle-school seniors from 2011 through 2015, because we aimed to focus on students who borrowed the KOSAF student loans following the second semester in 2009. Most of the cohort of high-school seniors started to enter college in 2005. Therefore, this cohort is not appropriate for our investigation of the effects of student loans on students who had taken out newly modified student loans. Unlike the cohort of high-school seniors, the cohort of middle-school seniors started to enter college in 2008. Therefore, most of them were able to accept the KOSAF student loans during their studies.

In order to investigate the effects of student loans on the SWB of college seniors, we used the data of the middle-school seniors' cohort from the 7th to 11th years, corresponding to the years 2011 to 2014. Specifically, we selected college students who were seniors in one of the years 2011 to 2014, for a total of 708 subjects.

In order to investigate the effects of student loans on the SWB of college graduates, we used the data on the middle-school seniors' cohort from the 8th to the 12th years, corresponding to the years from 2012 to 2015. More specifically, we selected those college graduates who were in their first year after graduating from their colleges in one of the years 2012 to 2015, that is, 690 subjects who were in their first year after graduation. Most of the students who graduated in 2012 (at the same time, the seniors in 2011) were

considered to be those who were likely to be the first college graduates with the KOSAF student loan debt among the cohort of middle-school seniors. To obtain a proper number of college graduates with the KOSAF student loan debt for our analyses, we selected college graduates in their first year out of college, regardless of their date of graduation. Therefore, we did not include other graduates who had been out of college for more than one year, merely because of the limitations of the data.

We used multiple linear regression to investigate the effects of student loans on the SWB of college students and graduates, using the weight variable included in the KEEP survey data. The weight variable was created to correct for unequal selection probability, non-response, and post-stratification. In this process of correction, region, sex, and school type were considered. Our main reason for using the weight variable was that males, at about 40%, seemed to be underrepresented in our samples, perhaps because of the mandatory military service that Korean males must complete.

Variables

Table 1 shows the definitions and measurements of the variables that we used in the multiple linear regression models. Brief explanations of the major variables are presented below.

Dependent Variable

Our analyses used one dependent variable, *happiness*, which captured SWB. We measured *happiness* with the question, “How happy are you?” on a 11-point scale, as mentioned in Table 1.

Independent Variables

The independent variables of our analyses are *remaining debt* and *negative experience*. These two variables represent the two dimensions of borrowers’ situations caused by the use of student loans. Objectively speaking, all borrowers have unpaid debt until they repay all debt they have incurred. Among debtors, some of them might experience more difficulties caused by repayment. Compared to non-borrowers, all borrowers are likely to be financially constrained. However, some borrowers face difficulties more often than others. We investigated both the effects of *remaining debt* as an objective situation of all borrowers and the effects of *negative experience*, which differs among borrowers.

Remaining debt refers to whether or not respondents had remaining

unpaid debt,⁶ and is split into two categories: (1) those who had not taken out any student loans for college education or those who had no remaining debt from student loans, (2) those who had remaining debt from student loans. *Negative experience* is related to the difficulties that respondents experienced in paying back their loans. The KEEP survey asked respondents whether, if they used student loans, they had experienced any of the nine difficulties mentioned in Table 1. *Negative experience* encompassed three categories: (1) those who had not taken out any student loans for college education, (2) those who used a student loan and repaid it without any difficulty, (3) those who used a student loan and experienced at least one difficulty in repayment of the loan.

Control Variables

We classified control variables into four groups: the first group is related to individual-level variables, the second group includes variables related to college education, the third group contains several variables related to family, and the fourth group includes calendar year variables. The measurement of control variables is presented in Table 1.

Our main aim in the analysis was to identify the effects of student loan debt on SWB. In order to clarify this relationship, we needed to control relevant variables that could affect the level of SWB. Our analysis focused on both college students and graduates. We referred to the literature on SWB studies on both college students and adults in general in order to include relevant control variables in the analysis. SWB studies in general largely focused on three factors, such as income, health, and social relations, which were positively associated with SWB (Deeming 2013; Diener and Biswas-Diener 2002; Portela, Neira, and Mar Salina-Jiménez 2013). Slightly

⁶ We did not use the amount of remaining debt, because we were not able to use it as a continuous variable. There were many more non-borrowers (about 70%) than borrowers (30%). Of course, we considered categorizing the amount of remaining debt into three groups, for instance, no remaining debt, the amount of debt equal to or below the median debt, and the amount of debt over the median debt. However, this categorization might be arbitrary. Furthermore, we tested whether this categorization might make sense. The analysis of the effects of these categorized variables on college students' SWB, controlling for other relevant variables, did not provide outcomes that allowed clearly meaningful interpretations. Compared to non-borrowers or those without remaining debt, college seniors with remaining debt equal to or lower than the median debt had lower SWB, but those with remaining debt higher than the median debt did not differ from those without debt. Interpretation on this was difficult and might be speculative. Here, we provide some information on the amount of remaining debt. Median debt differs year to year: 12 million won in 2011 and 10 million won in 2012, 2013, 2014 for college seniors; 13 million won in 2012, 10 million won in 2013, 9 million won in 2014, and 10 million won in 2015 for college graduates.

differently, most studies specifically dealing with college students' SWB addressed more specific factors affecting SWB. Many SWB studies on college students were interested in the effects of the following factors: mental health or behavioral problems (stress, depression, distress, violence), personality or values (self-esteem, self-efficacy, optimism, materialism), or social connections (social closeness or social withdrawal) (Chow 2005; Lee 2018; Kim 2014; King et al. 2014; Kumar et al. 2016; You and Park 2015). Some studies showed that academic performance (GPA) or parents' socio-economic status influenced SWB positively (Chow 2005; Lepp, Barkley, and Karpinski 2014). SWB studies focusing on college students were primarily concerned about whether college students had any problems as students, rather than simply young adults, in their college communities or about who were better off and more satisfied with their school life. Therefore, these previous studies treated college students mainly as 'students' who have adapted to a college community or who should be living healthy and joyful lives.

In our analysis, we treated college students primarily as 'young adults' who are at a stage of the transition from late adolescence to adulthood, specifically preparing transition into the labor market. Recent college graduates should be treated as the same. However, they definitely differ, in that college students are still 'students', but college graduates are out of school and starting to participate in their society in a new capacity: finding jobs. Thus, control variables were chosen and interpreted in order to understand the situations of young adults (both college students and recent graduates) and their SWB. General SWB studies as well as studies focusing on college students were both useful for finding control variables for our analysis.

The first group of control variables includes individual-level variables. *Sex* is a demographic variable. *Income*, *log allowance*, and *job* capture the material conditions of subjects. The variable *job* was added in the analysis of college graduates. The negative effects of 'job stress' on SWB have been reported in previous studies (Cho 2013; Lee and Lee 2018). Whether acquiring a job or not is likely to affect the level of graduates' SWB. *Health condition* is self-reported. Health has been demonstrated to be one of the most critical factors for increasing the level of SWB. *Self-efficacy* represents a psychological characteristic, similar to self-esteem, showing personality. Many studies particularly on college students demonstrated that self-esteem or self-efficacy increased SWB (Kim 2018; Proctor, Linley, and Maltby 2009). *Religion* was included, too. Religion was not measured before 2014, so we used religion data from 2014 for the other years.

The second group of variables are related to college education, and include *college prestige*, *college major*, *GPA*, *pride in college*, and *satisfaction with major*. We included *college prestige* to consider the fact that the social reputations of colleges play an important role in accounting for inequalities in social rewards, such as income and opportunities in life, in Korea, which could affect SWB. *College major* and *GPA* might affect a person's chances in the job market, which could be related to SWB as well. *Pride in college* and *satisfaction with major* are subjective evaluations of school life. These two variables are not objectively related to a person's chances in the labor market. Rather, they indicate students' satisfaction with school life in general, which could improve overall life satisfaction.

The third group of control variables includes two kinds of variables about family: the first kind relates to family background, i.e., *parents' education*, *parents' job*, and *household income*, and the second kind is a subjective evaluation of family relations, i.e., *satisfaction with family*. College students and even recent graduates are not yet socially or financially independent. In Korea, many of them are largely dependent on their families. Overall, young adults receive emotional or economic support from their families. Parents' socio-economic status can be well represented by their education, job, and income. These variables could affect young adults' SWB (Chow 2005). Particularly given the analysis of the effects of student loan debt on SWB, parents with higher levels of education, professional jobs, and higher household incomes could reduce the negative effects of student loan debt on student borrowers' SWB. Therefore, it is appropriate for us to control for family background. Variables about family background were extracted from the KEEP household data collected in 2007, when most subjects were high-school seniors. The household data collected in 2007 were the latest household data before the question on parents' income was added from 2012 to 2015 in the KEEP survey. *Satisfaction with family*, which is a subjective evaluation of family relations, is a key factor indicating social relations that could positively affect SWB.

The final group of variables is made up of calendar year variables. We used calendar years, *Year 2011* to *Year 2015*, to control for the differences in socioeconomic situations that could affect SWB.

TABLE 1
DEFINITIONS AND MEASUREMENTS OF VARIABLES

Variable	Definition/Measurement
<i>Dependent Variable</i>	
Happiness	Measured on a 11-point scale (0 = very unhappy, 10 = very happy).
<i>Independent Variables</i>	
Remaining debt	Measured by the respondents' answers to the question, "What is your current amount of debt from a student loan?" Answers to the question were recategorized to: 0 = no student loan or no remaining debt from a student loan; 1 = remaining debt from a student loan.
Negative experience	0 = I did not take a student loan; 1 = I experienced none of the following nine difficulties for repayment of the student loan that I had taken; 2 = I experienced at least one of the following nine difficulties for repayment of the student loan that I had taken: (1) I experienced an overdue payment of principal or interest, (2) I experienced a repayment delay, (3) I actively looked for a job for repayment, (4) I took several jobs simultaneously for repayment, (5) I decided on jobs on the basis of pay rather than talent or vision, (6) For repayment, I could not quit a job that I did not like, (7) I had to cut down spending and expenditures for repayment, (8) I borrowed other loans from a financial institution for repayment, (9) I borrowed money from family, relatives, or acquaintances for repayment.
<i>Control Variables</i>	
Sex	0 = female, 1 = male.
Job	Measured by the respondents' answers to the question, "Do you have a job now?" Answers to the question were 0 = no, 1 = yes.
Income group	Respondent's own income: (1) no income, (2) low income: greater than 0 and less than or equal to 500,000 Korean won, (3) mid-income: greater than 500,000 and less than or equal to 1,500,000 Korean won, (4) high income: greater than 1,500,000 Korean won. Income was adjusted for inflation via the consumer price index.
Log allowance	Natural logarithm of allowance that was adjusted for inflation via the consumer price index. When allowance was 0, 1 was added in order not to have missing values.

TABLE 1
DEFINITIONS AND MEASUREMENTS OF VARIABLES

Variable	Definition/Measurement
Self-efficacy	Sum of the answers to the six items: (1) I know what I can do well, (2) I know what I like, (3) I know what is important in my life, (4) I easily decide what I should decide, (5) I can do well what I have planned, (6) I think that I am a decent person. Answers to each item were measured on a 5-point scale (1 = not true at all, 5 = completely true).
Health condition	Measured on a 5-point scale (1 = very unhealthy, 5 = very healthy).
Religion	0 = no, 1 = yes. Measured in 2014.
College prestige	Joongangilbo's rankings of colleges in the respondents' senior years: (1) 1st to 10th, (2) 11th to 30th, (3) below 30th.
College major	College major: (1) liberal arts, (2) social science, (3) education, (4) engineering, (5) natural science, (6) medicine, (7) arts.
GPA	Undergraduate grade point average.
Pride in college	Measured on a 5-point scale (1 = not proud of college at all, 5 = very proud of college).
Satisfaction with major	Measured on a 5-point scale (1 = very unsatisfied, 5 = very satisfied).
Parents' education	Higher one among parents' levels of education: (1) middle school or lower, (2) high school, (3) college or higher.
Parents' occupation	0 = neither parent had a managerial or professional occupation; 1 = one of the parents had a managerial or professional occupation.
Log household income	Natural logarithm of average monthly household income in 2007. When household income was 0, 1 was added in order not to have missing values.
Satisfaction with family	Measured on a 5-point scale (1 = very unsatisfied, 5 = very satisfied).
Calendar year	Calendar year in which each respondent was interviewed.

Results

Descriptive Statistics

According to the datasets used in our analyses, a sizable proportion of college students (29.4% of the total seniors) utilized student loans. Table 2 presents descriptive statistics of the datasets used in our analyses by the use of student loans. The statistics for *sex* suggest an issue of representativeness of the data, since males made up about 41% of the respondents among non-loan takers, and about 31% among loan takers, perhaps because many males complete their mandatory military service before or after they graduate from college. Therefore, we carried out our multiple linear regression analyses using a weight variable as mentioned above. It is also notable that around 70% of the respondents had attended or graduated from colleges with ranks below 30th in the nation, which reflected the fact that only a small portion of colleges in Korea are considered prestigious.

According to the statistics for *income group*, 27.48% of college graduates who had not taken out a loan and 16.75% of college graduates who had taken out a loan did not earn any income right after graduation. Similarly, the statistics for *job* show that 37.27% of college graduates who had not taken out a loan and 26.60% of college graduates who had taken out a loan were jobless upon college graduation. This may reflect the important social issue of the difficulty of college graduates' finding fair jobs.⁷ The fact that the mean of *happiness* decreased from 7.16 to 6.75 among non-loan takers and from 6.75 to 6.64 among loan takers upon college graduation may indicate similarly difficult situations faced by all college graduates.

An interesting point that merits attention is that student loan takers were more likely to take jobs and earn higher income within one year of graduation; 73.4% out of those who had used student loans took jobs, whereas 62.73% of those who had not used student loans had taken jobs (see Table 2). Similarly, there was an income difference between borrowers and non-borrowers within one year of graduation. Compared to non-borrowers, fewer borrowers had no income and more borrowers earned higher incomes (see Table 2). Previous research (Bae and Park 2016; Jung et al. 2017) showed

⁷ The unemployment rate of young people has been around 10% for the last 10 years in Korea. Refer to the Korea Statistics website (http://www.index.go.kr/potal/main/EachDtlPageDetail.do?idx_cd=1063).

TABLE 2
DESCRIPTIVE STATISTICS

	College seniors				First-year graduates			
	Non-loan takers		Loan takers		Non-loan takers		Loan takers	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
<i>Remaining debt</i>								
No remaining debt			78	45.88			81	44.75
Remaining debt			92	54.12			100	55.25
<i>Negative experience</i>								
No experience of difficulties for repayment of debt			94	54.34			107	58.79
Experience of difficulties for repayment of debt			79	45.66			75	41.21
<i>Sex</i>								
Female	292	58.75	142	68.60	283	58.59	141	69.46
Male	205	41.25	65	31.40	200	41.41	62	30.54
<i>Income group</i>								
No income	287	63.36	88	45.60	122	27.48	32	16.75
Low income	84	18.54	55	28.50	53	11.94	17	8.90
Mid-income	42	9.27	31	16.06	103	23.20	64	33.51
High income	40	8.83	19	9.84	166	37.39	78	40.84
<i>Religion</i>								
No	335	69.50	127	61.95	332	69.60	126	62.69
Yes	147	30.50	78	38.05	145	30.40	75	37.31
<i>College prestige</i>								
1st to 10th	71	15.40	18	9.28	69	15.44	18	9.42
11st to 30th	73	15.84	26	13.40	70	15.66	26	13.61
below 30th	317	68.76	150	77.32	308	68.90	147	76.96
<i>College major</i>								
Liberal arts	53	11.80	34	17.80	51	11.72	34	18.09
Social science	131	29.18	52	27.23	127	29.20	51	27.13
Education	39	8.69	14	7.33	39	8.97	14	7.45
Engineering	112	24.94	40	20.94	107	24.60	38	20.21
Natural science	54	12.03	20	10.47	53	12.18	20	10.64
Medicine	23	5.12	12	6.28	23	5.29	12	6.38
Arts	37	8.24	19	9.95	35	8.05	19	10.11
<i>Parents' education</i>								

TABLE 2
DESCRIPTIVE STATISTICS

	College seniors				First-year graduates			
	Non-loan takers		Loan takers		Non-loan takers		Loan takers	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Middle school or lower	41	9.38	14	7.87	40	9.43	14	7.95
High school	211	48.28	88	49.44	206	48.58	87	49.43
College or higher	185	42.33	76	42.70	178	41.98	75	42.61
Parents' occupation								
Other than managerial or professional	287	68.33	112	67.07	281	69.04	111	67.27
Managerial or professional	133	31.67	55	32.93	126	30.96	54	32.73
Calendar year								
2011	124	24.95	59	28.50				
2012	107	21.53	42	20.29	118	24.43	55	27.09
2013	116	23.34	58	28.02	107	22.15	42	20.69
2014	150	30.18	48	23.19	108	22.36	58	28.57
2015					150	31.06	48	23.65
Job								
No					180	37.27	54	26.60
Yes					303	62.73	149	73.40
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Happiness	7.16	1.60	6.75	1.86	6.75	1.90	6.64	1.98
Log allowance	3.43	.53	3.45	.53	3.62	.64	3.62	.71
Self-efficacy	22.92	3.39	22.43	3.65	22.76	3.40	22.09	4.00
Health condition	3.74	.81	3.57	.89	3.65	.80	3.49	.88
GPA	82.60	8.21	79.88	10.77	82.62	8.28	79.73	10.84
Pride in college	3.54	0.84	3.53	.87	3.53	.85	3.53	.87
Satisfaction with major	3.67	.65	3.52	.77	3.67	.65	3.52	.77
Log household income	5.79	.62	5.72	.55	5.79	.62	5.72	.56
Satisfaction with family	3.94	.74	3.79	.78	3.77	.75	3.63	.79

that students who used student loans tended to accept jobs more quickly, but they worked for lower-wage jobs or jobs less likely to fit their majors than did non-borrowers. Our current study shows that borrowers took jobs more quickly and earned higher incomes compared to non-borrowers within one year of graduating. We can suggest that borrowers tended to take jobs more quickly than non-borrowers did because they were more likely to feel financially pressured to take jobs and earn an income.

Results from Multiple Linear Regression Analyses

Table 3 shows the results from the multiple linear regression analyses of the effects of *remaining debt*, *negative experience*, and control factors on the happiness of college seniors. According to Models 1 and 2 as shown in Table 3, it is evident that neither having nor not having remaining student loan debt affected the SWB of college seniors; those who had remaining debt reported the same happiness scores as those who had not taken a student loan or those who had paid their student loans back. This is true whether or not control factors were included in the analyses. This finding suggests that there was no strong relationship between the two variables of *remaining debt* and *happiness* in the case of seniors.

According to Model 3, shown in Table 3, the difficulties that borrowers experienced in paying back their loans were not significantly related to the happiness scores of college seniors if control variables were not considered.⁸ However, according to Model 4 in Table 3, the difficulties that borrowers experienced in paying back their loans were significantly related to the happiness scores of college seniors if control factors were considered; those who took advantage of student loans and experienced at least one difficulty in repayment of their loans reported lower happiness scores by 0.623 points, over those who had not taken out a student loan or those who had taken out a student loan and had experienced no difficulties in repayment. This finding tells us that there was an evident association between *negative experience* and *happiness* in seniors when relevant conditions were controlled for. The negative experience of difficulties rather than the presence of remaining debt has been demonstrated to be a critical factor affecting seniors' happiness. We

⁸ In Model 3 of Table 4, the coefficient of *experience of difficulties for repayment of debt* was not statistically significant, because its standard error was large (.567). Model 3 used the same cases as those used in Model 4 that included control variables. When the whole of cases ($N = 669$) were analyzed, the same coefficient was statistically significant ($p < 0.05$), because its standard error was smaller (.385). We can suggest that this difference is due to the omission of cases in Model 3.

found the negative effects of student loans in this relationship, that is, the relationship between experiencing difficulties in repayment and happiness.

Model 4 in Table 3 also presents the effects of control variables on the happiness of college seniors. First, several individual-level factors were clearly related to the SWB of college seniors. *Log allowance* and *health condition* positively affected *happiness*. These results are in line with previous research demonstrating that economic resources and health conditions have positive effects on SWB (Deeming 2013; Diener and Biswas-Diener 2002). The reason that allowance, rather than income, affected happiness positively may be that, for college students, allowance, defined in the survey as the money that can be used for an individual's own needs excluding housing expenses or educational expenses, was more important than income. This was especially true when it was difficult for them to earn a substantial income before they finished their college education. *Self-efficacy*, a psychological characteristic of an individual, significantly increased the SWB of college seniors, as previous SWB research has shown (Kim 2018; Proctor et al. 2009). The influence of *sex* on *happiness* was also noted. Therefore, we have some evidence that male college seniors showed higher SWB than did female college seniors.

Second, several variables related to college education were associated with the SWB of college seniors as well. The effects of *college prestige* emerged: compared to those whose colleges ranked below 30th in the nation, those whose colleges ranked 11th to 30th reported lower happiness scores. At the same time, there was no difference between the happiness scores of those whose colleges ranked within the top 10 and the happiness scores of those whose colleges ranked below 30th. We can observe the negative effect of the in-between group in terms of college prestige on the happiness of college seniors. Further investigation is needed in order to understand why those whose colleges ranked 11th to 30th seemed to be less happy than were those whose colleges ranked below 30th and those whose colleges ranked in the top 10. *Pride in college* and *satisfaction with major*, which can be regarded as subjective evaluations of college education, showed strong positive effects on the SWB of college seniors. Especially, *satisfaction with the college major* was more important than the college major itself, the coefficients of which were insignificant except for that of *social science*, in accounting for the happiness of college seniors. Similarly, both *satisfaction with major* and *pride in college* were more important factors than was *GPA*, which measured objective academic achievements of college seniors and showed no effects on the SWB of college seniors. This is understandable, as previous studies have shown that subjective factors are more important than objective factors in raising the

TABLE 3
RESULTS FROM THE MULTIPLE LINEAR REGRESSION ANALYSES ON
HAPPINESS FOR COLLEGE SENIORS

	Model 1	Model 2	Model 3	Model 4
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
<i>Independent variables</i>				
Remaining debt ^a	-0.172 (.394)	-0.325 (.217)		
No experience of difficulties for repayment of debt ^b			.084 (.188)	-.151 (.167)
Experience of difficulties for repayment of debt ^b			-.780 (.567)	-.623** (.305)
<i>Control variables</i>				
Male ^c		.306 (.215)		.398* (.226)
Low income ^d		.029 (.221)		.019 (.211)
Mid-income ^d		-.007 (.383)		-.031 (.364)
High income ^d		-.324 (.385)		-.032 (.289)
Log allowance		.524*** (.190)		.484** (.191)
Self-efficacy		.106*** (.032)		.115*** (.031)
Health condition		.411*** (.135)		.354** (.139)
Religion ^e		-.038 (.190)		-.114 (.189)
College ranked 11st to 30th ^f		-.333 (.217)		-.391* (.208)
College ranked 1st to 10th ^f		-.423 (.305)		-.495 (.313)
Social science ^g		-.441 (.319)		-.546* (.300)
Education ^g		-.490 (.427)		-.210 (.432)
Engineering ^g		.104 (.312)		-.016 (.292)
Natural science ^g		-.022 (.317)		-.060 (.308)

TABLE 3
RESULTS FROM THE MULTIPLE LINEAR REGRESSION ANALYSES ON
HAPPINESS FOR COLLEGE SENIORS

	Model 1	Model 2	Model 3	Model 4
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
Medicine ^g		-.482 (.462)		-.335 (.464)
Arts ^g		-.436 (.463)		-.081 (.385)
GPA		-.003 (.009)		-.005 (.008)
Pride in college		.245** (.097)		.216** (.094)
Satisfaction with major		.307** (.134)		.339*** (.127)
Parents' high school education ^h		-.009 (.333)		-.130 (.299)
Parents' college education or higher ^h		.031 (.349)		-.020 (.331)
Parents' managerial or professional occupation ⁱ		.229 (.187)		.154 (.188)
Log household income		.172 (.180)		.065 (.163)
Satisfaction with family		.490*** (.133)		.478*** (.125)
Year 2012 ^j		-.169 (.276)		-.186 (.269)
Year 2013 ^j		-.033 (.326)		.019 (.342)
Year 2014 ^j		-.532* (.274)		-.530* (.280)
Constant	7.172*** (.101)	-2.889* (1.743)	7.220*** (.110)	-1.781 (1.539)
N	384	384	383	383
R ²	.002	.440	.029	.441

* $p < .1$, ** $p < .05$, *** $p < .01$. Reference groups: *a* = No student loan or no remaining debt; *b* = No student loan; *c* = Female; *d* = No income; *e* = No religion; *f* = College ranked below 30th (college prestige); *g* = Liberal arts (college major); *h* = Parents' middle school education or lower; *i* = Parents' non-managerial and non-professional occupation.; *j* = Year 2011.

level of SWB (Kim 2018).

Third, among the family-related variables, those related to family background, i.e., parents' jobs, levels of education, and household income, did not influence the happiness of college seniors. We can argue that whereas family background might affect objective outcomes of college students' activities, such as academic achievements (Sirin 2005), it is not a critical factor that affects the subjective aspects of college students significantly. Meanwhile, *satisfaction with family*, which measured subjective evaluation of family relations, significantly increased the SWB of college seniors. This finding is in line with the fact that other subjective variables, i.e., *pride in college* and *satisfaction with major*, had positive effects on *happiness* as shown above.

Lastly, among the calendar-year variables, *year 2014* significantly lowered the SWB of college seniors. We can infer that some factors other than the independent and other control variables in our models of regression analyses decreased the happiness of college seniors from 2011 to 2014. Further investigation is required to understand why a particular year affected individuals' SWB.

Table 4 shows the results from the multiple linear regression analyses of the effects of *remaining debt*, *negative experience*, and control factors on the happiness of recent college graduates. Models 1 and 3 in Table 4 show that, without considering control factors, difficulties that borrowers experienced in paying back the loan lowered the SWB of college graduates, whereas remaining student loan debt did not influence the SWB of college graduates. Those who took out a student loan and experienced at least one difficulty in its repayment reported lower happiness scores by 0.843 points over those who had not taken out a student loan or those who had taken out a student loan and repaid it without any difficulty. These results suggested some differences compared to the results from college seniors. The relationship between the *negative experience and happiness* was significant in graduates only. If we focus only on the relationship between the two independent variables and the dependent variable without considering control factors, it seems that the negative effects of student loans on SWB became stronger following graduation. We might suggest that graduates started to face more pressure due to repayment than seniors had.

Second, when control factors were included in the analyses, we did not find statistically significant evidence that *remaining debt* and *negative experience* influenced the SWB of college graduates, as shown in Models 2 and 4 in Table 4. Then, if we compare Model 4 in Table 4 to Model 4 shown

TABLE 4
RESULTS FROM THE MULTIPLE LINEAR REGRESSION ANALYSES ON
HAPPINESS FOR COLLEGE GRADUATES 1

	Model 1	Model 2	Model 3	Model 4
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
<i>Independent variables</i>				
Remaining debt ^a	-.100 (.310)	-.049 (.219)		
No experience of difficulties for repayment of debt ^b			.271 (.264)	-.115 (.195)
Experience of difficulties for repayment of debt ^b			-.843** (.379)	-.226 (.306)
<i>Control variables</i>				
Male ^c		.114 (.214)		-.036 (.241)
Having a job ^d		.271 (.268)		.200 (.267)
Low income ^e		-.580 (.387)		-.566 (.383)
Mid-income ^e		.082 (.320)		.075 (.326)
High income ^e		.105 (.317)		.125 (.317)
Log allowance		.296* (.166)		.333** (.169)
Self-efficacy		.156*** (.035)		.167*** (.034)
Health condition		.549*** (.130)		.529*** (.132)
Religion ^f		.077 (.186)		.157 (.188)
College ranked 11st to 30th ^g		.080 (.225)		-.002 (.233)
College ranked 1st to 10th ^g		-.762* (.392)		-.875** (.389)
Social science ^h		-.356 (.275)		-.277 (.271)
Education ^h		-.188 (.385)		-.120 (.400)
Engineering ^h		-.195 (.322)		-.062 (.316)

TABLE 4
RESULTS FROM THE MULTIPLE LINEAR REGRESSION ANALYSES ON
HAPPINESS FOR COLLEGE GRADUATES 1

	Model 1	Model 2	Model 3	Model 4
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
Natural science ^h		-.255 (.297)		-.164 (.289)
Medicine ^h		-.327 (.389)		-.179 (.381)
Arts ^h		-.203 (.481)		-.056 (.445)
GPA		.005 (.010)		.002 (.010)
Pride in college		-.040 (.112)		-.007 (.117)
Satisfaction with major		.105 (.142)		.066 (.143)
Parents' high school education ⁱ		.489 (.395)		.409 (.363)
Parents' college education or higher ⁱ		.328 (.417)		.227 (.389)
Parents' managerial or professional occupation ^j		-.051 (.219)		-.024 (.221)
Log household income		-.023 (.216)		-.049 (.207)
Satisfaction with family		.593*** (.139)		.617*** (.136)
Year 2013 ^k		-.288 (.251)		-.117 (.247)
Year 2014 ^k		-.233 (.298)		-.131 (.312)
Year 2015 ^k		-.322 (.255)		-.207 (.268)
Constant	6.727*** (.122)	-2.729 (1.831)	6.743*** (.138)	-2.635 (1.779)
N	390	390	392	392
R ²	.000	.432	.026	.453

* $p < .1$, ** $p < .05$, *** $p < .01$. Reference groups: *a* = No student loan or no remaining debt; *b* = No student loan; *c* = Female; *d* = Jobless; *e* = No income; *f* = No religion; *g* = College ranked below 30th (college prestige); *h* = Liberal arts (college major); *i* = Parents' middle school education or lower; *j* = Parents' non-managerial and non-professional occupation.; *k* = Year 2012.

in Table 3, we can maintain that the negative effect of *negative experience* on *happiness* disappeared after college graduation. This seems to contradict the intuition that the burden of student loans would increase after college graduation, because graduates should begin to confront the reality of repaying their loans.

Given the fact that the negative influences of *negative experience* on the SWB of college graduates disappeared when control factors were considered, we investigated which group of control factors contributed to such a disappearance. Table 5 presents the results of this investigation. It turns out that, among the four groups of control factors, the group of individual-level variables (Model 1) and the group of college-related variables (Model 2) contributed to the disappearance of the influences of *negative experience* on the SWB of college graduates. The other two groups of control factors, i.e., the group of family-related variables (Model 3) and the group of calendar-year variables (Model 4), did not make the influences of *negative experience* disappear. An interesting result that merits attention is that among the four groups of control factors, the group of individual-level variables contributed the most to the disappearance of the influences of *negative experience* on the SWB of college graduates: when it was controlled for, the size of the influence of *negative experience* on SWB was the smallest (the coefficient of *experience of difficulties for repayment of debt* was -0.239), according to Model 1 of Table 5.

The fact that the group of individual-level variables made the influences of *negative experience* disappear might result from the influences of *log allowance*, *self-efficacy*, and *health condition*, in that the coefficients of these three variables were statistically significant, as shown in Model 1 of Table 5. The fact that the group of college-related variables made the influences of *negative experience* disappear might result from the influences of *engineering* and *satisfaction with major*, in that the coefficients of these two variables were statistically significant, as shown in Model 2 of Table 5.

These two groups of control variables are possibly related to graduates' good prospects in the job markets. Once a college graduate who had taken a student loan was able to earn a substantial income after graduation, they could have a concrete expectation regarding repaying their loans. According to Table 2, more borrowers than non-borrowers took jobs and earned higher income after graduation. Borrowers' economic activities and income could reduce their financial worries, which could weaken the negative effects of student loan debt on happiness.

The effects of control variables on the happiness of college graduates, presented in Model 4 of Table 4, can be compared to those presented in

Model 4 of Table 3, as discussed above. First, among the individual-level variables that significantly affected the SWB of college seniors, the effects of *sex* disappeared: gender was not an important factor for happiness once borrowers completed their education. *Log allowance*, *self-efficacy*, and *health condition* positively affected the happiness of college graduates just as they affected the happiness of college seniors. The robustness of the effects of these variables were confirmed. Interestingly, variables related to material resources, i.e., *job* and *income*, did not influence the SWB of college graduates. That is, many jobs started right upon college graduation were not good enough in terms of pay and working conditions to increase the SWB of college graduates, and borrowers' income levels right after college graduation were not high enough. Given this situation, understandably, *allowance* rather than *income* was as important to the first-year graduates as it was to seniors. *Religion* was insignificant in explaining the happiness of college graduates, just as it was for college seniors.

Second, all variables related to college education except for *college prestige* did not affect *happiness* of college graduates. The way in which *college prestige* affected *happiness* changed: compared to those whose colleges ranked below 30th, those whose colleges ranked in the top 10 reported lower happiness scores. At the same time, there was no difference between the happiness scores of those whose colleges ranked 11th to 30th and the happiness scores of those whose colleges ranked below 30th in the nation. This pattern differs from the pattern of the effect of college prestige presented in Table 3. A further investigation is needed to understand this change. The fact that the effects of *pride in college* and *satisfaction with major* disappeared among college graduates implies that subjective evaluation of school life was effective in raising happiness only among college students. For the variables related to college education, overall, most of them, except for *college prestige*, were no longer significant factors of happiness upon completion of higher education.

Third, family background variables including parents' jobs and education, as well as household income did not significantly influence the SWB of college graduates, whereas *satisfaction with family* positively affected the SWB of college graduates. These results are the same as those from the analysis of college seniors.

Lastly, calendar year did not affect the happiness of college graduates. It was unlikely that some factors other than the independent and other control variables in our models of regression analyses made the happiness of college graduates change across the 2012-2015 period.

TABLE 5
RESULTS FROM THE MULTIPLE LINEAR REGRESSION ANALYSES ON *HAPPINESS* FOR
COLLEGE GRADUATES 2

	Model 1	Model 2	Model 3	Model 4
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
<i>Independent variables</i>				
No experience of difficulties for repayment of debt ^d	-.001 (.204)	.203 (.243)	.070 (.241)	.281 (.267)
Experience of difficulties for repayment of debt ^d	-.239 (.335)	-.529 (.361)	-.706** (.292)	-.854** (.387)
<i>Control variables</i>				
Male ^b	-.081 (.180)			
Having a job ^c	.139 (.268)			
Low income ^d	-.311 (.372)			
Mid-income ^d	.277 (.295)			
High income ^d	.331 (.303)			
Log allowance	.324* (.174)			
Self-efficacy	.208*** (.031)			
Health condition	.603*** (.131)			
Religion ^e	.257 (.182)			
College ranked 11st to 30th ^f		.157 (.254)		
College ranked 1st to 10th ^f		-.490 (.510)		
Social science ^g		.017 (.348)		
Education ^g		.374 (.589)		
Engineering ^g		.655* (.393)		
Natural science ^g		.385 (.373)		

TABLE 5
RESULTS FROM THE MULTIPLE LINEAR REGRESSION ANALYSES ON HAPPINESS FOR
COLLEGE GRADUATES 2

	Model 1	Model 2	Model 3	Model 4
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
Medicine ^g		.487 (.428)		
Arts ^g		.163 (.526)		
GPA		.012 (.013)		
Pride in college		.156 (.142)		
Satisfaction with major		.374* (.192)		
Parents' high school education ^h			.283 (.393)	
Parents' college education or higher ^h			.225 (.442)	
Parents' managerial or professional occupation ⁱ			-.366 (.265)	
Log household income			.065 (.233)	
Satisfaction with family			1.090*** (.140)	
Year 2013 ^j				.168 (.317)
Year 2014 ^j				.020 (.373)
Year 2015 ^j				-.049 (.296)
Constant	-1.593* (.857)	3.595*** (1.099)	2.227 (1.430)	6.717*** (.262)
<i>N</i>	392	392	392	392
<i>R</i> ²	.381	.088	.230	.028

* $p < .1$, ** $p < .05$, *** $p < .01$. Reference groups: *a* = No student loan; *b* = Female; *c* = Jobless; *d* = No income; *e* = No religion; *f* = College ranked below 30th (college prestige); *g* = Liberal arts (college major); *h* = Parents' middle school education or lower; *i* = Parents' non-managerial and non-professional occupation.; *j* = Year 2012.

Discussions and Conclusion

For this article, we examined the effects of student loans on the SWB of borrowers by analyzing KEEP survey data. Our first finding was the negative effects of *negative experience* caused by student loan repayment among seniors in college. The negative experience of difficulties in repayment lowered the SWB of seniors significantly. However, *remaining debt* did not affect college seniors significantly regardless of control variables.

Second, the negative effects of student loans on student loan takers did not appear during the first year after graduation. We investigated which group of control factors contributed to this disappearance. Our main finding is that, among the four groups of control factors, the group of individual-level variables and the group of college-related variables contributed to the disappearance of the influences of *negative experience* on SWB. We added that the group of individual-level variables contributed the most to the disappearance of the influences of *negative experience* on the SWB of college graduates by reducing the size of the influence of *negative experience* on SWB the most. The biggest difference between seniors and graduates was that graduates started to take jobs. Considering that student loan borrowers started jobs more quickly and earned more income than did non-borrowers within one year following graduation, we suggested that borrowers' growing expectations regarding their ability to repay their loans after graduation contributed to making the negative effects of student loan debt on happiness neutralized. At least during the year following graduation, the negative effects of student loan debt on SWB did not appear.

Do this study's findings support or contradict previous studies? What are interesting points worth further examination? Previous researchers showed that student loans do not always present negative effects on borrowers' lives (Zhang and Kemp 2009), but we did find negative connections at least in college students, in contrast with findings from a previous study on Korean students using the same data (Kang et al. 2018). The different outcomes might result from the control variables used. Our analyses included several important control variables that might influence the SWB of college students as young adults.

First, we had expected some negative association between student loans and SWB, and indeed our results showed that student loans overall negatively affected the SWB of college students. These results supported previous findings that student debt negatively influences SWB (Tay et al. 2017).

Student loans are debts to be repaid in the future, and we proposed that student loan borrowers would feel financially burdened by loan repayment even if they considered loans to be investments in their future jobs.

Second, we found results in the analysis of recent college graduates different from those in the analysis of college students: college graduates were not negatively influenced by student loans when several relevant control variables were taken into consideration. We provided some evidence in the interpretation of the results, such as borrowers' growing expectations regarding their ability to repay loans by taking jobs and earning incomes. However, we need to analyze a longer period to fully understand how student loans influence borrowers' SWB after graduation. Because of the limitations of the data, we investigated only the first year following graduation. Future studies should highlight borrowers' SWB over a longer post-graduation period.

This study also supported the results from previous general research on the SWB as well as SWB research on college students, and further contributes to the understanding of young adults' SWB and the changes of SWB between college students and recent graduates. Above all, subjective variables such as *self-efficacy*, *self-reported health*, and *satisfaction with family* have been confirmed to be robust in raising the level of SWB in young adults. Next, most variables related to college education such as *satisfaction with major* and *pride in college* are important only to college students, not to graduates. Finally, it might be interesting to note that *allowance*, the money used for an individual's own needs, rather than *income*, positively affects young adults' happiness. Whether we can afford to satisfy our needs seems to be more important than how much money we earn or have, at least to young adults. This could be true for adults in general, too.

Our study, in addition, contributes to the general body of research on student loans. Many studies have looked at the negative effect of student loan debt on young adults' lives, such as their transition to the labor market, home-buying, marriage, and financial stress, as shown largely in the research on US student loans. Research on the subjective effects of student loans has so far largely focused on borrowers' financial well-being. We have demonstrated that student loan debt, as one measurement of financial status, can affect young adults' SWB to some degree. Specifically, this study contributes to the examination of the association between student loan debt and SWB while taking into consideration several relevant control variables.

Finally, we can suggest some implications for student loan policy. Over the past decade, the Korean government has made significant efforts to

reduce the financial burden of higher education by expanding national scholarships and improving the repayment terms of student loans. However, if student loans can predict lower SWB of college students while they are in college, there should be more efforts to reduce the individual cost of higher education by increasing its public financing. Then, what can we infer from the results regarding recent college graduates? We found that college graduates with student loan debt started jobs more quickly and earned higher incomes than did those without debt. We suggested this might be one reason that reduces the negative influence of debt on SWB. Even if this is true, we should raise one concern. Previous research (Bae and Park 2016; Jung et al. 2017) found that student loan borrowers started jobs more quickly, but were more likely to be employed in lower-paying jobs or to take jobs less likely to fit their college majors than were non-borrowers. Student loans may present negative effects on young adults' transition into the labor market. We have not demonstrated specifically such negative effects in the analysis. However, it would be reasonable for us to be concerned with the possibility of negative consequences resulting from student loan debt in the transition to the labor market even if no association between student loans and happiness was found within one year after graduation. What we would like to point out, lastly, is that an analysis of a longer period following graduation is vital for us to fully understand the effects of student loan debt on the happiness of graduates.

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