

# What Influences Student Loan Delinquency?

## Evidence from a Survey in Japan

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### Abstract

Given current global uncertainty, created by sluggish economies and challenging job markets, the ability of students to repay their loans is not always clear, nor is it clear whether these loans are contributing to their careers and lives. This study attempts to clarify these issues using data from the “Survey on Attributes of Student Loan Repayers” (2017) conducted by the Japan Student Services Organization. This study assesses the realities of loan repayment based on information collected at the time of the loan application and examines the impact of student loans on the lives of Japanese students. The analysis reaffirms that employment status and a stable income influence loan repayment. However, it also highlights the significance of the loan recipients’ awareness and involvement in the application decision and the application process, revealing that awareness and involvement at the time of the application impact future repayment. Moreover, the evaluations of the value of the student loans reveal that while delinquent borrowers highly value the loans for enabling them to pursue their further education, they see less value in the loans in terms of their ability to study more and thereby improve their learning outcomes.

**Keywords:** student loan, loan repayment, loan application process, awareness of repayment obligations

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## **Introduction**

Student loans have long been a crucial aspect of educational policy to promote equal opportunities in higher education. However, amidst economic uncertainty and a sluggish job market, challenges remain regarding the ability of students to repay their loans and it is unclear whether these loans are contributing to their careers and lives. The media frequently reports on post-graduation difficulties in repaying student loans, sparking public concern, often dubbed as “student loan hell.” Given the potential impact of negative public perceptions on prospective loan applicants, it is imperative that we assess the reality of the loan recipients' situations and the factors influencing their repayment difficulties beyond anecdotal evidence. Investigating the repayment situation is thus an urgent task.

Previous studies have examined the role of student loans in reducing educational disparities in the ability to choose to continue one’s education (Johnstone, 2005) as well as their effects during university study, such as increased study time and reduced part-time work hours (Clotfelter, 1991; Ziderman, 2002; Kobayashi, 2009). However, few empirical studies have focused on the students’ loan application decision process juxtaposed with their postgraduate careers and their repayment status. One reason is the limited availability of postgraduate survey data, particularly surveys targeting loan recipients. We fill this gap in the literature by using data from a 2017 survey by the Japan Student Services Organization. This organization is responsible for administering student loan programs in Japan, providing a comprehensive understanding of the realities of loan repayment to the applicants, and examining the applicant’s circumstances at the time of the application. Unfortunately, the organization has only conducted one such survey,

which limits the data to a single-year scope, preventing longitudinal observation. It also only focused on the loan recipients, limiting any comparisons with nonrecipients.

Although the survey has these limitations, the survey captured comprehensive data on loan applications and repayment, offering us a valuable basis for our analysis. The survey data allow us to examine repayment issues in the context of their current lives, while considering their circumstances at the time of application. Our objective is to clarify the effects of student loans on recipients to identify existing challenges and offer recommendations for process improvements going forward.

## **Methodology**

### ***Data***

The survey conducted by the Japan Student Services Organization, titled “Survey on Attributes of the Scholarship Loan Recipients” (2017), targeted students who had loans to repay. The survey covered 3,329 individuals who were overdue on loan repayments for more than three months and 2,296 individuals who were not. The survey items included application-related questions (e.g., document preparation, application process, awareness of repayment obligations), current life and employment questions (cohabitants, annual income, and occupation), repayment questions (source of repayment, awareness of delinquency, and recognition of deferment programs), and an evaluation of the usefulness of the loan based on a five point Likert scale.

### ***Analytic framework***

In our analytic framework, we first examined aspects such as involvement in the preparation of loan application documents and awareness of repayment obligations at the student loan application stage before university enrollment. Based on this, we then looked at their postgraduate lives, careers, and repayment realities, including evaluations of the effects of student loans, considering their stage of university enrollment.

### *Hypotheses*

A key benefit of this survey was the inclusion of information related to the application process. For example, the survey asked, “Who recommended that you apply for the student loan?” Table 1 shows an aggregation of the responses from all the individuals surveyed (i.e., delinquent and non-delinquent). Among the non-delinquent individuals, 28% made the decision themselves, whereas of the delinquent individuals, 21% made the decision themselves. Among those who indicated that the process was recommended by someone else, over half of both the delinquent and non-delinquent individuals pointed to their parents. However, 16% of the delinquent individuals indicated that the process was “Recommended by school teachers or staff,” reflecting a relatively high percentage. Thus, compared with non-delinquent individuals, a lower proportion of delinquent individuals made the decisions themselves regarding the loan application, with a higher proportion influenced by schoolteachers or staff.

Additionally, when asked about the person responsible for document preparation at the time of the loan application (see Table 1), 54% of non-delinquent individuals responded “myself,” whereas only 35% of the delinquent individuals did so. For delinquent individuals, the proportion indicating their parents helped prepare the

application was 36%. Thus, compared with non-delinquent individuals, delinquent individuals reflected a lower proportion of self-preparation and a higher proportion of parental preparation.

Based on the differences in responses between delinquent and non-delinquent individuals, we inferred that circumstances at the time of the application could also affect future repayment status. In other words, the motivation to apply for student loans and the level of involvement in document preparation at the time of application could lead to future differences in the repayment status. Individuals with higher levels of motivation and involvement at the time of the application were predicted to have a better understanding of student loans in the application stage, leading to smoother repayments. Therefore, we proposed the following two hypotheses:

*Hypothesis 1:* Individuals with higher levels of motivation and involvement in the application process will have an earlier awareness of loan repayment.

*Hypothesis 2:* Individuals with higher levels of motivation and involvement in the application process will have smoother repayment of student loans.

## **Results**

### ***Application status***

As shown in Table 1, the first question asked who recommended that the student apply

for the loan and who prepared the application. Based on that, the distributions of the delinquent and non-delinquent responses are reflected in the table.

Compared with non-delinquent individuals, as stated above, there were fewer delinquent individuals who decided to apply for the loan themselves (23.8%) and a higher proportion that applied on the recommendation of school teachers or school staff (16.2%). Looking at the document preparation, among delinquent applicants, 39.2% responded that they prepared the documents themselves and 33.3% responded that their parents (or grandparents, family members, relatives) helped. In contrast, among the non-delinquent applicants, almost 60% prepared the documents themselves, with less than 20% indicating they had help from family. Thus, as our hypotheses indicate, loan perceptions, repayments, and their effectiveness may vary, depending on the extent of an individual's involvement in the loan application.

As such, we classified the students according to whether they made the decision to pursue the student loan and prepare the documents themselves. Specifically, the classifications were as follows: Type ①: both the application and document preparation were done by the individual, "Decided and prepared by the individual" (23%); Type ②: the application was done by the individual but the document preparation was done by someone else, "Decided by the individual, prepared by someone else" (6%); Type ③: the application was done by someone else, but the document preparation was done by the individual, "Decided by someone else, prepared by the individual" (28%); and Type ④: neither the application nor the document preparation was done by the individual, "Neither decided nor prepared by the individual" (43%) (see Figure 1). The proportion of cases

where the individual was involved in the application decision and document preparation for the loan application was only 20% of all the respondents, with cases where the individual was not involved in either exceeding 40%.

Table 1 Loan recommendation and application preparation

People who recommended the application	Decided by themselves	Parents (or grandparents and other relatives)	High school teachers or staff	Friends	Unknow	(Total)
Delinquent	23.8	52.5	16.2	1.3	6.3	(100)
Non-delinquent	32.8	60.1	5.2	0.6	1.3	(100)
Document preparer	Decided by themselves	Parents (or grandparents and other relatives)	Self and parents	Other	Unknow	(Total)
Delinquent	39.2	33.3	19.7	0.6	7.2	(100)
Non-delinquent	59.1	18.5	20.5	0.1	1.8	(100)

Looking at the distribution of basic attributes in these four categories (Figure 2), for delinquent individuals, the number of students categorized as Type ① “Decided and prepared by the individual” was low, and the number of students categorized as Type ④ “Neither decided nor prepared by the individual” high. There were fewer females and younger students in the Type ① category, “Decided and prepared by the individual” and a higher number in the Type ④ category, “Neither decided nor prepared by the

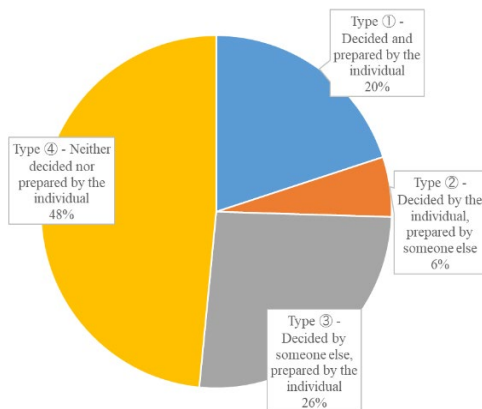


Figure 1 Classification based on who recommended the application and who prepared the documents at the time of application

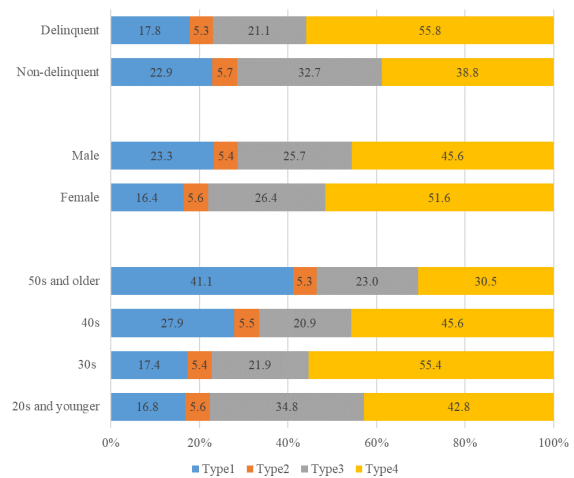


Figure 2 Attributes by 4 types

individual.”

**Loan delinquency**

In looking closely at loan delinquency, first, we examined the current employment situations of the loan recipients. Figure 3 shows the distribution of the four categories of recipients based on their employment status. Among the respondents, 34.5% of those self-employed and 25% of full-time employees were in the Type ① category “Decided and prepared by the individual.” Those categories were relatively higher compared with part-time/contract employees or those unemployed. Thus, for contract employees, unemployed individuals, and full-time homemakers, the numbers in the Type ① “Decided and prepared by the individual” were low, with Type ④ “Neither decided nor prepared by the individual” accounting for around 50%. This suggests that individuals involved in the application process were likely to be employed full-time or self-employed.

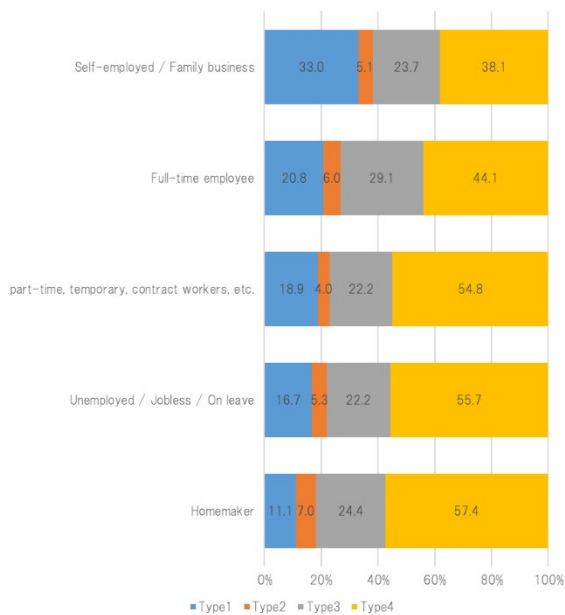


Figure 3 Current employment status

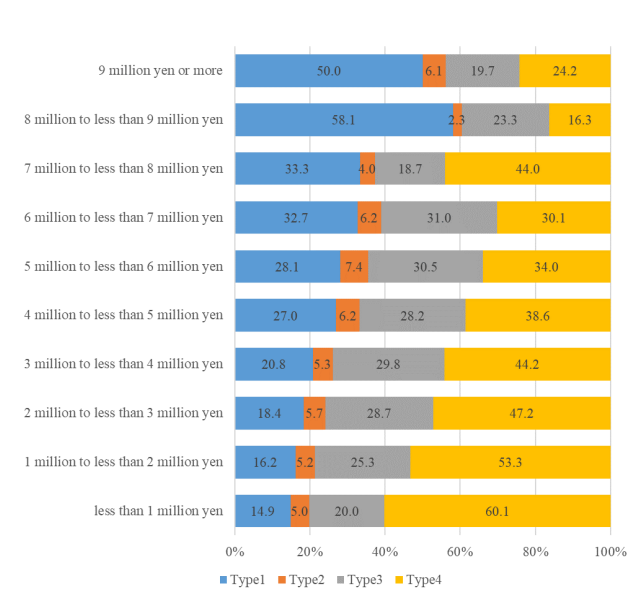


Figure 4 Current income



Conversely, those less involved in the application were likely to be unemployed or working part time.

Second, we looked at the income of the loan recipients, as shown in Figure 4. A higher proportion of individuals with lower incomes fell in the Type ④ category, “Neither decided nor prepared by the individual” and a lower proportion in the Type ① “Decided and prepared by the individual.” As shown in the figure, as income increased, the number of applicants in Type ④ “Neither decided nor prepared by the individual” decreased, while the numbers in Type ① “Decided and prepared by the individual” increased.

Finally, we analyzed the impact of these factors on delinquency considering the degree of involvement in the application process. The dependent variable was a dummy variable for delinquency. The independent variables were gender, age, type 2 loan usage, current employment status (full-time employment, homemaker, unemployed), current income, current cohabitation status, and application type. Regarding the four categories based on the level of involvement in the application process, we labeled Type ① “Decided and prepared by the individual” as “Both by the individual,” Type ② “Decided by the individual, prepared by someone else” and Type ③ “Decided by someone else, prepared by the individual” as “One by the individual,” and Type ④ “Neither decided nor prepared by the individual” as “Both not by the individual.” Dummy variables for “Both by the individual” and “One by the individual” were created with “Both not by the individual” as the reference group for our analysis model.

Table 2 Determining Factors for Delinquency

Sex (ref:female)	male	0.602 ***
Age group	age	1.784 ***
Type of student loan (ref:type1)	type2 student loan	0.603 ***
Employment (ref:non-regular)	regular employment	-1.016 ***
	self-employed / family business	-0.140
	homemaker	-0.891 ***
	unemployed / on leave	0.103
Current income	current income	-0.211 ***
Person who recommended application & document creator (ref:both not by individual)	both by individual	-0.990 ***
	one by individual	-0.601 ***
Current Living Situation (ref:living alone)	living with parents	0.163
	living with spouse or children	-0.205 *
	cons.	-1.637 ***
	Cox-Snell R2	0.323 ***
	Nagelkerke R2	0.433

Table 2 presents the results of the logistic regression analysis. The analysis showed that males, older individuals, second scholarship recipients, part-time employees, and individuals with lower incomes were more likely to be delinquent. Additionally, those who were recommended by others to apply for the loan and were less involved in document preparation were more likely to be delinquent. Moreover, individuals living alone were more likely to be delinquent than those who were married or living with their family. Notably, individuals who were more involved in the loan application process tended to have a smoother repayment and were less likely to experience delinquency, thereby supporting Hypothesis 2.

### *Awareness of repayment of loans*

In the survey, respondents were asked when they became aware of their obligation to repay their student loans. When looking at the distribution by the four categories (Figure 5), we can see that the proportion of those who were aware before the application process in the Type ① “Decision and creation by the person,” Type ② “Decision by the person and creation by someone else,” and Type ③ “Decision by someone else and creation by the person” categories was about 80%, while the proportion of those in the Type ④ “Decision and creation by someone else” category was only about 50%. Of those categorized as Type ④ “Decision and creation by someone else,” over 40% reported becoming aware either during the application process, during loan disbursement, or even after repayment had begun. Thus, those who were not involved in the student loan generally became aware of their repayment obligation at a later stage.

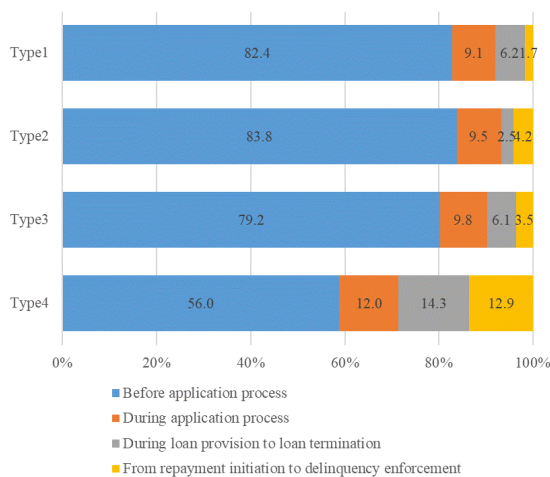


Figure 5 Timing of becoming aware of the obligation to repay

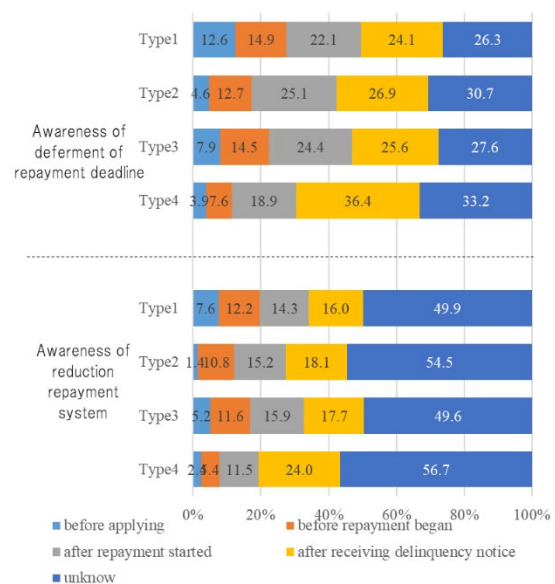


Figure 6 Awareness of repayment relief programs

However, when students face repayment difficulties, there are systems available that support deferment and reductions in repayment. Difficulties in repayment can be alleviated by effectively using these relief systems. Yet, students need to first be aware of the existence of these relief systems for these to be effective. In the survey, respondents were asked about their awareness of both relief systems. Looking at the distribution of this awareness (Figure 6), we can see that a high proportion of respondents were unaware of both relief systems. Particularly, in category Type ④ “Decision and creation by someone else” at the time of applying for the student loan, the proportion of those reporting that they were aware of these relief systems before applying for the loan or before repayment began was relatively low.

Table 3 Factors determining the awareness period of repayment obligation

Sex (ref:female)	male	-0.109
Age group	age	-0.213 ***
Type of student loan (ref:type1)	type2 student loan	0.087
Employment (ref:non-regular)	regular employment	0.313 **
	self-employed / family business	-0.033
	homemaker	-0.146
	unemployed / on leave	-0.020
Current income	current income	0.029
Person who recommended application & document creator (ref:both not by individual)	both by individual	1.254 ***
	one by individual	0.942 ***
Repayment (ref: non-delinquent)	delinquent	-1.585 ***
	cons.	1.615 ***
Cox-Snell R2		0.188 ***
Nagelkerke R2		0.269

Next, we analyzed the determinants of awareness regarding student loan repayments. A dummy variable indicating whether the repayment obligation was known before the application process was the dependent variable. In addition to the independent

variables listed in Table 2, we included a dummy variable for delinquency as an independent variable. When examining the results of the logistic regression analysis (Table 3), younger individuals and regular employees were generally aware of their repayment obligations before applying for student loans. Furthermore, individuals who were involved in deciding to apply for the student loan, its document preparation, or both were all likely to understand their repayment obligations earlier. Those who were delinquent tended to recognize their repayment obligations later. In other words, it was confirmed that individuals with higher motivation and involvement in the application process at the time of the application generally recognized the timing of their student loan repayment sooner, supporting Hypothesis 1.

### *Evaluation of student loans*

Figure 7 shows that the individuals who were involved in deciding to apply for the student loan and completing the application generally gave a high evaluation of the loan's value. Specifically, they valued being able to allocate a larger amount of money to tuition fees

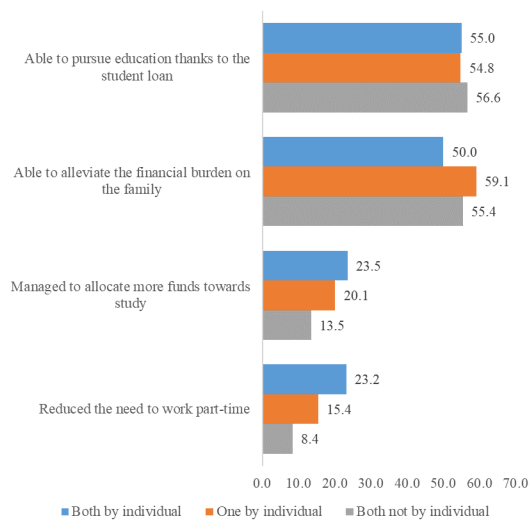


Figure 7 Evaluation of the effectiveness of student loan

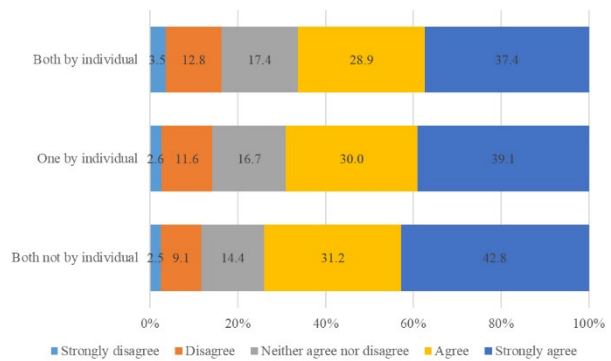


Figure 8 Evaluation of the burden of repayment

and being able to reduce their hours of part-time work. Notably, individuals who were not involved in deciding to apply for the loan or in the application process, gave a high evaluation of the loan's value based on their being able to pursue their further education through such student loans and their ability to lessen the financial burden on their family. When asked about the burden of repayment (Figure 8), over 70% of the individuals who were not involved in either the decision to apply for the loan or the application process responded that the repayment was burdensome. In other words, based on simple aggregation, individuals who were less involved in deciding to apply for the student loan or in the application process generally perceived viewed the value of the loan in terms of their ability to pursue further education while feeling burdened by the repayment of the loan.

Table 4 Factors determining evaluation of the effects of student loans

		Able to pursue education thanks to the student loan	Managed to allocate more funds towards study	Able to alleviate the financial burden on the family	Reduced the need to work part-time
Sex (ref:female)	male	-0.163 **	0.240 **	-0.093	0.192 *
Age group	age	-0.083 +	0.118 *	0.029	0.211 **
Type of student loan (ref:type1)	type2 student loan	0.183 **	-0.119	-0.122 *	-0.295 **
Employment (ref:non-regular)	regular employment	0.033	-0.131	0.046	0.001
	self-employed / family business	-0.294 +	-0.006	0.127	0.207
	homemaker	0.118	0.000	-0.217	0.267
	unemployed / on leave	-0.046	-0.044	0.019	-0.057
Current income	current income	-0.015	0.036 +	0.009	0.061 **
Person who recommended application & document creator (ref:both not by individual)	both by individual	0.064	0.510 ***	-0.368 ***	0.953 ***
	one by individual	0.002	0.381 ***	0.013	0.573 ***
Repayment (ref: non-delinquent)	delinquent	0.456 ***	-0.584 ***	-0.839 ***	-0.741 ***
	cons.	0.163	-1.840 ***	0.781 ***	-2.567 ***
	Cox-Snell R2	0.016 ***	0.025 ***	0.045 ***	0.048 ***
	Nagelkerke R2	0.021	0.041	0.060	0.087

After analyzing the factors that statistically influenced the evaluation of student loans during enrollment (Table 4), we found that by controlling each attribute, delinquent borrowers tended to positively evaluate the ability to pursue further education by virtue of the student loan. However, in the models where we included other evaluation items as dependent variables, the other evaluation results turned negative for delinquent borrowers. This suggests that while student loans enabled delinquent borrowers to pursue further education, they did not perceive the loan value in terms of enriching their education or decreasing part-time work hours.

Table 5 Factors determining perceptions of repayment burden

		$\beta$
Sex (ref:female)	male	0.036 **
Age group	age	-0.006
Type of student loan (ref:type1)	type2 student loan	0.094 ***
Employment (ref:non-regular)	regular employment	-0.067 ***
	self-employed / family business	-0.010
	homemaker	-0.001
	unemployed / on leave	0.011
Current income	current income	-0.102 ***
Person who recommended application & document creator (ref:both not by individual)	both by individual	0.004
	one by individual	0.035 **
Repayment (ref: non-delinquent)	delinquent	0.437 ***
Adjusted R-squared		0.250
F-value		153.302 ***

Furthermore, in the regression analysis of the evaluation of the repayment burden as the dependent variable (where respondents were asked to rate the burden from 1, strongly disagree to 5, strongly agree) (Table 5), delinquent borrowers generally evaluated

the repayment burden as higher. Factors, such as being male, using secondary scholarships, having only part-time employment and less income, and being involved in either the decision to apply for the loan or the application process were associated with a higher likelihood of evaluating repayment as burdensome. Thus, this suggests that delinquent borrowers and individuals with lower income will generally perceive the repayment burden of student loans as heavier.

### **Discussion and Conclusion**

In this study, we examined the reality of student loan repayment based on a survey that captured information about the application decision and the application process for student loans. We analyzed the characteristics of both delinquent and non-delinquent borrowers, explored the factors influencing their perceptions of loan repayment, and assessed the impact of student loans. Our key findings are as follows.

First, individuals who recognized the obligation to repay the student loan at the time of their application and those who were involved in the decision to apply and the application process generally were able to avoid delinquency. Graduates who secured regular employment after their university education were also more likely to avoid delinquency. Conversely, delinquent borrowers were generally those engaged in part-time employment or those with lower incomes. Those who were less involved in the decision to use the scholarship and application process were also more likely to become delinquent and generally did not recognize their obligation to repay the loan until later.

Our results support both of our hypotheses. The factors of employment status



and stable income were reaffirmed as influencing loan repayment. Additionally, we also found that personal awareness and involvement in the application process for student loans played a crucial role, affecting not only the understanding of the loan repayment but also future repayment behavior.

Regarding the evaluation of student loans, while delinquent borrowers valued the opportunity to pursue their further education through the student loans, they did not perceive the loan as valuable in other aspects. Specifically, they did not see its value in terms of giving them more time to study and thereby improving their education.

Our findings have several implications for future studies. From a policy perspective, the importance of student-loan policies that ensure educational opportunities, as evidenced by the positive evaluation of loans for university enrollment, was confirmed. However, it is clear that detailed awareness of the loans and the associated repayment commitment among delinquent borrowers is not nearly sufficient. Thus, efforts to disseminate accurate information more broadly among potential applicants are necessary to promote effective utilization of student loan policies.

From the perspective of loan recipients, it is crucial to increase early awareness and understanding of student loan elements. Comprehensive consideration and understanding of aspects such as the obligation and timing of loan repayment, future repayment methods, the impact of the loan on academic studies, and employment are required. However, given the limitations of individual efforts, direct and indirect support from universities and society is indispensable. Financial education and appropriate support measures should be implemented for students facing repayment difficulties. In

providing student support, it is essential to consider lifelong support for students rather than limiting support to the four years of university education.

### **Acknowledgments**

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