Measurement of Factors for Credit Recovery Failures

By

CHOI, Yeonsoo

THESIS

Submitted to

KDI School of Public Policy and Management

In Partial Fulfillment of the Requirements

For the Degree of

MASTER OF DEVELOPMENT POLICY

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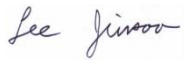**MASTER OF DEVELOPMENT POLICY**
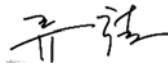
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Committee in charge:

Professor Lee, Jinsoo, Supervisor

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Abstract

The debt adjustment system is a policy tool that has been realized in many countries. The credit recovery system not only helps debtors recover their credit but also relieves job insecurity caused by foreclosures and collections. However, not everyone benefits from the credit recovery system. Some debt-adjustment applicants experience a mid-term failure. To date, there were many studies that relied on surveys of people who applied for credit recovery, such as individual rehabilitation and bankruptcy. However, debtors who have experienced failure are reluctant to take the survey, making it difficult to do accurate analysis. This study analyzes the causes of credit recovery failures and suggests complementary points that can help regain credit. In particular, people with unstable incomes, such as temporary or unemployed workers, are less likely to succeed in recovering their credit. In addition, many of the dropouts were made early in the repayment period. On this basis, this study suggests that job consulting and credit consulting are helpful. These results can also be used to present complementary policies.

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I. Introduction

The number of credit recovery applicants exceeds 100,000 a year (Seungjin, C.& Minu K. 2019). Most debtors who fail to repay their debts face advantages, such as foreclosure of banks accounts and repayment pressure. After the credit recovery application, these procedures are suspended and they can benefit from debt reduction and extended repayment periods. However, not everyone succeeds in making an economic comeback through the credit recovery system. Despite debt cuts and extended repayment periods, some people are dropping out of the way to recover credit. The biggest reason they fail is lack of income. Professional stability and income have a large impact on the success of credit recovery, but some debtors are still suffering from income instability.

Credit management information as well as income is important for successful credit recovery. Most debtors have failed credit management in the past and do not have information on how to overcome it. Therefore, it is important to provide employment consulting and credit consulting to help debtors get a fresh start. There are various studies of income and credit consulting. Bankruptcy alone cannot provide meaningful rehabilitation for those who continue to suffer financial difficulties, particularly unemployment debtors. It points to the need for a more comprehensive system of information, advice and support, not only for people at immediate risk of bankruptcy, but also for those in the early stages of financial distress and those who are attempting to rebuild their lives after bankruptcy (Paul. A., et al, 2017).

Most studies on the importance of income and credit consulting often relied on debtor surveys. However, debtors who have fallen into insolvency tend to be reluctant

to be contacted for surveys and unwilling to recall past experiences. These surveys have limitations in identifying the characteristics of debtors. This study supplemented this by utilizing data from actual applicants who applied for debt restructuring through the Credit Counseling and Recovery Service (CCRS). It also analyzed the impact of income on the implementation of credit recovery and when applicants fail during the total repayment period to suggest when credit and employment consulting should take place.

II. Literature review

The debt restructuring system is a policy tool that has been realized in many countries. Middle-class Americans, for example, benefit more from bankruptcy protection than unemployment insurance (Lefgren et al., 2010). In Korea, about 200,000 debtors each year have benefited from the debt reduction through the Credit Counseling and Recovery Service (Seungjin, C.& Minu K. 2019). Various changes are expected after credit recovery. There is a study of how income, mortality and foreclosure rates change after bankruptcy. After bankruptcy, annual income increases by $5,562 dollars, mortality decreases by 1.2 percent and foreclosure rates by 19.1 percent in the United States (Dobbie, W., & Song, J. (2015). The bankruptcy protection system bans foreclosure and collection of bonds, helping debtors engage in normal income activities.

It is important to see who applies for credit recovery. For example, race, average age, credit card holders, credit scores, and income are important factors that identify the characteristics of credit recovery applicants. Cohen (2013) shows that the average number of credit cards owned by bankrupt individuals is 2.83. This figure is different from the 1.77 credit card average for those who did not file for bankruptcy. The large number of credit cards suggests that credit card transfers are used to solve the credit limit problem. In addition, the average age of applicants for the bankruptcy system in the U.S. is 36.7 years old and the unemployment rate is 5.2 percent. This study, however, appears to lack data on age-based unemployment indicators. If employment rates for people aged 50s and 60s have risen and employment rates for people aged 30s and 40s have decreased, it is difficult to conclude that unemployment

rate has increased much.

It is also important who benefits from credit recovery. It seems that debtors with high credit records received fewer benefits after the bankruptcy system than debtors with low credit records (Cohen, C, Duygan, B, & Montoriol, G. 2013). This shows that a debtor, who had a high credit record in the past, is hesitant to make a credit deal again after the bankruptcy system. Generally, many credit transactions are required to raise credit ratings. One of the main reasons why high-credit debtors are hesitant about credit transactions again is that they cannot reapply for eight years after using the bankruptcy system. However, there will also be psychological factors and other factors such as unemployment, income reduction and death.

The credit recovery system does not necessarily lead to success for debtors. The U.S. personal rehabilitation system has a 67 percent failure rate (Jonathan, P. 2019). Generally, the debt workout system requires long-term repayment. The U.S. personal rehabilitation system gives debtors a repayment period of at least five years, during which unexpected variables may occur. Many people fail to recover their credit in the middle because of a number of factors, such as medical costs, childbirth, funeral expenses, reduced income and job losses. Especially, with large amounts of debt, self-employed and elderly debtors are more likely to fail the debt-workout system in Korea (Yunhye, O. 2014). This study shows that it is important to understand what the ratio of debt to income is. It is necessary to present various solutions linked to education and welfare systems, as in Britain and the United States, where credit counseling services for the socially vulnerable are operated.

If the debtor fails to repay the debt due to unpaid bills, it will also be a big loss for financial institutions, which will not play the role of debt adjustment. Therefore, it

is necessary to help debtors pay well through credit recovery. It is important for the debt adjustment organization to provide credit consulting services such as credit management, use of financial instruments, and welfare links to debtors at the same time as credit recovery. This is because debt-adjustment organizations can better understand the debtor's financial situation than financial institutions (T. Brown et al, 2011). People who elect to apply for bankruptcy without financial counseling are more likely to experience financial hardship in the future (P. Ali et al, 2017). Access to better information, advice and ongoing support would help to promote the rehabilitation of debtors, and may also play a preventative role, by diverting some debtors away from the bankruptcy system.

It is income that has a significant impact on debt-adjustment repayment. Debtors whose problems relate to unemployment are less likely to achieve favorable outcomes, due to the fact that their post-bankruptcy incomes simply are not enough to meet their basic needs. An adequate, reliable income is a vital prerequisite for rehabilitation; and a modest increase in the unemployment benefit could be the most effective means of improving debtors` outcomes after bankruptcy. Bankruptcy offers an `authentic fresh start` only to those who manage to increase their incomes after discharge. (Porter and Thorne, 2006)

III. Objectives and Methodology

A. Objectives

This study measures the failure factors of credit recovery. In particular, it seeks to identify the importance of income by checking the distribution of income. It also looks at when credit recovery failed during the entire repayment period. This seeks when and how policy feasible occupations and credit consulting will be implemented. At the same time, it seeks to supplement credit recovery studies. The characteristics of many studies were often analyzed for changes in debtors' behavior through surveys. For example, changes in behavior before and after credit recovery, economic satisfaction, and the degree of improvement in quality of life. There are also studies on changes made after credit consulting was provided. And there are studies that have conducted satisfaction surveys of groups that have been provided with consulting and those that do not. However, the analysis through surveys has many limitations. For example, debtors who fail once are reluctant to recall their past memories and refuse to interview them, making it difficult to produce objective results. To compensate for these limitations, this study aims to present policy complements by analyzing why and when the credit recovery applicant fails based on actual data.

B. Methodology

As of February 21, 2020, a total of one-hundred-thousand random samples were taken after the total applicants were divided into high-risk and low-risk groups. The sample data were divided into two groups, one for the low-risk group and one for the

high-risk group. Fifty-thousand people are in the financial hardship moratorium and Fifty-thousand people is diligent payers. Among the debt adjusting programs, financial hardship moratorium is a system that provides postponement period for those who are unable to repay their debts in the future due to unemployment or illness, so they were classified as high-risk group. Conversely, diligent payers were classified as the low-risk group because they were deemed to have no difficulty in paying.

We verify the following hypotheses.

Debtor with low income and early in the payment period are likely to be included in the high-risk group.

A total of five analyses were conducted to substantiate the above hypothesis. First, it is an analysis of the difference between the two groups' debt adjustment applications. The t-test was conducted to determine the difference between age, monthly income, pre-adjustment debt, the reduction rate, and repayment period. Overall, we looked at the difference in the status of debt adjustment applications for each group.

Second, we analyzed the difference in average income by gender, age, marital status, job and region by groups. Among the various variables that affect the failure of credit recovery, we characterize income that can be realized by policies such as vocational education, and check how different income is from each group. This analysis provides a detailed view of the income distribution by characteristics of the credit recovery applicant. The analysis results are presented with graphs, enabling visual comparisons.

Third, the income differences between high-risk and low-risk groups will be analyzed in detail and the job distribution of applicants will be compared. The occupational groups were largely classified as permanent position, Temporary position,

self-employed and unemployed. Samples from each group were randomized by 50,000 people, as was the case with previous analyses.

Fourth, we then performed a regression analysis on the probability that each variable would be included in a high-risk group. Regression is a statistical technique used to understand the impact of variables of interest on a given outcome. In this way, researchers can control for the impact of different variables on the key topic of investigation (Greene. S., et al. 2016). This article uses one kind of regression, logistic regression, to predict the outcome in the credit recovery system. The independent variables used in regression are gender, age, the region, income, the pre-adjustment debt amount, reduction rate, period, monthly repayment and marital status. Through logistic regression, we will check whether each variable is a factor that affects the probability of credit recovery failure.

Finally, the sample data of 5,000 people among those who failed to recover credit in 2020 were extracted and the status of each payment was analyzed. The reason for analyzing repayment periods is to identify when they failed and then see at what point it would be effective to realize the policy. To perform these statistical analyses, we used the STATA statistical analysis program.

IV. Variables in Analysis

(1) Income

Income refers to the amount an applicant earns over a month. Applicants can apply for work-out only when they have income above the minimum cost of living, so those without income are also recognized for income provided to their families. In this study, income is calculated as the sum of one's income and the income of the income provider.

(2) Pre-adjustment debt

It refers to the total amount of debt before receiving a debt reduction from the CCRS. It is the sum of debts, including the principal, interest, overdue interest, expenses. Debt amounts include loans, credit cards, installment financing and compensation bond.

(3) Reduction rate

After applying work-out, interest and overdue interest will be fully reduced in consideration of the type of bond, the total amount of debt owed by the debtor, the possibility of reimbursement, credit. Principal shall be reduced by 20 to 70% for bad debts only, and 70 to 90% for socially disadvantaged class. Litigation costs or enforcement costs already incurred prior to the application for work-out shall not be reduced.

(4) Repayment period

The repayment period can be extended up to eight years for individual work-out and up to ten years for pre work-out.

(5) Monthly repayment amount

It is determined in consideration of the applicant's income, living expenses and post-adjustment debt. It takes into account disposable income and post-adjustment debt.

(6) High-risk group

It refers to those who are currently suspended from repaying their debts during credit recovery. Financial hardship is a system that provides postponement period for those who are unable to repay their debts in the future due to unemployment or illness, so they were classified as high-risk group.

(7) Low-risk group

It refers to those who are paying faithfully without unpaid payments during credit recovery. If the applicant is not currently outstanding and is not in the moratorium, it is deemed to have no difficulty in paying.

V. Statistical analysis and results

A. Differences in Debt Adjustment Status by Group

After classifying all applicants for credit recovery as high-risk and low-risk, 50,000 samples were collected, respectively. The reason why we did not use actual failure data is that there are various reasons such as requesting cancellation, death, personal rehabilitation, filing for bankruptcy, and individual repayment of creditors. Therefore, applicants who have not yet been failed, but are struggling to reimburse are classified as the high-risk group and those who are well-repaying as the low-risk group. To judging that they are having difficulty paying reimbursement is that they are on a moratorium. The financial hardship moratorium can be applied if it is difficult to repay due to falling income, unemployment, or illness. We analyzed the difference between age, income, pre-adjustment debt, the reduction rate, repayment period, and monthly repayment by these classified groups.

Table 1-1. Differences in Debt Adjustment Status by Groups

	High risk (n=50,000)		Low risk (n=50,000)		
	Mean	Standard Deviation	Mean	Standard Deviation	t
Age	48.67	10.85	48.45	11.47	6.962***
Income(monthly)	1,298,620	810,209.3	1,415,074	766,276.2	-52.027***
Pre adjustment debt	46,500,000	49,800,000	46,400,000	47,900,000	0.362
Pre adjustment debt(ln)	17.35	0.76	17.31	0.84	22.980***

*p<.05,**p<.01,***p<.001

Table 1-2. Differences in Debt Adjustment Status by Groups

	High risk (n=50,000)		Low risk (n=50,000)		
	Mean	Standard Deviation	Mean	Standard Deviation	t
Reduction rate	.249	.293	.410	.345	-1.8e+02***
Repayment period	93.0	23.9	91.9	22.9	16.983***
Repayment amount(monthly)	341,776.2	307,688.1	265,702.5	279,382.3	90.859***
Repayment amount(monthly)(ln)	12.4	0.8	12.1	0.8	148.17***

*p<.05,**p<.01,***p<.001

Independent sample t-test was conducted to check the difference in debt adjustment status between high-risk and low-risk groups. For the high-risk group, the average age is 48.67 years (SD=10.85), the average income is KRW 1,298.620 won (SD=810,209.3), the average debt before adjustment is KRW 46,527,266 won (SD=49,875,049), the average reduction rate is 24.9% (DS=0.293), the average repayment period is 93.08 months (SD=23.94) and the average monthly repayment is KRW 341,776 won (SD=307,688).

For the low-risk group, the average age is 48.45 years (SD=11.47), the average income is KRW 1,415.074 won (SD=766,276.2), the average debt before adjustment is KRW 46,416,223 won (SD=4.79e+07) and the average reduction rate is 41.0% (SD=0.345), the average repayment period is 91.95 months (SD=22), and the average monthly repayment is KRW 265,702.5 won (SD=279,382.3). These make a distinct difference. The average pre-adjustment debt in the study is at least 99,180 won to 71 billion won, and the actual pre-adjustment average debt is 46.46 million won

(SD=48,668,686) with a very large standard deviation.

An independent sample t-test was conducted to determine if these differences were significant, and at age t=6.962 (p<.001), income t=-52.027 (p<.001), pre-adjustment debt t=22.980 (p<.001), reduction rate t=1.8e+02 (p<.001), repayment period t=16.983 (p<.001), the monthly repayment amount t=90.859 (p<.001) was found to be different from each group. That is, the high-risk group is statistically significantly larger in age, the pre-adjusted debt, repayment period and monthly repayment than low-risk group. In addition, income and reduction rates were analyzed to be statistically significantly smaller.

B. Income by Individual Characteristics of Each Group

We analyzed the probability of credit recovery failure for each variable. Demographic variables such as gender, the region, and marital status are limited in policy control. In addition, it is difficult to expand the amount of debt, the reduction rate, and repayment period to applicants with sufficient repayment ability, not to the socially vulnerable class. In order to increase the probability of success for applicants who have already benefited from debt reduction or extended repayment period, a policy that increases their ability to repay by increasing income is needed. The following analysis shows the differences between high-risk and low-risk groups by checking the income status of each individual's characteristics:

Table 2-1. Income by individual characteristics of each group

|		High risk (n=50,000)		Low risk (n=50,000)	
		Mean	Standard Deviation	Mean	Standard Deviation
Marry	Single	1,226.3	614.6	1,339.0	586.7
	Married	1,364.3	960.2	1,536.7	948.9
	Separation	1,226.4	627.8	1,316.9	580.9
	Bereavement	1,060.9	630.9	1,091.8	592.9
	Divorce	1,275.8	648.1	1,358.5	607.8
Area	Seoul	1,264.2	754.2	1,372.7	700.6
	Gyeonggi	1,336.1	842.5	1,468.1	800.5
	Gangwon	1,259.2	788.2	1,359.1	728.8
	Chungcheongnam-do	1,310.0	844.5	1,440.7	795.5
	Chungcheongbuk-do	1,321.9	814.5	1,499.0	785.9
	Gyeongsangnam-do	1,277.9	809.5	1,395.5	766.8
	Gyeongsangbuk-do	1,302.0	836.7	1,353.8	770.7
	Jeollanam-do	1,278.3	771.4	1,393.1	752.1
	Jeollabuk-do	1,254.4	717.5	1,372.1	688.8
	Jeju-do	1,310.0	763.0	1,415.2	691.6
Job	Permanent position	1,906.8	901.3	1,894.8	845.0
	Self-employed	1,568.2	764.1	1,687.9	767.5
	Temporary position	1,131.0	431.7	1,224.1	423.3
	Unemployed	308.0	541.7	467.6	590.0
Vehicle	Y	1,587.7	923.0	1,757.0	889.7
	N	1,196.9	740.2	1,306.4	687.9
Real estate	Y	1,688.1	1,034.4	1,898.0	1,037.6
	N	1,257.7	770.6	1,370.0	719.6

Note. Income unit is KRW 1,000 won.

Table 2-2. Income by individual characteristics of each group

|		High risk (n=50,000)		Low risk (n=50,000)	
		Mean	Standard Deviation	Mean	Standard Deviation
Gender	Male	1,512.9	860.1	1,617.5	817.4
	Female	1,048.2	665.2	1,165.6	612.1
Age	18~23	1,007.1	507.6	956.6	536.5
	24~39	1,213.6	741.1	1,372.9	707.3
	40~55	1,409.9	863.8	1,539.4	818.5
	56~74	1,164.7	713.1	1,254.3	661.4
	75~	702.4	613.5	699.5	532.0

Note. Income unit is KRW 1,000 won.

Figure 1. Distribution of income by region
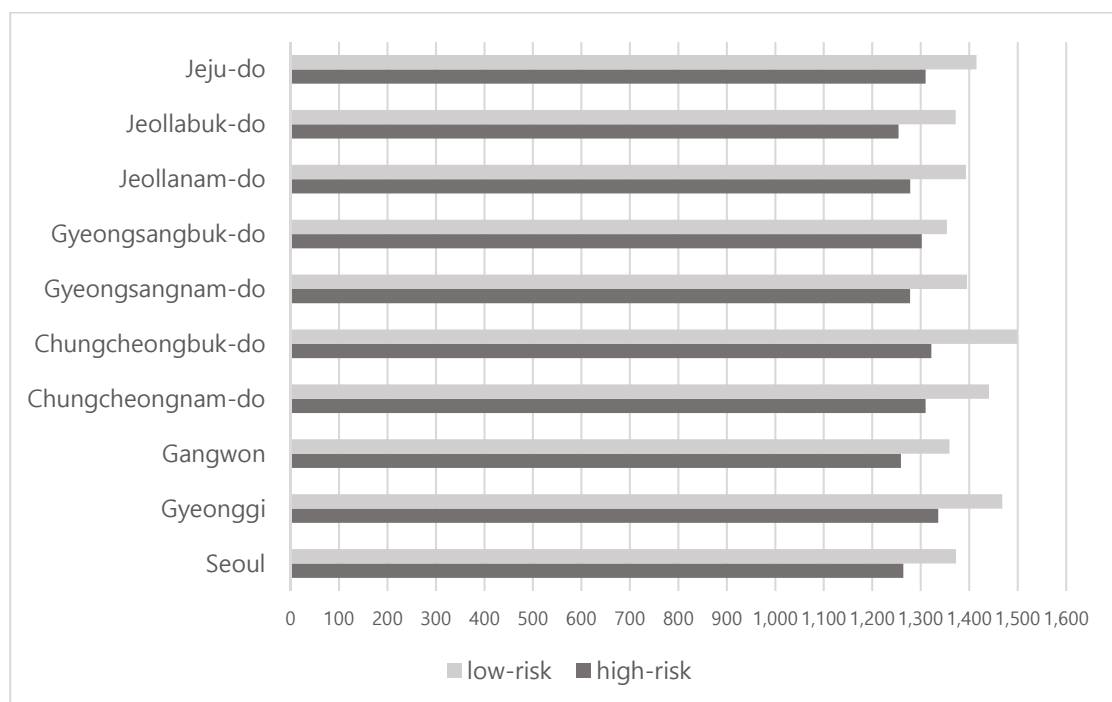
Note. Random sampling of 50,000 actual credit recovery applicants as of February 2020

Figure 2. Distribution of income by gender and age
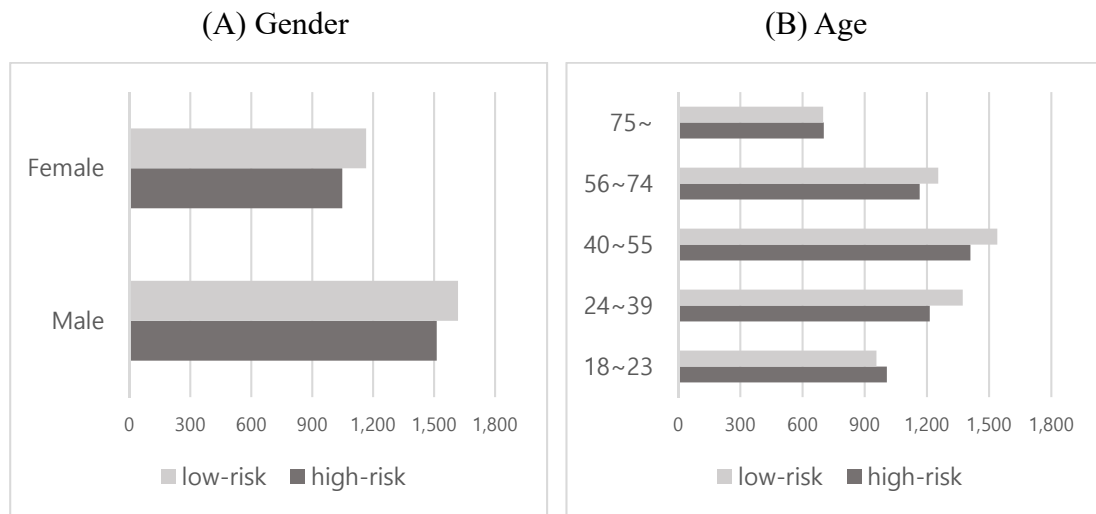
(A) Gender   (B) Age

Note. Random sampling of 50,000 actual credit recovery applicants as of February 2020

Figure 3. Distribution of income by marital status and occupation

(A) Marriage   (B) Occupation
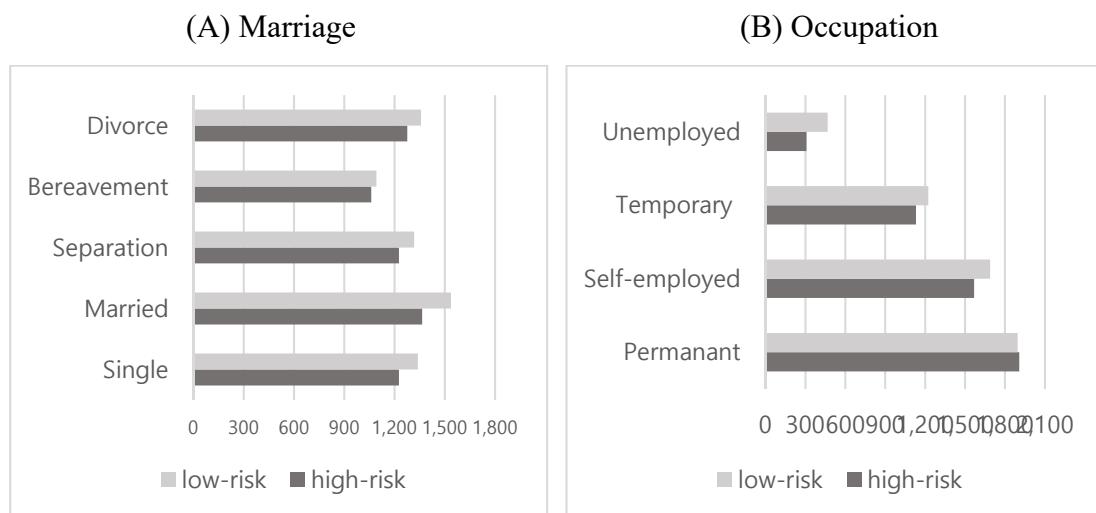
Note. Random sampling of 50,000 actual credit recovery applicants as of February 2020

Income differences between gender, age, marital status, the region, occupation, the vehicle, and real estate holdings in the high-risk and low-risk group were analyzed. Overall, the high-risk group has less average income than low-risk group. Among the high-risk group, male monthly income is higher than female, and 18-23 years old and

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75 years old or older seem to have lower average income than other ages. Income is also low in the 24-39 age group.

In terms of marital status, unmarried and divorced people were found to have lower income than married, and by region, income was lower in the order of Seoul, Jeollabuk-do, and Gangwon. By occupation, unemployment is the lowest, and the average monthly income of unemployed people is 308,000 won because of the help of income providers. Temporary workers seem to have significantly lower monthly average income than regular workers. In the case of owning real estate and vehicles, the average monthly income seems to be significantly higher than otherwise.

C. Occupational Distribution by Groups

Applicants in the high-risk group earns less than those in low-risk group. Since stable jobs affect income, it is also important to understand the job distribution of applicants for credit recovery. The occupational groups were largely classified as permanent position, temporary position, unemployed, and self-employed. Since then, sample data from fifty-thousand high-risk and fifty-thousand low-risk individuals have been extracted to analyze which occupational groups each applicant is included in.

Table 3. Occupational distribution by groups

	High risk (n=50,000)		Low risk (n=50,000)		x^2
	Frequency	Ratio	Frequency	ratio	
Permanent position	13,343	26.7	16,192	32.4	
Self-employed	6,607	12.2	4,618	9.2	
Temporary position	24,141	48.3	24,625	49.3	4.1e+03***
Unemployed	5,909	11.8	4,565	9.1	
Total	50,000	100.0	50,000	100.0	

Note. Unit : the number of people, percent

*p<.05,**p<.01,***p<.001

Cross-analysis was carried out to determine the difference in occupation depending on the groups. In the high-risk group, the number of full-time workers is 13,343 (26.7 percent), the number of self-employed people is 6,607 (12.2 percent), 24,141 (48.3 percent), and 5,909 (11.8 percent) are unemployed. In the low-risk group, the number of full-time workers is 16,192 (32.4%), the number of self-employed people is 4,618 (9.1%), the number of temporary workers is 24,625 (49.3%), and the number of unemployed is 4,565 (9.1%). To determine if these differences are significant, a chi-square test showed that differences in occupations across groups were significant. The proportion of temporary and unemployed workers in high-risk and low-risk groups stood at 60.1% and 58.4%, respectively, indicating that most of the applicants for credit recovery are unstable income earners.

D. Factors on high risk of debt adjustment

Low-risk group has fewer income and reduction rates than high-risk group, and their age, pre-adjustment debt, repayment period, and the monthly repayment amount are higher. Income plays an important role because credit recovery is repaid with disposable income by deducting the cost of living from income. The less income, the more difficult it is to repay. The reduction rate also plays an important role, and the more debt is reduced, the less the total amount to be repaid. However, it would be unfair to increase the reduction rate to the general public, not to the socially vulnerable, such as the basic beneficiaries, the disabled, and those aged 70 or older.

The data below show the probability of credit recovery failure of the variables affecting credit recovery. The probability of credit recovery failure means the probability of being included in the high-risk group. Independent variables are gender, age, the region, income, pre-adjustment debt, the reduction rate, repayment period, the monthly repayment amount, marital status, dependent variable is the high risk group with the probability of failure, the low risk group with the probability of success.

Table 4. Logistic regression (factors on high risk of debt adjustment)

	Coef.	S.E.	Odds Ratio	dy/dx
Gender(ref.=male)	.009	.006	1.009	.002
Age	.008	.000***	1.008	.002***
Marry-married(ref.=single)	.174	.008***	1.191	.037***
Marry-separation(ref.= single)	.058	.014***	1.059	.012***
Marry-bereavement(ref.= single)	-.078	.021***	.924	-.016***
Marry-divorce(ref.= single)	.099	.009***	1.105	.021***
Area-Gyeonggi(ref.=Seoul)	-.237	.008***	.788	-.051***
Area-Gangwon(ref.=Seoul)	-.236	.017***	.789	-.051***
Area-Chungcheongnam-do(ref.=Seoul)	-.391	.014***	.675	-.084***
Area-Chungcheongbuk-do(ref.=Seoul)	`.398	.018***	.671	-.085***
Area-Gyeongsangnam-do(ref.=Seoul)	-.219	.010***	.803	-.047***
Area-Gyeongsangbuk-do(ref.=Seoul)	-.146	.012***	.863	-.032***
Area-Jeollanam-do(ref.=Seoul)	-.406	.014***	.665	-.087***
Area-Jeollabuk-do(ref.=Seoul)	-.378	.018***	.684	-.081***
Area-Jeju-do(ref.=Seoul)	-.426	.028***	.652	-.091***
Job-Self-employed(ref.=Permanent)	.548	.010***	1.730	.115***
Job-Temporary(ref.=Permanent)	.558	.007***	1.747	.117***
Job-Unemployed(ref.=Permanent)	.483	.016***	1.620	.101***
Income(monthly)(ln)	-.055	.001***	.945	-.012***
Pre adjustment debt(ln)	-.555	.010***	.574	-.118***
Repayment amount(monthly)(ln)	1.164	.011***	3.203	.249***
Repayment period	.006	.000***	1.006	.001***
Reduction rate-[31~60%](ref.~30%)	.007	.010	1.007	.002
Reduction rate-[61~99%](ref.~30%)	.099	.017***	1.104	.021***
x^2	61,859.02***			
N	100,000			

Note1. dy/dx = Marginal effect

*p<.05,**p<.01,***p<.001

Logistic regression was performed to analyze the determinants of credit recovery failures. It has been found to be statistically significantly appropriate for this study model. (x^2=65,028.36, p<.005). Analysis shows age (Coef.=.008, p<.005), Marital status, the region, occupation, income (Coef.=-.055, p<.005), pre-adjustment debt (Coef.=-.555, p<.005), the monthly repayment amount (Coef.=1.164, p<.005), repayment period(Coef.=.006, p<.005), and reduction rate was found to be significant determinants of failure to recover credit. .

In other words, the higher the age, the monthly repayment amount, repayment period, and reduction rate, the higher the probability of credit recovery failure. The odds ratio for age was 1.008, indicating a 0.2% increase in the probability of credit recovery failure when the age increases by one year. The odds ratio for monthly repayment is 3.203 and the odds ratio for the repayment period is 1.006. As the monthly repayment amount and repayment period increase, the probability of credit recovery failure increases. In the 61% to 99% section, the probability of failure increases by 2.1% compared to the 30% section or less.

The higher the monthly income and pre-adjustment debt, the lower the probability of credit recovery failure. The odds ratio of monthly income is 0.945. The odds ratio of the pre-adjustment debt is 0.574.

On the other hand, it was found that the gender and reduction rate between 31% and 60% were not significant determinants of failure to recover credit. Marriages and regions are also significant determinants of the failure to recover credit. Compared to married people, single people, separation, and divorce are more likely to fail. Those whose spouses have died have a 1.6 percent lower probability of failing to recover their credit than married people. By region, the failure rate in other regions is lower than in

Seoul.

E. Failure Distribution in 2020

In 2020, five-thousand samples of the total number of failures per year were collected and analyzed when they failed during the repayment period. The Credit Counseling and Recovery Service`s individual workout can be up to 96 months long and the pre-workout can be up to 120 months long. In this study, the repayment period was classified into two categories, less than 12 months and more than 13 months, and 5,000 sample data were presented in frequency and ratio, respectively.

Table 5. Failure Distribution in 2020

Period of repayment	Dropout (n=5,000)	
	Frequency	ratio
0	548	10.96
1~2	749	14.98
3~6	746	14.92
7~12	652	13.03
13~24	744	14.88
25~36	448	8.96
37~48	348	6.97
49~60	261	5.23
Above 61	504	10.09

Note. Unit : the number of people, percent

According to a sample of five-thousand people who failed to recover their credit in 2020, 53.9% failed in less than 12 payments and 46.1% in excess of 13 payments. More than a majority are expected to fail within one year of payment.

VI. Conclusion

The study was conducted after sampling those who are in moratorium and diligent repayment among applicants for debt adjustment by the Credit Counseling and Recovery Service and randomly classifying them into high-risk and low-risk groups. It also analyzed how gender, age, marital status, the region, income, debt, the reduction rate, repayment period, and the monthly repayment amount affect the implementation of debt adjustment. According to the analysis, the difference in application status between low-risk and high-risk groups is clear. The high-risk group had lower monthly income and reduction rates than low-risk group, and had higher debt, repayment periods, and monthly repayments.

Logistic regression shows how likely each variable is to fall into high-risk group. the higher the age, the monthly repayment amount, repayment period, and reduction rate, the higher the probability of credit recovery failure. The odds ratio for age was 1.008, indicating a 0.2% increase in the probability of credit recovery failure when the age increases by one year. The odds ratio for monthly repayment is 3.203 and the odds ratio for the repayment period is 1.006. As the monthly repayment amount and repayment period increase, the probability of credit recovery failure increases. In the 61% to 99% section, the probability of failure increases by 2.1% compared to the 30% section or less.

The higher the monthly income and pre-adjustment debt, the lower the probability of credit recovery failure. The odds ratio of monthly income is 0.945. The odds ratio of the pre-adjustment debt is 0.574. On the other hand, it was found that the gender and reduction rate between 31% and 60% were not significant determinants of

failure to recover credit. Marriages and regions are also significant determinants of the failure to recover credit. Compared to married people, single people, separation, and divorce are more likely to fail. Those whose spouses have died have a 1.6 percent lower probability of failing to recover their credit than married people. By region, the failure rate in other regions is lower than in Seoul.

Debt amounts and reduction rates affect whether credit recovery fails, but there is a limit to reducing debt before applying for credit recovery. In addition, it is difficult to excessively expand the reduction rate, which is determined based on disposable income and the ability of the socially vulnerable to repay. Therefore, it is necessary to increase the repayment ability of applicants for credit recovery. Income plays a very important role because the workout program is to pay off the reduced debt through disposable income. However, in terms of the job distribution of applicants for credit recovery, the proportion of unemployed and temporary workers is high. In the case of unemployed and temporary workers, they are likely to fall into insolvency due to unstable income. This can be confirmed that the average monthly income of applicants who are in the moratorium is lower than the average monthly income of diligent payers.

Vocational education that can improve income is important. Debtors are not able to repay their debts even after the application because they have been fired or already lost their jobs due to the seizure of their bank accounts. Therefore, it is important for them to have stable jobs by having vocational education that can be repaid economically on their own.

Credit counseling can be also helpful. Although there was no analysis of the effectiveness of credit consulting in this study, the effectiveness of credit consulting has been clearly demonstrated in previous studies. Better information, advice and

consulting support can help debtors start their credit recovery freshly (Paul. A., 2017). In particular, credit consulting and vocational education should be conducted in the early stages of credit recovery. According to the analysis, 53.9% of those who fail to recover their credit often fail in the early stages of payment.

Currently, Korea has many financial support systems for the working class, employment programs, and welfare support systems. There are institutions for low-credit people such as commercial banks, savings banks, KINFA(Korea Inclusive Finance Agency) and CCRS(Credit Counseling and Recovery System) and there is the KCOMWEL(Korea Worker`s Compensation and Welfare Service) for wage earners and KOSAF(Korea Student Aid Foundation) for college students. There are also employment centers, the Ministry of Health and Welfare, the Korea Employment Agency for the Disabled, the Ministry of Health and Welfare, the National Institute of Lifelong Education, and the community center. Recently, a new system has been created to stabilize the financial life of debtors who apply for debt restructuring. A system is being created to provide credit consulting to applicants for credit recovery or to provide support in many ways, such as employment and welfare system.

However, it is still focused on welfare, and there are many shortcomings in the employment link where debtors can find stable jobs. Above all, it is necessary to strengthen the professionalism of job consultants so that job training can be conducted at the level of job seekers. It is necessary to provide social welfare services, but it is important to create an environment where debtors can stand on their own in the long run. This study found that credit recovery was initiated but failed at an early stage. Analysis of debtors' application data showed the need for vocational education and credit consulting in the early stages of credit recovery. Based on this research, we provided an opportunity to prepare supplementary points for the credit recovery system.

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