ANALYSIS ON DEFAULT OF EDUCATION COSTS RECEIVABLE AT THE XYZ

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Abstract

The XYZ Institution/Agency, as a governmental institution, has the obligation to resolve debts resulting from financial losses. This study aims to analyze the influence of demographic, financing, and educational institution characteristics on the default of educational debt/student loan (State Compensation Claim for Breach of Service Agreement) at the XYZ Agency. To achieve this objective, the study utilizes data on debtors from 1983 to 2022 at the XYZ Agency and employs binary logistic regression analysis. The results of this study indicate that age and receivable value significantly affect the quality of the debtor's receivables. Specifically, debtors who are over 26 years old and have receivable values above IDR 200,000,000 are more likely to default. In contrast, gender and campus status do not significantly impact the default rates. These findings are expected to provide insights for the XYZ Agency in improving the management of state debts, particularly educational debts, and contribute to the development of policies related to debt management in the public sector. This study also provides a comprehensive overview of the variables influencing the default of educational debts at the XYZ Agency, with a focus on the State Compensation Claim (TGR) process at the XYZ Agency.

Keywords: *state receivables, default, state losses, claims for compensation, student loan, public policy*

Introduction

In encouraging national economic recovery, settlement of state receivables which is a source of Non-Tax State Revenue (PNBP) is crucial in maintaining the stability of state financial management. Law Number 1 of 2004 states that "State Receivables are the amount of money that must be paid to the Central Government and/or the rights of the Central Government which can be valued in money as a result of agreements or other consequences based on applicable laws and regulations or other legitimate consequences." The Director of State Assets Policy Formulation at the Directorate General of State Assets (DJKN) of the Ministry of Finance said that the number of State Receivables Case Files (BKPN) had increased from 1,491 BKPNs in 2021 to 2,328 BKPNs in 2022.

One of the factors that causes state receivables is state losses. State losses, as defined in Government Regulation Number 38 of 2016, are stated as "a shortage of money, securities and goods, which is real and definite in amount as a result of unlawful acts whether intentional or negligent". In the context of state losses, there are four main

categories that can be a source of state financial losses. Tuanakotta (2009) illustrates this through a tree diagram showing a number of related state financial accounts. This state financial loss tree diagram consists of four main branches, each of which represents a specific account. Each account has branches that describe the relationship between unlawful actions and that account. These four accounts involve Assets, Liabilities, Revenues and Expenditures.

In an effort to resolve any state losses caused by violations of law or negligence, it is important to immediately follow the procedures established by applicable law. All heads of state ministries, institutions and regional work units have the authority to submit claims for compensation when losses occur within their agencies as a result of anyone's actions.

Agency Most of the receivables resulting from state losses arising from Agency XYZ are Compensation Claims (TGR) receivables. TGR is a legal step taken against non-treasurer civil servants or other officials with the aim of recovering losses suffered by the State. These demands are caused by several things, such as demands for employees of the breaking the law.

The task of the XYZ Agency is to identify cases of receivables, calculate losses experienced by the state, determine cases of receivables, and monitor payments until the receivables are paid off. Apart from that, the XYZ Agency also plans and designs regulations and policies related to the processing and management of State Compensation Claims Receivables *(TGR/Tuntutan Ganti Rugi)*.

Based on the Financial Report of the XYZ Agency, data from 2018 to 2020 shows that the value of Uncollectible TGR Receivables has increased by 25.65 percent and the potential state income from collecting these receivables has reached 25,011,055,593 Rupiah. Most of the uncollectible receivables arose due to delays in payment of education fee receivables (Claims for Compensation for State Losses in Cases of Default in Learning Assignment Service Bond Agreements). Data on the TGR value at XYZ Institution up to 2020 shows that 83.98 percent of the total 42,158,688,833 Rupiah is the TGR value originating from the TGR for education financing. The remaining 7.29% came from Third Party TGR, 3.06 percent from lost two-wheeled vehicles, 2.46 percent from lost office inventory items, and the remaining 3.21 percent came from 6 other types of cases. Receivables for education costs arise when a person receives education funding, either from the State Revenue and Expenditure Budget (APBN) or from another party and contracts with a government agency to undertake a service bond but the person concerned violates the work contract. Education funding from this case will become a receivable from state losses that must be resolved.

Non-payment of receivables can have various consequences and negative impacts on the parties involved, both from the giver and the borrower or debtor. From the perspective of the provider, especially the state, non-payment of receivables in full can result in significant financial losses. Public funds that should be realized from these receivables are hampered, affecting budget allocations that should be used for the benefit of the community. This impact can harm the efficiency of state financial management and hamper various planned development programs. Meanwhile, from the perspective of the borrowing party or debtor, the inability to fulfill receivable payment obligations can have serious consequences. This can include a reduction in an individual's financial reputation, difficulty gaining access to future financing, and a negative impact on career progression or personal development.

Apart from that, the income from resolving the TGR case will be a source of Non-Tax State Revenue (PNBP) which will be useful in many ways, especially for the public interest. One of them is helping the government carry out the National Economic Recovery Program (PEN). This program is one of a series of efforts made to reduce the impact of the COVID-19 pandemic on the Indonesian economy. Apart from addressing health problems, the Government is also implementing the PEN Program as a response to the decline in community activity which has a negative impact on the economic sector. To solve this problem, the Indonesian government needs a large budget.

In this situation, Agency XYZ can contribute to supporting state revenues by optimizing the settlement of receivables due to state losses incurred at Agency If the settlement of state receivables can be optimized, then state revenues will be greater, which can bring benefits to the wider community. Non-payment of receivables can have various consequences and negative impacts on the parties involved, both from the giver and the borrower or debtor.

As a solution to this problem, researchers are interested in analyzing the influence of what characteristics influence the failure to pay education fee receivables that occur at XYZ Institution. Research by Han et al. (2015) in South Korea shows that the characteristics that influence student loan default are demographic characteristics, loans, financial aid, and institutions, which include variables such as gender, major, scholastic grades, length of study, and so on. Furthermore, logistic regression analysis conducted by McKinney et al. (2021) on community college graduates in the United States showed that gender, parental education level, income, enrollment status, and lateral transfer status had an influence on default on education loan fees.

By referring to the methodology that has been used in previous research which is adapted to the available data, this research will use binary logistic regression analysis. Binary logistic regression is a statistical method that is suitable for analyzing dichotomous dependent variables, such as the quality categories of receivables in this study (default and non-default). This method allows researchers to understand the relationship between independent variables, such as demographic characteristics, financing, and educational institutions, with dependent variables in the form of binary categories.

This research presents a new contribution with a focus on analyzing the influence of characteristics on failure to pay education fee receivables that occurred at XYZ Institution. The novelty of this research lies in its specific context which highlights the role of Agency While previous research tends to focus more on higher education institutions or other financial institutions, this research brings a deeper understanding of the dynamics and factors that influence the payment of education fee receivables in the government environment. There is also uniqueness in the Indonesian context, where not much related research has been carried out. This research uses combined variables from several journals, so the variables used are more complete and cover various relevant aspects.

It is hoped that the results of this research can provide valuable input to Agency XYZ in improving the management of state receivables, especially education fee receivables. In this way, Agency XYZ can increase the effectiveness and efficiency of managing receivables, as well as avoid receivables that have not been settled and recorded in Agency For the academic world, the results of this research can contribute new knowledge in receivables management in the public sector and can be relevant study material for further research in the same field.

Hypothesis Development
Economic Theories: Human capital and Ability to Pay

Human capital and repayment theories are key frameworks for understanding borrowing behavior and loan defaults. Human capital theory emphasizes that students make decisions to borrow by considering the long-term benefits of higher education compared to the borrowing costs they have to bear (Christie & Munro, 2003; Christou & Haliassos, 2006; Flint, 1997; Volkwein et al., 1998) . Although useful, this theory has limitations in explaining differences in borrowing behavior between student groups (Paulsen, 1998; Perna, 2006).

Meanwhile, the ability to pay perspective highlights the importance of subsidies or obligations based on ability to pay, which can influence lending decisions as well as the possibility of repayment (Flint, 1997). Students from low-income households tend to experience a higher risk of default and accumulate more student loan debt, although in some cases, a large amount of debt can also be an indication of success in completing an educational program (Hillman, 2014; Steiner & Barone, 2014).

Sociological Theories

In studies of loan default based on sociological theory, the functionalist approach dominates. This approach directs our attention to loan default as the result of a complex system in which factors such as students' integration within the institutional context are crucial. Works such as those by Spady (1970, 1971) and Tinto (1975, 1982, 1988, 1993) examine the mechanisms by which students integrate into the social and academic environments of institutions. Nonetheless, a variety of theoretical approaches have been used in studying postsecondary educational attainment often adopting a functionalist approach. For example, Attinasi (1989) uses ethnomethodology and symbolic interactionism, Tierney (1992) uses critical theory, or Torres (2006) uses social cognitive theory.

Student integration model(Spady, 1970, 1971; Tinto, 1975, 1988, 1993), student attrition model (Bean, 1980; Bean & Metzner, 1985), and student adjustment model (Nora & Cabrera, 1996) are frameworks commonly used to conceptualize student persistence. Although different in some respects, what these models have in common is their focus on the way individuals interact with aspects of the postsecondary environment and the subsequent impact of these interactions on whether students remain enrolled. To date, these models have not been applied directly to inform research on loan default. However, research on default shows the important role a student's postsecondary experiences and environment play in the likelihood of subsequent default. Student characteristics, academic experiences, and educational institutional context are all associated with loan default (McKinney et al., 2021).

Quality of Receivables

Literature related to loan defaults is the main focus in order to understand the factors that influence debt settlement or failure to pay. The quality of debtor receivables includes the categories of *lancar, kurang lancar, diragukan,* and *macet* (default), as regulated in Minister of Finance Regulation Number 201/PMK.06/2010. This categorization is based on the timeliness of repayment of receivables according to the specified due date. However, in this study, the dependent variable will be categorized into two, namely default and non-default due to limitations in *kurang lancar* and *diragukan* quality.

Previous studies, such as research by Han et al. (2015) and McKinney et al. (2021), provides valuable insight into the factors that contribute to student loan default. The findings of this study indicate that demographic, financing, and institutional variables have a significant impact on the probability of default. The importance of favorable policies and institutional strategies to reduce default rates is also highlighted in this literature.

Overall, the literature on student loan default highlights the complexity of factors that influence debt repayment decisions. With a better understanding of these factors, financial and policy institutions can design more effective strategies to reduce default rates and help ensure the sustainability of higher education systems.

Demographic Characteristics and Quality of Receivables

Demographic characteristics, such as gender and age, are important factors in student loan default analysis. Previous research shows that men have higher default rates than women, while age and marital status also have a significant impact (Podgursky et al., 2002; McKinney et al., 2021). Apart from that, income is also an important variable that influences the possibility of default, where the higher a person's income, the less likely they are to experience default (Wilms et al., 1987; McKinney et al., 2021).

H1: it is suspected that the variable *gender* has a significant effect on the quality of debtors' receivables.

H2: it is suspected that the variable *age* has a significant effect on the quality of debtors' receivables.

Financing Characteristics and Receivables Quality

Financing characteristics, such as the value of receivables, also play a role in student loan default analysis. High receivable values and long payment periods can increase the risk of default for debtors (Choy & Li, 2006; Han et al., 2015).

H3: it is suspected that the variable *receivable value* has a significant effect on the quality of debtors' receivables.

Characteristics of Educational Institutions and Quality of Receivables

Characteristics of educational institutions, such as institutional status, also influence the probability of default. Students from private institutions will have poor job market prospects and tend to have a higher risk of default than public institutions (Han et al., 2015).

H4: it is suspected that the variable *campus status* has a significant effect on the quality of debtors' receivables.

Conceptual Framework

The conceptual framework in the research is designed to describe the relationship between demographic characteristics, financing and educational institutions and the quality of debtor receivables in the context of education loans. In this conceptual framework, hypotheses (H1-H4) are proposed to test the influence of these variables on the quality of debtor receivables. By understanding this influence, it is hoped that more

effective policies and strategies can be formulated to reduce the default rate in the education financing assistance system.
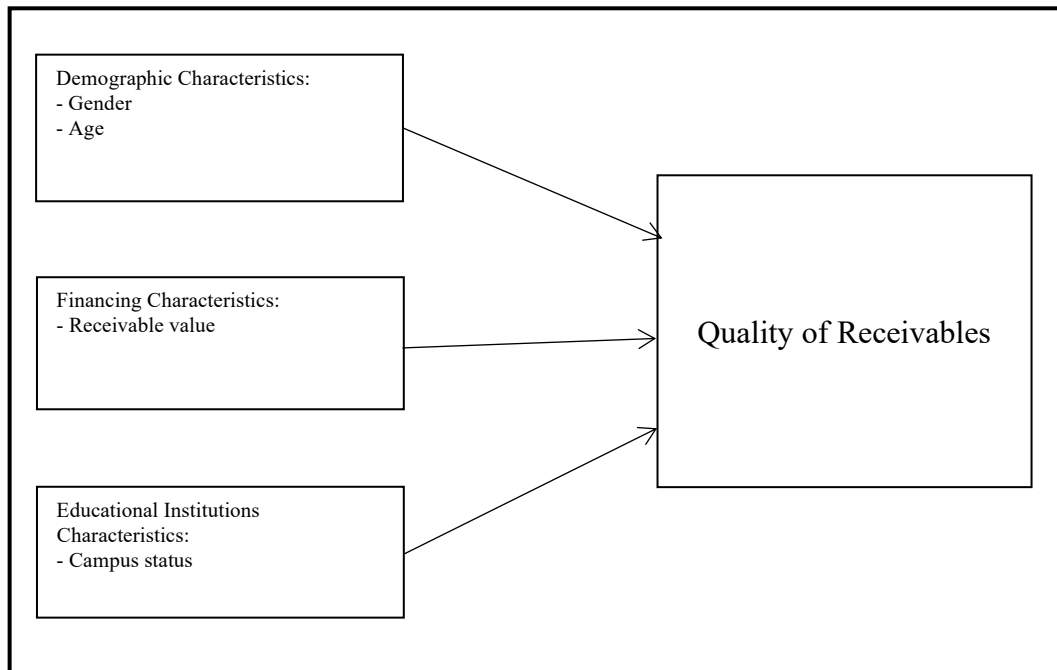

Figure 1. Research Conceptual Framework

Research Methos
Data source

Data collection will be carried out secondarly. Secondary data was obtained through direct data requests to the XYZ Agency. The data requested is raw data on all debtors (the entire population) along with the debtor characteristics required in the research, including data on gender, age, receivables value/TGR, and campus status.

Operational definition

The selection of independent variables in this research was carried out based on a literature review and previous research regarding factors that influence debt settlement or failure to pay.

Table 1. Operational Definition of Variables

Variable	Symbol	Operational definition	Category
(1)	(2)	(3)	(4)
Quality of receivables	Y	The level of quality payment of receivables by debtors	0: No Default* 1: Default
Gender	X1	Gender of each debtor	0: Male* 1: Female
Age	X2	Debtor's age in years	0: Under 26 years old* 1: 26 years and over
Receivable value	X3	The amount of financing received by the debtor from educational institutions, financial institutions, or other institutions used to finance educational costs or other	0: Under IDR 200,000,000* 1: IDR 200,000,000 and above

Variable	Symbol	Operational definition	Category
(1)	(2)	(3)	(4)
		needs during the college period is multiplied by two as a fine for default on the debtor's contract with the institution	
Campus status	X4	Status or category of educational institution where the debtor takes education	0: Public/state* 1: Private

Remarks *) reference category

Analysis Method

The analytical methods applied in this research include descriptive analysis and inferential analysis using binary logistic regression. Descriptive analysis was carried out to provide a comprehensive picture of the characteristics of education fee debtors based on predetermined independent variables.

Furthermore, because the dependent variable in this study is binary data, binary logistic regression analysis is used to check whether the independent variable has a significant influence on the dependent variable. Logistic regression analysis is used to explain the relationship between dependent variables which are categorical and independent variables which can be quantitative and/or categorical variables (Hosmer and Lemeshow, 2000). In this analysis, a goodness of fit test will be carried out to evaluate the extent to which the logistic regression model fits the existing data. Next, a simultaneous test using the likelihood ratio test was carried out to obtain information about the overall influence of all independent variables on the dependent variable. Then, if the simultaneous test gives results that there is at least one independent variable that influences the quality of the debtor's receivables, then a partial test with the Wald test is carried out to find out which independent variables have a significant effect on the quality of the debtor's receivables.

Results and Discussion
Debtor Characteristics

Based on data processing of cases of non-compliance with study assignment agreements at XYZ Institution, there were 181 debtors from 1983 to 2022. Of these debtors, 37 people or around 20.4 percent had bad debt quality status (default). Meanwhile, 144 people or around 79.6 percent of the others had non-default status.

Table 2. Debtor Characteristics based on Independent Variables

Variable	Amount	Percentage (%)
Gender		
Woman	80	44.2
Man	101	55.8
Age		
Under 26 years old	73	40.3
26 years and over	108	59.7
Receivable value		
Under IDR 200,000,000	153	84.5
IDR 200,000,000 and above	28	15.5
Campus Status		
Public/state	174	96.1

Variable	Amount	Percentage (%)
Private	7	3.9
Total	**181**	**100.0**

Source: XYZ Agency, processed

From the table above, it can be seen that the majority of debtors are male, namely 55.8 percent, and those aged 26 years and over are 59.7 percent of all debtors. If we look at the financing characteristics, the majority of debtors or around 84.5 percent have receivable values below 200,000,000 rupiah. Apart from that, if we trace it further based on the characteristics of educational institutions, almost all debtors or around 96.1 percent come from public or state campuses.

Quality of Receivables based on Debtor Characteristics

Table 3. Cross Tabulation of Receivables Quality based on Debtor Characteristics

Variable	Quality of Receivables	
	No Default	**Default**
Gender		
Woman	86.25%	13.75%
Man	74.30%	25.70%
Age		
Under 26 years old	76.70%	23.30%
26 years and over	81.50%	18.50%
Receivable value		
Under IDR 200,000,000	86.90%	13.10%
IDR 200,000,000 and above	39.30%	60.70%
Campus Status		
Public/state	81.00%	19.00%
Private	42.90%	57.10%

Source: XYZ Agency, processed

Based on the table presented above, there are interesting patterns in the quality of receivables based on debtor characteristics. In general, male debtors have a higher percentage in default than female debtors, with the percentage of bad debtors among men reaching 25.7 percent, while among women it is only 13.75 percent. Furthermore, it can be seen that the percentage of debtors under 26 years of age have a higher level in default compared to those aged 26 years and over. The percentage of bad debtors from those aged under 26 years reached 23.3 percent, while from those aged 26 years and over it was only 18.5 percent. Interestingly, there are significant differences in the quality of receivables based on receivable value. Debtors with receivable value above IDR 200,000,000 have a much higher percentage to default compared to those below IDR 200,000,000. The percentage of bad debtors with receivable value below IDR 200,000,000 is 13.1 percent, while for values above IDR 200,000,000 it reaches 60.7 percent. Likewise, there are striking differences between public/state and private campuses in terms of the quality of debtor receivables. The percentage of debtors experiencing bad debts at private campuses is much higher than at public/state campuses, with the respective percentages being 57.1 percent and 19.0 percent.

Inferential Analysis

To answer the research objectives, inferential analysis was carried out using binary logistic regression analysis. The first analysis stage is to carry out a goodness of fit test to see whether the model used is suitable for explaining the quality of debtors' receivables at XYZ Agency. Next, a simultaneous test was carried out to determine whether there was an influence of the independent variables on the quality of the debtor's receivables together. If from the simultaneous test (overall test) the H0 result is rejected, the next step is to carry out a partial test (Wald Test). A partial test is carried out to determine the independent variables that have a significant influence on the quality of debtor receivables, as well as the value of the odds ratio for each independent variable.

Table 4. Model Fit Test Using the Hosmer and Lemeshow Test

Chi-square	Degrees of Freedom	Sig.
2,806	5	0.730

Source: Processed by the Author

The model suitability test (Goodness of Fit Test) is used to see whether the model used is appropriate in explaining the quality of education fee debtors' receivables at XYZ Institution. The results of this test obtained a p-value of 0.730 which is greater than 0.05. Thus, it was decided to fail to reject H0 and it could be concluded that with a confidence level of 95 percent the best model obtained was suitable in explaining the quality of education fee debtors' receivables at XYZ Institution.

Table 5. Coefficient of Determination or R-square values

-2 Log likelihood	Cox & Snell R-Square	Nagelkerke R-Square
149,414	0.171	0.268

Source: Processed by the Author

Furthermore, to find out how much the model used in the research can explain the quality of debtor receivables, it can be seen based on the value of the coefficient of determination or R-square. From the processing results, the Nagelkerke R-Square value is 0.268 or it can be interpreted that 26.8 percent of the total variation in the quality of debtor receivables can be explained by the independent variables used in the overall model.

Table 6. Simultaneous Test Results Using the Omnibus Test of Model Coefficient

Chi-square	Degrees of Freedom	Sig.
33,928	4	0,000

Source: Processed by the Author

To determine the significance of the independent variables together, a simultaneous test was carried out using the Omnibus Test of Model Coefficient. Based on the results of simultaneous tests using the Omnibus Test of Model Coefficient, the G value was 33.928, while the $\chi2(0.05;4)$ value was 9.488. It can be seen that the value of $G > \chi2(0.05; 4)$ so that the decision to reject H0 is obtained. Apart from that, it can also be seen from the significance value, which is 0.000 which is smaller than 0.05. Thus, it

can be concluded that with a 95 percent confidence level there is at least one independent variable that influences the quality of education fee debtors' receivables at XYZ Institution.

Because the simultaneous test resulted in a decision to reject H0, a partial test was carried out to find out which variables influenced the quality of education fee debtors' receivables at XYZ Institution. The partial test will result in a decision to reject H0 if the Wald test statistical value $> \chi^2(0.05.1)$ or the p-value $< \alpha$, which means there is a significant influence of the independent variable on the quality of education fee debtors' receivables.

Table 7. Parameter estimation values, Wald test statistics, and significance values of the independent variables in the model

Variable	Coefficient	S.E	Wald	p-value	Odds Ratio
(1)	(2)	(3)	(4)	(5)	(6)
Gender					
Man*					
Woman	0.814	0.449	3,284	0.070	2,257
Age					
Under 26 years old*					
26 years and over	-0.896	0.449	3,988	0.046	0.408
Receivable value					
Under IDR 200,000,000*					
IDR 200,000,000 and above	2,372	0.519	20,865	0,000	10,718
Campus Status					
Public/state*					
Private	0.701	0.961	0.532	0.466	2,015
Constant	-1,943	0.408	22,671	0,000	0.143

Description: *) reference category | Source: XYZ Agency, processed

From the processing results in the table above, it is known that the independent variables that significantly influence the quality of education fee debtors' receivables are age, education period, and receivable value. Therefore, the binary logistic regression model equation formed is as follows:

$$\hat{g}(D) = -1,943 + 0,814D_1 - 0,896D_2 + 2,372D_3 + 0,701D_4$$

As an explanation of the influence of independent and dependent variables, the odds ratio value will be used to simplify interpretation. The odds ratio for the age variable is 0.408. This shows that debtors aged 26 years and over have a tendency of 0.408 times compared to debtors aged under 26 years to fail to pay their debts. Or it can be said that debtors aged 26 years and over have a 2.451 times greater tendency than debtors aged under 26 years to successfully pay their debts.

This finding is in line with previous research which shows that age plays an important role in a person's ability to manage debt. However, a study conducted by Herr and Burt (2005) confirmed that the older the debtor, the higher their probability of defaulting on education debt. This is inversely proportional to the results of research which explains that young debtors are more likely to fail to pay their debts. Positively,

older debtors may have greater financial stability and greater experience in managing their finances, which may better support their ability to repay debts.

Odds ratio of the receivable value variable is 10,718. This shows that debtors who have debts of IDR 200,000,000 and above are 10.718 times more likely than debtors who have debts under IDR 200,000,000 to fail to pay their debts.

This finding is consistent with previous research which shows that the amount of financing can be a strong indicator for assessing debtors' ability to pay their debts. Choy and Li (2006) found that the higher the debt value, the higher the debtor's default rate. However, keep in mind that a high receivable value may also reflect a greater educational need or investment in higher education, which may ultimately lead to greater financial returns in the future.

Based on the results of processing with statistical analysis, it was found that the variables gender and campus status did not have a significant influence on the quality of education fee debtors' receivables. A p-value greater than 0.05 indicates that there is not a strong relationship between these variables and the quality of debtor receivables. Therefore, these variables were considered irrelevant in the model used and were excluded from further analysis.

Although some previous studies have shown that gender can influence the tendency to default on debt, in the context of education costs, the difference between men and women may not be significant. For example, in a study conducted by Podgursky et al. (2002), found that men tend to have higher default rates than women. However, in the context of educational costs, both genders may have similar debt burdens, especially if they have equal access to education and financing.

Campus status does not have a significant effect on the quality of receivables because there are several factors that may play a role in this matter. First, the difference between public/state and private campuses may not be very significant in terms of the debt burden borne by students. Although the cost of education at private campuses is generally higher, the ability to pay off debt is more influenced by other factors.

Additionally, students from private campuses may have good job prospects if the campus has a strong alumni network or programs that are in demand by the job market. In contrast, students from public/state campuses may face similar challenges in terms of the job market, depending on their major and campus location. Additionally in the context of this study, the variability produced by campus status may not be large enough to demonstrate a statistically significant effect. This could be caused by the sample used in the study which may be more homogeneous or the distribution of variables is uneven.

Conclusion

Based on the results of research conducted on education fee debtors at XYZ Institution, it was found that the variables age and receivable value had a significant effect on the quality of the debtor's receivables. Debtors who are over 26 years old, have a receivable value of more than IDR 200,000,000, and have an education period of less than 4 years tend to have a higher risk of default. These results highlight the importance of considering these factors in managing education fee receivables to reduce the risk of default in the future.

This research provides an important contribution to the understanding of the factors that influence the quality of education fee debtors' receivables. These findings can be used as a basis for developing more effective policies in risk management of education fee receivables in financial institutions or government institutions. Apart from that, these

results also have practical implications in decision making related to providing educational financing assistance to prospective students. Although this study provides valuable insights, there are several limitations that need to be noted. One of them is the use of secondary data from Agency XYZ which may have limitations in terms of completeness of information. Apart from that, there are other factors that were not considered in this research, such as dependency status, parental education level, race, or other factors that can also influence the quality of the debtor's receivables. Another limitation is that this study represents only one institution, so the generalizability of the findings to a broader population may be limited.

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