



## The influence of age, savings balance, and salary on the amount of customer deposit savings at bank XYZ

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### ABSTRACT

The increasing number of money supply in society from year to year, in 2020 it has increased by 12.4%. in 2021 it increased by 13.9%, and in 2022 it increased by 8.3%. Increasing money supply in society can trigger effects such as uncontrolled inflation and decrease interest rate especially for deposit savings. This study will find out which variables have a positive influence in making people want to save their money in Bank in long term savings which is time deposit. Data utilized in this research consist of a sample of 400 customers who have deposit savings product. The objective is to analyze the impact of age, account balance, and income on the amount of deposit savings. The independent variables are age, account balance, and income, while the dependent variable is the amount of deposit savings. Data analysis employs Multiple Linear Regression with Microsoft Excel software. Based on the analysis, it can be inferred: (1) Age, account balance, and income positively influence the amount of deposit savings; (2) The  $R^2$  value is 34%, signifies the independent variables influences for 34% of the deposit savings amount, with the remaining 66% influenced by other independent variables.

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## INTRODUCTION

The amount of money supply has been consistently increasing from year to year. In 2019, 2020, 2021, and 2022, the successive amounts of money supply were IDR5,937.5 trillion (an increase of 7.8% YoY), IDR6,900.0 trillion (increase of 12.4% yoy), IDR7,867.1 trillion (increase of 13.9% yoy), and Rp 8,525.5 trillion (increase of 8.3% yoy) (Uang Beredar Tumbuh Positif Pada Desember 2022, n.d.). Growing amount of money in supply, it can stimulate faster economic growth due to increased purchasing power. However, an excessively large amount of money supply can lead to uncontrollable inflation (Christianingrum & Syafri, 2019) When inflation continues to rise, it can result in a continuous decline in bank interest rates. The decrease in bank interest rates tends to decrease people saving intention in banks (Astuti & Mustikawati, 2013).

Banks need funds collected from people for doing lending. One focus of the banking sector is time deposit (Pratama, 2016). Time deposit are more advantageous for banks compared to

regular savings because customers cannot withdraw their money at any time (Raino & Miranda, 2018). Time deposit able to withdrawn according to the maturity date, such as monthly, quarterly, semi-annually, or annually. It makes easier for banks to manage fund circulation (Bikker & Gerritsen, 2018).

Age is the time from the date of birth until the present in years (*L. L. Thurstone: The Mental Age Concept*, 1926). An individual's interest in saving deposits can be determined by the factor of age. The more mature a person is, the greater the tendency for them to save for the long term. This leads individuals to set aside money for unforeseen events in the future (Lilia et al., 2021). Age is a variable that directly influences the decision of individuals to open a deposit account (Juaria, n.d.).

Savings are money deposits in a bank that can be withdrawn at any time. The bank provides a savings book containing information on all transactions and an ATM card complete with a PIN number (*Simpanan*, n.d.). Essentially, savings are a portion of received income that is not used for consumption, or in other words, the difference between income and consumption (Kasiang et al., 2018). Saving can help an individual develop financial discipline and good financial management, thereby motivating individuals to engage in long-term investments such as opening a deposit account (Yohnson, 2004).

Salary is payment for the services rendered by employees working in a company, paid regularly every month (Straub, 2019). Employees who experience an increase in salary will also see an increase in consumption and the amount of money saved for long-term purposes (Astuty et al., 2022). The higher the salary obtained, the greater the interest of the customer in saving for long-term needs. This salary factor directly influences the amount of deposit savings that the customer possesses (Fitri, 2018).

Time deposit in accordance with Act of the Republic of Indonesia Number 10 of 1998 regarding Banking are declared as savings that can only be withdrawn at specific times based on the agreement between the depositor and the bank. Deposit savings involve a longer-term element and can only be withdrawn or liquidated after a specified period (Yuliawan, 2017). Deposits are a type of Third Party Funds with a higher interest rate than regular savings (Deposito ::: SIKAPI ::, n.d.).

This study aims to examine the significance of variables influencing an individual's interest in saving for time deposit and calculate deposit amount based on variables such as the customer's age, monthly salary, and the amount savings balance. The analysis aims to determine whether these three independent variables have a positive impact on the amount of time deposits held by the customers. Data used in this study are the customers who have time deposits in bank XYZ.

This study addresses gaps in previous research by focusing on the specific dynamics of individuals' preferences for time deposits, particularly within the context of increasing money supply and potential inflationary pressures. While past studies may have taken a more general approach, this research aims to provide a comprehensive analysis of the combined impact of age, monthly salary, and savings balance on the amount of time deposits by customers, specifically customer of bank XYZ.

## RESEARCH METHOD

The research method employed in this study is a quantitative method based on primary data by using multiple linear regression method. Population in this study is all banking customer who has time deposit in bank XYZ, with total of 400 customer. Sample in this study is conducted using the random sampling technique, thus giving each customer an equal chance of being selected as a sample in the analysis (Sekaran & Bougie, 2016). This study Cochran formula to determine minimal sample size because the population size is unknown, and there are constraints in terms of time, cost, and resources for the research (Cochran, 1963). Therefore, the following formula will be used:

$$n = \frac{Z^2 pq}{e^2} \quad (1)$$

The value of  $n$  represents the required sample size.  $Z$  is the value for the normal curve at a 5% confidence level, which is 1.96.  $p$  is the probability of success, which is 50%.  $q$  is the probability of failure, also 50%.  $e$  is the margin of error for the sample, set at 5% or 0.05. By substituting these values into the formula, the value of  $n$  is  $384,16 \approx 385$  sample size. Based on this calculation, the minimum required sample size for this research is 385. The study uses a sample of 400 person, which exceeds the minimum required sample size. Research data was collected by spreading the questionnaire. The answers were analyzed using multiple regression methods in Microsoft Excel software.

The relationship between the variables is represented by the following equation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \quad (2)$$

Where:

$Y$  is the total deposit (measured in millions),

$X_1$  is the age of the individual (measured in years),

$X_2$  is the amount of savings (measured in millions),

$X_3$  is the salary (measured in millions),

$\beta_0$  is constant

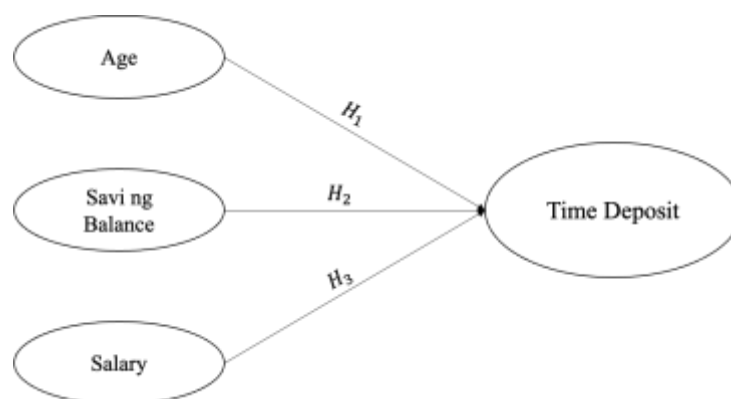
$\beta_1$  is regression coefficient for  $X_1$

$\beta_2$  is regression coefficient for  $X_2$

$\beta_3$  is regression coefficient for  $X_3$

$\varepsilon$  is standard error

Data analysis process consists of measuring validity, reliability, and hypothesis testing. Multi regression model used in this study is described as shown below:



**Figure 1.** Research Model

This study hypotheses describe the initial predictions in the research to be conducted. The initial hypotheses are as follows:

$H_1$ : The age of customer has a positive influence on the nominal deposit saving

$H_2$ : The amount of savings by customer has a positive influence on the nominal deposit saving

$H_3$ : The salary of customer has a positive influence on the nominal deposit saving

## RESULTS AND DISCUSSIONS

In this study, the coefficient of determination ( $R^2$ ) is performed using Microsoft Excel.

**Table 1.** Results of the analysis using linear regression

Regression Statistic	Value
Multiple R	0.583333902
R Square	0.340278441
Adjusted R Square	0.335280551
Standard Error	67.93230727

Based on the research results above, the value of R-squared is 0.34, the value for adjusted R-squared is 0.335. The interpretation of these coefficient of determination test results is 34% of the variation in the dependent variable, which consists of the factors age ( $X_1$ ), savings amount ( $X_2$ ), and salary ( $X_3$ ), can influence the nominal deposit savings of customers. Meanwhile, the remaining 66% is influenced by other independent variables that were not included in this study. The next step is doing hypothesis test by using t-test.

**Table 2.** Results of t-test statistic

Variable	Coefficients	Standard Error	t Stat
Intercept	-74.87367256	14.62196461	-5.120630133
X Variable 1	1.794034126	0.388341421	4.619734153
X Variable 2	6.373776123	0.943207753	6.75755273
X Variable 3	1.461365452	0.233092758	6.26945884

Based on results above, it is known the obtained t-value for independent variable age ( $X_1$ ) is 4.619 with a significance level of 5%. The t-value > the t-table value of 1.79788, meaning that it can be interpreted that the age variable has a positive influence on the nominal deposit savings (reject  $H_0$ ). Similarly, the t-value for the independent variable savings amount ( $X_2$ ) is 6.758 with a significance level of 5%. The t-value > the t-table value indicating the variable of savings amount has a positive influence on the nominal deposit savings (reject  $H_0$ ). Moreover, the t-value for the independent variable salary ( $X_3$ ) is 6.269 with a significance level of 5%. The t-value > the t-table value, meaning that it can be interpreted that the salary variable has a positive influence on the nominal deposit savings (reject  $H_0$ ). The next step is doing the F-test statistic.

**Table 3.** Results of F-test statistic

ANOVA	df	SS	MS	F
Regression	3	942587.4977	314195.833	68.0844
Residual	396	1827460.155	4614.79837	
Total	399	2770047.653		

Based on the results above, F-value is 68.084. Which is greater than critical F-table value of 3.59. This can be interpreted as indicating the variables age, savings amount, and salary of customers collectively have a simultaneous influence on the nominal deposit savings of those customer.

The next step is doing multicollinearity test. Multicollinearity test is used to examine whether there is a correlation among independent variables in a regression model (Astuty et al., 2022). If the tolerance value > 0.10 and the Variance Inflation Factor (VIF) value < 10, it can be concluded that there is no multicollinearity in the regression model. The table for calculating tolerance and VIF for each independent variable is as follows:

**Table 4.** Results of Tolerance and VIF

Variable	R-Squared Values	Tolerance	VIF
X1	0.170434	0.829566	68.0844
X2	0.192458	0.807542	
X3	0.194377	0.805623	

From the data in the table above, it can be observed that the overall tolerance values for each variable are greater than 0.10, and the VIF values for each variable are less than 10. Therefore,

it can be concluded that there is no indication of multicollinearity among the independent variables in the regression model. This indicates that each independent variable can be considered independent of each other in influencing the dependent variable in the regression model.

The following are the results of the linear regression analysis obtained using Microsoft Excel with a 95% Confidence Interval:

**Table 5.** Results of multiple linear regression

Variable	Coefficients	Standard Error	t Stat	P-value
Intercept	-74.87367256	14.62196461	-5.120630133	4.76E-07
X Variable 1	1.794034126	0.388341421	4.619734153	5.20E-06
X Variable 2	6.373776123	0.943207753	6.75755273	5.03E-11
X Variable 3	1.461365452	0.233092758	6.26945884	9.48E-10

The analysis using linear regression serves to analyze the overall impact of independent variables on the dependent variable. In this study, tests were conducted to examine the influence of age, savings amount, and salary on the total nominal customer deposit at Bank XYZ, as described in the following equation:

$$Y = -74,874 + 1,794X_1 + 6,374X_2 + 1,461X_3 + \varepsilon$$

Here is the explanation based on the regression equation model above: (a) Constant ( $\beta_0$ ): The constant is -74.874, indicating that when the variables age, savings amount, and salary have values of 0, the nominal amount in the deposit savings becomes -74.87 million rupiahs. (b) Regression coefficient for the age variable ( $\beta_1$ ): The value is 1.794 for the age variable, indicating that a 1-year change in the customer's age can influence the amount of deposit savings by 1.794 million rupiahs. The age variable has a positive impact on the amount of deposit savings, as evidenced by the p-value for the age variable being  $5.20 \times 10^{-6}$ , which is  $< 0.05$  with a 95% confidence level. (c) Regression coefficient for the savings amount variable ( $\beta_2$ ): The value is 6.374 for the savings amount variable, indicating that a 1 rupiah change in the customer's savings amount can influence the amount of deposit savings by 6.374 rupiahs. The savings amount variable has a positive impact on the amount of deposit savings, as evidenced by the p-value for the savings amount variable being  $5.03 \times 10^{-11}$ , which is  $< 0.05$  with a 95% confidence level. (d) Regression coefficient for the salary variable ( $\beta_3$ ): The value is 1.461 for the salary variable, indicating that a 1 rupiah change in the customer's salary can influence the amount of deposit savings by 1.461 rupiahs. The salary variable has a positive impact on the amount of deposit savings, as evidenced by the p-value for the salary variable being  $9.48 \times 10^{-10}$ , which is  $< 0.05$  with a 95% confidence level.

Preliminary findings from the research conducted to examine the influence of age, savings amount, and salary on the amount of deposit savings for a sample of 400 customers at Bank XYZ., based on data as of December 31, 2023, are as follows:

H<sub>1</sub>: Influence of Age on the Amount of Customer Deposit Savings

The analysis indicates a positive influence of the age variable on the amount of customer deposit savings. Partial test results (t-test) show that as the age of customer increases, the amount of deposit savings also increases. This finding supports the research conducted by (Lilia et al., 2021). stating that increasing age tends to lead to a greater interest in long-term savings, including deposits (Agarwal et al., 2009;Kumcu, 1989 ; Morgan & Long, 2020; Prianji, 2011).

H<sub>2</sub>: Influence of Savings Amount on the Amount of Customer Deposit Savings

The analysis reveals a positive influence of the savings amount variable on the amount of customer deposit savings. Partial test results (t-test) demonstrate that a higher amount of savings leads to a larger amount of deposit savings. This result aligns with the previous research by (Yohnson, 2004) indicating that saving helps individuals develop financial discipline and good

financial management, motivating them to save for the long term, such as through deposit savings (Morgan & Long, 2020; Schunk & Rich, 2009).

H<sub>3</sub>: Influence of Salary on the Amount of Customer Deposit Savings

The analysis indicates a positive influence of the salary variable on the amount of customer deposit savings. Partial test results (t-test) show that a higher salary is associated with a larger amount of deposit savings. This finding supports the research conducted by (Astuty et al., 2022), which suggests that an increase in a customer's salary is accompanied by an increase in consumption and the amount of money saved for deposit savings (Adetunji & David-West, 2019; Hong et al., 2002; Morgan & Long, 2020; Prianji, 2011).

## CONCLUSION

In conclusion, the research findings carry important implications and contributions to both academia and practical applications. Firstly, the positive correlation between age and deposit savings suggests that as individuals advance in years, there is a corresponding increase in the likelihood of accumulating a higher amount of savings. This insight can guide banks in designing targeted savings plans or investment products for older demographics. Secondly, the research underscores the pivotal role of savings amount, revealing that a larger sum held in savings accounts is associated with a heightened probability of maintaining greater deposit savings. Thirdly, the positive relationship between salary and deposit savings underscores the significance of income levels in shaping individual saving behaviors, suggesting the need for financial institutions to offer personalized financial advice and products based on customers' income brackets. Overall, the research contributes by providing nuanced insights into the interplay of age, savings amount, and salary in shaping deposit savings, thereby informing strategic decisions for financial institutions and policymakers to better serve diverse customer segments and address evolving financial needs.

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