

Saving Preferences in Banking Institutions among West Java People Before Covid-19

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ABSTRACT

Saving represents residual income after consumption and contributes to economic growth through investment. This study aims to analyze the savings preferences of West Java residents, one of Indonesia's most populous provinces. Data were derived from the 2018 SUSENAS, published in 2019, reflecting conditions before the Covid-19 pandemic. A savings ownership model was developed to capture preferences, with key determinants including expenditure, education, marital status, gender, age, place of residence (urban/rural), and district/city controls. The findings indicate that all variables significantly affect savings ownership. Expenditure, age, and the male dummy show negative coefficients, while education, marital status, and residence in urban areas display positive effects. Despite these influences, the proportion of savings holders in banking institutions remains relatively low in West Java. The study highlights the relevance of government policies, particularly during the Covid-19 pandemic, where channelling cash assistance through banks proved to be an appropriate and effective strategy.

Keywords: savings; banking institutions; savings ownership models; Household Preferences

ABSTRAK

Tabungan merupakan pendapatan sisa setelah konsumsi dan berkontribusi terhadap pertumbuhan ekonomi melalui investasi. Penelitian ini bertujuan untuk menganalisis preferensi menabung penduduk Jawa Barat, salah satu provinsi dengan jumlah penduduk terbesar di Indonesia. Data diperoleh dari SUSENAS tahun 2018 yang dipublikasikan pada tahun 2019 dan mencerminkan kondisi sebelum pandemi Covid-19. Model kepemilikan tabungan dikembangkan untuk menangkap preferensi menabung, dengan faktor penentu utama meliputi pengeluaran, pendidikan, status perkawinan, jenis kelamin, usia, tempat tinggal (perkotaan/perdesaan), serta variabel kontrol kabupaten/kota. Hasil penelitian menunjukkan bahwa seluruh variabel berpengaruh signifikan terhadap kepemilikan tabungan. Pengeluaran, usia, dan variabel dummy laki-laki menunjukkan koefisien negatif, sedangkan pendidikan, status perkawinan, dan tempat tinggal di wilayah perkotaan menunjukkan pengaruh positif. Meskipun demikian, proporsi pemilik tabungan di lembaga perbankan di Jawa Barat masih relatif rendah. Penelitian ini menyoroti relevansi kebijakan pemerintah, khususnya pada masa pandemi Covid-19, di mana penyaluran bantuan tunai melalui perbankan terbukti menjadi strategi yang tepat dan efektif.

Kata kunci: Tabungan; lembaga perbankan; model kepemilikan tabungan; preferensi rumah tangga

1. INTRODUCTION

Household savings are very important, not only to guarantee family expenses in the future, but also important for the country's economy. Savings are an important driver for a country's economic growth and are a prerequisite for the sustainability of the pension system and international trade balance. There are large differences in the accumulation of wealth and household savings in various countries, understanding these differences is very important, even the slightest change in the aggregate level of savings can influence a country's economic growth. Savings can be broadly defined as an increase in a person's net worth, because saving is a person's income after deducting consumption (**Feiveson, L 2019**).

The correlation between differences in the size of savings and interest rates in various countries has been well studied in several literatures where these differences are influenced by demographics, differences in income and growth rates of a country, social security systems, tax systems as well as savings markets and liberalization. Traditional economic interpretations to date have not succeeded in explaining differences in savings rates in each country. One hypothesis states that savings respond to certain cultural social norms. However, the following research has findings or empirical evidence that differ from the opinion above. Based on existing evidence, we find that cultural preferences are an important explanation for differences in saving behavior between countries and their relevance lasts for three generations. (**Costa-Font et al., 2018**). Savings is one of the most important economic variables that has an impact on the local and global environment.

Other research states the relationship between culture and financial literature which identifies a relationship between cultural attitudes towards money and financial practices, apart from that research results reveal that this relationship varies depending on the type of financial practice in question. (**Henchoz et al., 2019**). Other research states that there are differences in the percentage of saving between parts of the country that speak a language, where the German-speaking part has a higher percentage of saving compared to the French-speaking part (**Guin, 2017**).

Subsequent research found that cultural attributes play an important role in explaining why people in one country save more than people in other countries. Specifically it was found that as the level of uncertainty avoidance increases, the savings rate increases. People who avoid future uncertainty will retain more of their current resources to reduce future uncertainty. Apart from that, evidence was also found that the greater the collectiveness in society, the higher the savings rate.

The culture of a society is inherent in each member of society as part of their daily lives. Culture is a collection of activities that become the habits of a society. West Java is dominated by the Sundanese tribe, which is the second largest ethnic group in Indonesia after the Javanese. Sundanese culture is more likely to shop for something new easily, and enjoy looking for new products compared to Javanese (**Helmi, 2021**).

The Sundanese tendency to shop for new things shows that there tends to be a lot of money circulating in the goods market. Excess money in society is more likely to be used to buy new goods (**Triono, 2017**). The saving culture of Sundanese people tends to be smaller if you look at their shopping culture. Therefore, it is very interesting to examine how people's savings preferences are. Households that are not patient have a greater possibility of consuming now than saving for the future now (**Falk et al., 2015**).

Research with the central theme of the role of ethnicity on household savings in Indonesia shows the results that gender, location and level of education are variables that consistently influence household savings behavior in Indonesia in three survey waves. Meanwhile, for the ethnicity variable, only Sundanese, Batak and Bima-Dompu were able to significantly influence people's saving behavior in the three survey waves (**Ajija et al., 2020**). The results of the research show that financial literacy does not have a significant positive effect on students' personal financial management, while the variable hedonistic style has a positive but not significant effect. Spiritual intelligence has significant benefits and impact on student financial management. Hedonistic style, spiritual intelligence, and financial literacy all have a positive and significant influence on personal financial management (**Stefani Marina Palimbong et al., 2022**).

Service quality, efficiency, and reliability of e-banking services significantly influence customer satisfaction. In turn, customer satisfaction plays a mediating role between these service dimensions and customer retention (**Hadiyanto, et all 2022**). This means that better service quality and more reliable, efficient banking systems do not directly retain customers; instead, they first improve customer satisfaction, which then increases customer loyalty and retention. For banking institutions, dealing with a large number of customers is a major concern. It is essential to understand people's preference for becoming customers, as this knowledge is necessary for preparing strategies to increase the customer base.

This research aims to find out the savings preferences of West Javanese people in banking institutions before the pandemic occurred. Time was taken before the pandemic, to see the purity of people's preferences regarding saving in banking institutions. Because a lot of assistance from the government during the pandemic was launched in the form of savings in financial institutions. After the aid was disbursed, there was an increase in customers at financial institutions appointed by the government as cash aid distributors.

2. LITERATURE REVIEW

According to the Indonesia Banking Booklet 2023 published by the Financial Services Authority (OJK), "A bank is a business entity that collects funds from the public in the form of deposits and distributes them to the public in the form of credit and/or other forms in order to improve people's living standards." (OJK, 2023).

Bank Transformation in Indonesia: Strengthening Service Quality, Minimizing Regulation Through Trust Towards Superior Customer Value", the authors highlight the role of banks in building trust, ensuring development through financial intermediation, and providing services through digitalization and improved customer value. While the exact terms agent of trust, agent of development, and agent of service are not always explicitly mentioned, the conceptual framework reflects the same functions (**Lidiawan et all, 2024**). The main business of banking is to collect and distribute third party funds. Collection of funds in the form of deposits which is a source of bank funds. In distributing funds, banks should not merely obtain maximum profits for their owners, but their activities must also be directed at improving the standard of living of the community. (**Kholis, 2020**).

Customer preference is the attitude of customers who want a service or goods based on their ability, to give an assessment of satisfaction with what is offered or purchased, so that someone has a purchasing behavior attitude towards the service or goods they want (**Setiadi, 2019**).

Specific preferences for saving at financial institutions can be seen from several factors including customer knowledge, gender, age, education, and income(Afriani & Asandimitra, 2020). The gender ratio is a determining factor in saving preferences (**Mlage, 2024**). Age, household size, and financial planning horizon are significant demographic indicators that increase individuals' motivation to save (**Núñez-Letamendia, G. 2025**).Preference for saving is higher for retirement preparation and health conditions (**Alonso-García et al., 2017**), also depends on marital status and age at marriage (**Nie, 2020**). However, according to Nie (2020)Younger households save more than middle-aged households.

Women are more likely to save less and more likely to borrow (**Datta et al., 2017**). Different results were obtained from Afriani & Asandimitra's research (**Afriani & Asandimitra, 2020**) which states that gender, education, age and income do not influence savings decisions.

3. METODS

Savings Ownership Model

Based on several theories explained in the literature review, the researcher tried to develop a model. The savings ownership model is influenced by the amount of expenditure, education, work status, gender, age, marital status, place of residence, and status of the head of the family. The amount of expenditure is the respondent's expenditure in a month, created in the form of a natural log variable of expenditure. Education is created in a set of categories, where not attending school is the basis for other education categories. Other education itself is divided into elementary, middle school, high school, higher education, and postgraduate studies.

Work status is in the form of a dummy variable "work", where one is for those who work and zero for those who do not work. Gender is created in the dummy variable "male," where one is for men and zero for women. Marital status is formed in the dummy variable "married", where one is for married respondents and zero for unmarried respondents. The status of the head of the family is also included in the dummy variable "HS", where one is for respondents who are heads of the family and zero for those who are not.

Place of residence is created in the dummy variable "city", where one indicates the respondent lives in the city and zero for respondents who live in the village.

$$Saving_i = \beta_0 + \beta_1 work_i + \beta_2 ES_i + \beta_3 JHS_i + \beta_4 SHS_i + \beta_5 College_i + \beta_6 Post_i + \beta_7 age_i + \beta_8 man_i + \beta_9 married_i + \beta_{10} HS_i + \beta_{11} city_i + \beta_{12} LnExp_i + \delta X + \varepsilon$$

(1).

Equation (1) contains bivariate categories in its independent variables, so the appropriate analysis is logistic regression. If you use Ordinary Least Square (OLS) it can produce a savings data value of more than 1, even though the savings ownership variable has values of 0 and 1. Recent methodological studies argue against a single absolute sample-size cutoff (e.g., $n > 400$) for maximum-likelihood logistic regression; instead they recommend planning by events-per-variable (EPV) and by formal sample-size criteria that control model overfitting and prediction error (**Riley et al., 2019**)

In the logistic regression model, the estimation results are in the form of the natural log of the odds. Odds are obtained from the chance of having savings divided by the chance of not having savings.

$$\ln \left(\frac{P(saving)}{1-P(saving)} \right)_i = \beta_0 + \beta_1 work_i + \beta_2 ES_i + \beta_3 JHS_i + \beta_4 SHS_i + \beta_5 College_i + \beta_6 Post_i + \beta_7 age_i + \beta_8 man_i + \beta_9 married_i + \beta_{10} HS_i + \beta_{11} city_i + \beta_{12} LnExp_i + \delta X + \varepsilon \quad (2).$$

We generally cannot interpret the coefficients from logistic regression in equation (2) as in ordinary OLS regression. The estimated value is only to show the form of relationship between the independent and dependent variables, while the interpretation of the logistic regression model is seen in the Odd Ratio coefficient. Where the Odd coefficient can be obtained from

$$\text{Odds} = \left(\frac{P(saving)}{1-P(saving)} \right)_i = e^{\beta_0 + \beta_1 work_i + \beta_2 ES_i + \beta_3 JHS_i + \dots + \beta_{12} LnExp_i + \delta X + \varepsilon} \quad (3).$$

We can interpret this odds value. The odd value will be positive. If the relationship between the independent and dependent variables is a negative relationship, then the odd value will be smaller than 1. If the relationship between the independent and dependent variables is positive then the odd value will be greater than 1.

The steps required in multiple logistic regression are choosing the right model. Model selection begins by entering all independent variables into the model, then testing the bivariate model for each independent variable. Bivariate model testing can be done by means of tests or by simple logistic regression (if there are more than two independent categories). This test applies to categorical variables, both independent and dependent. If the independent variable is numeric and the dependent variable is categorical, an independent t test (if the conditions are met) or a Wilcoxon (if the conditions are not met) can be carried out. The criteria for entering the model is if the p-value is <0.25 in testing χ^2 .

If the model all contains significant independent variables, then the appropriate model selection has been made. Model selection is also shown by the R square value. The largest R square is considered the best model.

Data Collection

The 2018 National Socio-Economic Survey (SUSENAS) was used as data to answer the research objectives, because this year conditions occurred before the Covid-19 pandemic. SUSENAS is micro data collected annually by the Central Statistics Agency, aimed at illustrating development progress. SUSENAS collects data on the socio-economic sector at the national, provincial and district/city levels. SUSENAS data consists of indicators of socio-economic aspects such as population, education, health, poverty, finance and so on.

The 2018 SUSENAS sample was around 300,000 households nationally, and specifically for this research used 2018 SUSENAS data for West Java Province with 83,071 respondents in 23,603 families. With an age limit of over 18 years, the total sample size is 56,372 respondents. This research uses units at the individual level.

Ownership of savings in a bank is a dependent variable that uses dummy variable measurements. The value is one for respondents who have savings in the bank and zero for those who do not. The independent variables are expenditure, education, gender, work status,

age, criteria for area of residence, marital status, and status of head of family, and are controlled by district/city variables. Regency/city control variables are needed so that the impact of differences in residence location can be minimized.

4. RESULT AND DISCUSSION

Based on the results of the data processing, we can provide an overview of the respondents selected in the 2018 SUSENAS. The overview can be seen from gender, education level, area of residence, savings ownership, status in the household, and district/city where they live.

Table 1. Respondents Based on Education Level and Gender

Education	Gender		Total
	Man	Woman	
no school	3,669	5,019	8,688
elementary school	8,511	9,156	17,667
Junior High School	4,975	5,144	10,119
Senior High School	8,251	6,741	14,992
College	2,254	2,321	4,575
Post	209	122	331
Total	27,869	28,503	56,372

Source: SUSENAS 2018, West Java data

Respondents totalled 56,372 people with 27,869 men or around 49.4%, while the remaining 50.6% were women (Table 1). Based on the last level of education that respondents had, the largest was at elementary school level, amounting to 17,667 people or around 31.3%, while the smallest was at postgraduate education level, around 0.59%. Seeing this condition, the highest level of education in West Java is still relatively low, because it is still dominated by elementary school level education.

Table 2. Respondents Based on Place of Residence and Savings Ownership

Savings	Residence			Total
	Village	City		
No	14,705	22,428		37.133
Yes	4,086	15,153		19,239
Total	18,791	37,581		56,372

Source: SUSENAS 2018, West Java data

There are more respondents who live in cities than those who live in villages, around 66.67%. Based on savings ownership in banks, only around 34.13% of respondents had savings and the remaining 65.87% did not have savings before the Covid-19 pandemic. The probability of respondents living in cities and having savings in financial institutions is around 26.88% (15,153/56,372). Meanwhile, the probability of respondents living in villages and having savings in financial institutions is 7.2% (4,086/56,372). This shows that the West Java community's financial literacy is not high enough, especially for rural communities. Complete details can be seen in Table 2.

Table 3. Respondents Based on Gender and Savings Ownership

Gender	Savings Ownership		
	No	Yes	Total
Woman	19,705	8,798	28,503
man	17,428	10,441	27,869
Total	37,133	19,239	56,372

Source: SUSENAS 2018, West Java data

The proportion of male respondents who have savings is higher than women. The probability of men having savings is 18.52% (10,441/56,372), while the probability of women having savings is only 15.60% (8,798/56,372). The probability of women not having savings is 34.96% (19,705/56,372), while the probability of men not having savings is 30.92% (17,428/56,372). Based on this data, it can be seen that there are differences in savings ownership by gender. Complete numbers can be seen in Table 3.

Table 4. Respondents Based on Head of Family Status and Savings Ownership

Household Status	Savings Ownership		
	No	Yes	Total
Head of family	14,559	9,031	23,590
Family members	22,574	10,208	32,782
Total	37,133	19,239	56,372

Source: SUSENAS 2018, West Java data

Respondents with household status were divided into heads of families and family members. The number of respondents with the status of head of family is indeed smaller than that of family members, because it could be that in an household there is one head of family but there can be more than one family member. The probability of being the head of a family and having savings is 16.02% (9,031/56,372), while the head of the family and not having savings is 25.83% (14,559/56,372). The probability of family members having savings is 18.11% (9,031/56,372), while family members and not having savings is 40.04% (22,574/56,372). Complete data can be seen in Table 4.

Table 5. Respondents by Regency/City and Savings Ownership

Regency/City	Savings Ownership		
	No	Yes	Total
Bogor	2,052	892	2,944
Sukabumi	1,744	482	2,226
Cianjur	1,740	491	2,231
Bandung	1,838	780	2,618
Garut	1,979	521	2,500
Tasikmalaya	1,543	505	2,048
Ciamis	1,461	654	2,115
Brass	1,265	544	1,809

Cirebon	1,762	596	2,358
Majalengka	1,327	540	1,867
Sumedang	1,257	629	1,886
Indramayu	1,574	492	2,066
Subang	1,528	649	2,177
Purwakarta	1,206	557	1,763
Karawang	1,729	808	2,537
Bekasi	1,539	1,048	2,587
West Bandung	1,687	586	2,273
Pangandaran	1,080	478	1,558
Bandung	1,097	1,351	2,448
Bogor city	1,170	748	1,918
Sukabumi City	912	465	1,377
Cirebon City	808	583	1,391
Bekasi city	1,070	1,593	2,663
Depok City	1,072	1,359	2,431
Cimahi City	902	822	1,724
Tasikmalaya			
City	1,075	583	1,658
Banjar City	716	483	1,199
Total	37.133	19,239	56,372

Source: SUSENAS 2018, West Java data

West Java consists of 27 districts/cities, the average number of respondents is 3.7%, the largest number of respondents comes from Bogor Regency with 5.22%, and the smallest with 2.13% comes from Banjar City. The number of respondents who have savings in the bank is less than those who do not, conversely for Bandung City, Bekasi City and Depok City, respondents who have savings are more than those who do not have savings in the bank. Bekasi City has the highest proportion of people with savings, followed by Depok City and finally Bandung City. Complete data related to districts/cities can be seen in Table 5. The researcher determined the city of Bandung as the basis for the district-city control variable.

The solution to the model for equations 2 and 3 is shown in Table 6. The dependent variable is savings ownership, while the independent variables are all in equation 2. Column (1) is the result of the logit regression estimate, while column (2) is the result of the Odd ratio estimate. All independent variables significantly influence a person's savings ownership. The estimation also uses control variables in the form of districts/cities, where the city of Bandung is used as the basis.

Table 6. Results of Analysis of Savings Ownership Model for West Java Province

Dependent variable	(1)	(2)
Savings		
Independent Variable	Logit	Odd Ratio
expenditure	-0.272*** (0.0241)	,761*** (0.0184)
education		
elementary school	0.185*** (0.0385)	1,203*** (0.0464)
junior high school	0.737***	2,089***

	(0.0421)	(0.0879)
senior high school	1,806*** (0.0396)	6,083*** (0.2411)
College	3,488*** (0.0570)	32,706*** (1.8632)
post	4,824*** (0.324)	124,443*** (40.3536)
Work	0.659*** (0.0250)	1,933*** (0.0484)
man	-0.367*** (0.0283)	0.692*** (0.0196)
marry	0.284*** (0.0249)	1,328*** (0.0331)
Household status	0.649*** (0.0312)	1,914*** (0.0597)
Age	-0.00998*** (0.000901)	,990*** (0.0009)
City	0.350*** (0.0275)	1,419*** (0.0389)
Control Variables	Yes	Yes
Constant	1,005*** (0.204)	7,277*** (2,539)
Observations	56,372	56,372
Pseudo R-squared	0.2143	0.2143

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Based on Table 6, the expenditure variable has a negative logistic regression coefficient value, this indicates that the greater an individual's expenditure, the smaller the opportunity for someone to have savings. This is proven by the Odd ratio value being smaller than one. This condition is in accordance with consumption theory, when consumption is large, savings will be small.

The higher the level of education a person has, the greater the chance of having savings compared to people who have never received education. This is also in accordance with the theory of return on education, there is an impact of education on a person's income when they enter the world of work(**Psacharopoulos & Patrinos, 2018**).

People who work have a higher chance of having savings than people who don't work. This is because people who work will receive income. When consumption is less than income, people will save, according to economic theory. This finding aligns with the Life-Cycle Hypothesis, which suggests that working individuals save during their earning years in order to provide for consumption in retirement (**Long, B. S., & Nguyễn Tuệ, A. 2024**)

Woman are more likely than men to engage in both short-term and long term financial behaviors, indicating a higher propensity to save (**Long & Nguyen Tue 2024**) which concludes that in the short term women have a small percentage of savings. Agnew used data from the 2017 Consumer Finance Survey. Other research states that women tend to have a

smaller preference for saving in the short term, because women manage finances for their daily needs (**Agunsoye et al., 2022**).

Married people have a higher chance of having savings in the bank than unmarried people. A person with the status of head of the family has a higher chance of having savings than someone with the status of a family member. Those with a higher age have a slightly lower chance of having savings, as shown by the odds ratio value close to 1. Someone who lives in a city has a higher chance of having savings than someone who lives in a village. The logistic model is also controlled by city district variables in West Java, so that there is no bias due to differences that occur in city districts. The overall predicted estimates of the independent variables that contribute to the opportunity to have savings can be seen from the calculation results in Table 6.

Table 7. Logistics of Savings Ownership Model in West Java

classification	Truth		Total
	D	~D	
Have Savings (+)	9904	3949	13853
Don't Have Savings (-)	9335	33184	42519
Total	19239	37133	56372

The total classification value related to savings ownership and truth is 76.44% which is obtained from the value $(9904+33184)/(56372)$. The detailed results of the classification with classification prediction calculations are shown in Table 7. The total value of this classification indicates that this savings model has quite high accuracy, namely 76.44%. Apart from that, model accuracy can also be seen from the ROC (Receiver Operator Characteristic) curve. The ROC curve in logistic regression is used to determine the best limit value in predicting whether an observation is in the category of having savings or not. The ROC curve is shown in Figure 1 which shows that the model has outstanding or quite high accuracy, namely 79.13% when viewed from outside the ROC area.

Table 8. Classification of Savings Owners in Savings Models in West Java

Sensitivity	$Pr(+ D)$	51.48%
Specificity	$Pr(- \sim D)$	89.37%
Positive predictive value	$Pr(D +)$	71.49%
Negative predictive value	$Pr(\sim D -)$	78.05%
False + rate for true ~D	$Pr(+ \sim D)$	10.63%
False - rate for true D	$Pr(- D)$	48.52%
False + rate for classified +	$Pr(\sim D +)$	28.51%
False - rate for classified -	$Pr(D -)$	21.95%
Correctly classified		76.44%

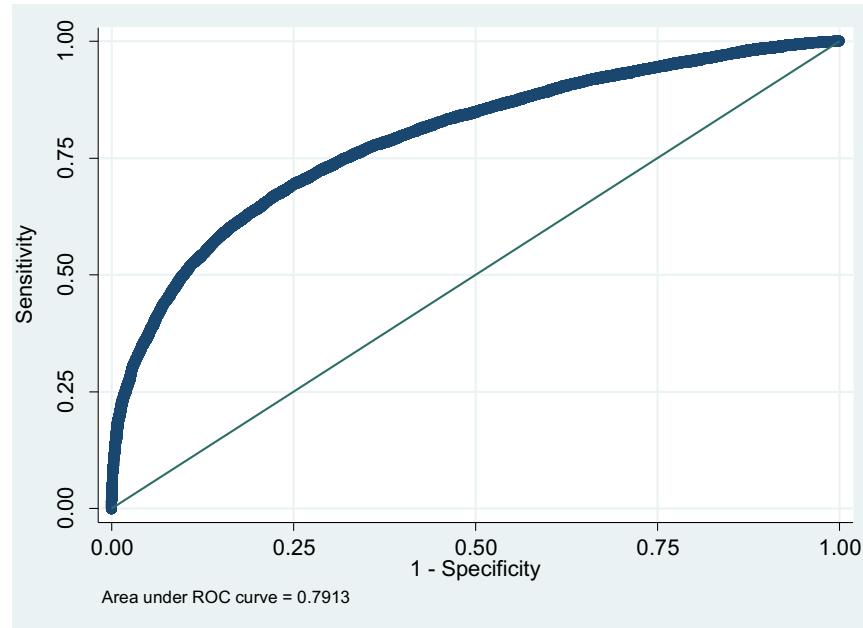


Figure 1. ROC curve

5. CONCLUSION

The West Java community's small preference for saving at banking institutions is based on 2018 SUSENAS data. The factors that influence the opportunity to own savings are proven to be significant. It is very appropriate when the cash assistance program from the government during the Covid-19 pandemic is distributed through financial institutions, so it is hoped that people's savings preferences will increase.

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