ANALYSIS OF THE EFFECT OF USE DIGITAL PAYMENT ON PROBABILITY OF CONSUMPTION SEBELAS MARET UNIVERSITY STUDENTS

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Abstract

This research is to find out whether there is a digital payment that the possibility of student consumption will be increasingly wasteful or become more efficient and choose to save money. The respondents of this study are active students of Sebelas Maret University and have used digital payments in transactions. The number of samples taken in this study were 100 respondents. This research analysis technique uses quantitative methods using logistic regression. The variable used in the study is the probability of consumption as the dependent variable. Monthly income, issued using monthly digital payments, the amount of money saved per month, gender, age, and level of education as independent variables. The results of this study are Sebelas Maret University students in using digital payments will be more consumptive, and significant variables on consumption expenditure are expenses, expenses, and gender in using digital payments.

Keywords: Consumptive, Use Of Digital Payments, Logistic Regression, Students, Saving.

JEL classification: D19, C21

1. INTRODUCTION

The population continues to increase while the land area does not increase is a challenge for planners in planning optimal land use patterns and land management which of course still pays attention to economic, ecological, and sustainability functions (Turok & McGranahan, 2013; Mpanga, Tronstad, Guo, LeBauer, & Idowu, 2021). Land development will be very important when the function of the land will change to other functions. The higher the community's economic activity, the more land use will increase. Unfortunately, this is not followed by land cultivation as a provider of environmental services. Thus, the increase in the use of environmental services is not proportional to the maintenance of environmental quality, the benefits derived from environmental goods and services are limited because there are some limitations in the value of environmental goods and services (Geng, Tian, Sarkis, & Ulgiati, 2017; Freire-González, Decker, & Hall, 2017). The decline in productivity is felt because productive land is getting narrower due to land conversion, namely rice fields, and the global issue of increasing degraded land which has the potential to turn into critical land. One of the causes of the process of critical land is the increase in population using land as agricultural land by not paying attention to the principles of management of critical land for soil and water (Fang, et al., 2022; Mulyani & Las, 2008). The increase in degraded land can occur due to the characteristics of the land that are vulnerable to any hazards, whether due to fire, pests, shifting cultivation, encroachment, overgrazing, or cultivation errors. Critical land occurs due to changes in land use from agricultural or forest land to non-agricultural or built-up areas so that the water absorption area is reduced which causes

degraded land, drought, or critical clean water in the dry season, landslides, and floods in the rainy season (Gurgel, Reilly, & Blanc, 2021; Fang, et al., 2022). A combination of market, policy, and management failures, such as ambiguous property rights, distorted market prices, non-competition, and negative incentives that influence farmers' perceptions of the costs and benefits of controlling degraded land, is causing critical land to worsening (Tesfahunegn, 2018; Hermans & McLeman, 2021; Adenle, Boillat, & Speranza, 2022).

Several studies have shown an increase in the function of land which causes land degradation (Mirzabaev, Goedecke, Dubovyk, Djanibekov, Le, & Aw-Hassan, 2016; Indrihastuti, Murtilaksono, & Tjahjono, 2016; Tadesse, Suryabhagavan, Sridhar, & Legesse, 2017). The increase in population and economic activity has led to an increase in the function of land conversion. Then the cost of the inefficiency of degraded land as a provider of environmental services (Börner, et al., 2017; Pratiwi, Purnomo, Usman, & Gravitiani, 2018; Santoso & Ma'ruf , 2020). For example, estimating the annual cost of degraded land in Central Asian villages, due to land use and field changes between 2001 and 2009 is about 6 billion USD, mostly due to desert degradation (4.6 billion USD), deforestation (0.3 billion USD) USD) and abandoned agricultural land (0.1 billion USD) (Mirzabaev, Goedecke, Dubovyk, Djanibekov, Le, & Aw-Hassan, 2016).

There have been several attempts to quantify the costs of land degradation and several other studies have undertaken the valuation of environmental services, by measuring direct and indirect use values (Pratiwi, Purnomo, Usman, & Gravitiani, 2018; Admasu W. , Passel, Minale, Tsegaye, Azadi, & Nyssen, 2019; Arata, Diluiso, Guastella, Pareglio, & Sckokai, 2021). Every research shows community participation in reducing critical or degraded land's impact.

2. RESEARCH METHOD

The types of data from this research are primary and secondary data, primary data obtained from distributing questionnaires in the form of income, savings, expenditure, age, education level, probability of consumption and gender. Secondary data sources were obtained from Sebelas Maret University academics in the form of data on the undergraduate student population of Sebelas Maret University.

The survey from the research is by direct observation of the object, this object is an active undergraduate student at Sebelas Maret University who has used itDigital Payment. The interviews for this research used a questionnaire distributed via Google Form to undergraduate students at Sebelas Maret University who had used itDigital Payment. A questionnaire is a number of questions and statements to be answered by respondents, and the results will be given directly to the researcher to be used as data.

The population of this study was active undergraduate students at Sebelas Maret University and the population was 23,715. The analytical method of this research uses logistic regression analysis, a statistical technique widely used to assess the relationship between variables in a study.

The logistic model in research can be expressed in the following function:

$$In (P1 : 1 - P1) = Y1 = \beta1 + \beta2PSSt + \beta3TSSt + \beta4 JPDPt + \beta5 UMt + \beta6 GMt + \beta7 TPMt + ui$$

Where:
Y = Probability of Consumption Pattern
PSS = Monthly Income
TSS = Savings for a Month
JPDP = Total Digital Payment Expenditure
UM = Student Age
GM = Student Gender

TPM = Student Education Level

The significance test in this logit model can use the Z or Wald statistical test. This test is useful for finding out whether the independent variable will influence the dependent variable in the logistic regression model. You can do this by squaring the Z statistical value to get the Wald statistical test value. If probability chisquares smaller than the significance level used, the result is significant, and vice versa. The hypothesis used is:

H = The variables Income, Expenditures, Savings, Gender, Age and Education Level are thought to have no influence and are not significant on the Probability of Student Consumption Patterns variable.

Ha = The variables Income, Expenditures, Savings, Gender, Age and Education Level are thought to influence the Probability of Student Consumption Patterns variable significantly.

3. RESULTS AND DISCUSSION

With 11 Faculties and 1 Postgraduate, UNS has 6 programs ranging from Doctoral programs to Vocational programs. The total number of study programs owned by UNS is 179 study programs. The number of students is 37,062. Shows that 70% of respondents definitely use itDigital Payment in one month, but currently only 15% of respondents in this study do soDigital Payment as the main means of payment.

Odd Ratio

The odds ratio can be calculated for each independent variable, namely:

1. Income Variable = Students with higher incomes will use digital payments 0.9999967 times more often than students with lower incomes
2. Savings Variable = Students with higher savings will use digital payments 1.0000050 times more often than students with lower savings
3. Spending = Students with higher digital payment spending will use digital payments 1,0000129 times more often than students with lower savings
4. Age = Students of an older age will use digital payments 2.7096256 times more often than students of a younger age
5. Gender = Female students will use digital payments 13.6513250 times more often than male students
6. Education Level = Students with a higher semester level will use digital payments 0.5171324 times more often than students with a lower semester level

Coefficient Regression

The coefficient of determination value (R^2) from McFadden of 0.311282, which means that the consumption pattern that influences the probability of Eleven March University students using digital payments is explained by the logit regression mode of 31.12% and the remaining 68.88% is explained apart from other variables outside the model.

L Ratio Likelihood Test Result

Test the feasibility of the model through the statistical likelihood ratio (LR) test as follows:

H = The independent variable is considered insignificant to the dependent variable.

Ha = The independent variable is thought to be significant to the dependent variable.

The calculated chisquares value is:

LR = 2 (LLURE – LLR)

= 2 (-17.46856– (-25.36389))

= 2 (7.89533)

= 15.79066

The critical value of chi-square at alpha 5% and df 6 = 12.59. The calculated chi square is greater than the critical chi square. The results reject the null hypothesis and the model is feasible.

Variabel	Coeficient	Std Error	z statistic
Income	-0.00000329	0.00000143	-2,309413
Savings	0.000005	0.0000052	0,961538
Production	0.0000129	0.00000541	2,387147
Age	0.996181	0.855552	2,498030
Gender	2,612186	1,045698	1,164372
Level of Education	-0.65904	0.582039	-1,132296

H = Income, Expenditure, Savings, Gender, Age and Education Level variables are thought to have no effect and are not significant on the Probability of Student Consumption Patterns variable. Ha = The variables Income, Expenditures, Savings, Gender, Age, and Level of Education are thought to have a significant and influential effect on the Probability of Student Consumption Patterns variable.

With alpha 5% = 0.05 = 1.645

1. Income Variable: Shows that the income variable Z is calculated at 2.3006 more than Za namely 5% = 1.645 so rejects H0 This means that the independent variable, namely income, influences the dependent variable, namely the probability of consumption patterns. The income variable has a significant influence on the probability of consumption patterns in using digital payments because through income consumers or students can make more transactions, and consumers or students do not have to go to an ATM machine to withdraw money. cash.

2. Savings Variable: Shows that the calculated savings variable Z is 0.9615 less than Za namely 5% = 1.645 so we accept Ha This means that the independent variable, namely savings, does not affect the dependent variable, namely the probability of consumption patterns. The savings variable does not have a significant influence on the probability of consumption patterns in using digital payments because consumers or students do not have good financial planning so the savings rate among students is still low.

3. Expenditure Variable: Shows the calculated expenditure variable Z is 2.3844 more than Za namely 5% = 1.645 so rejecting H means that the independent variable, namely expenditure, influences the dependent variable, namely the probability of consumption patterns. The expenditure variable significantly influences the probability of consumption patterns using digital payments because students spend a lot via digital payments to fulfill their consumption patterns.

4. Age Variable: Shows the age variable Z, the calculation is 1.1643 less than Za namely 5% = 1.645 so we accept Ha This means that the independent variable, namely age, does not affect the dependent variable, namely the probability of consumption patterns. The age variable does not provide a significant level on the probability of consumption patterns in using digital payments because students who access digital payments to fulfill their consumption patterns do not know whether they are younger or older.

5. Gender Variable: Shows that the gender variable Z is calculated at 2.4981 more than Za namely 5% = 1.645 so rejecting H means that the independent variable, namely Gender, influences the dependent variable, namely the probability of consumption patterns. The gender variable significantly influences the probability of consumption patterns in using digital payments because students, especially women, use digital payments more as a means of payment to fulfill their consumption.

6. Education Level Variable: Shows that the education level variable Z is calculated at 1.1322 less than Za namely 5% = 1.645 so we accept Ha This means that the independent variable, namely education level, does not affect the dependent variable, namely the probability of consumption patterns. The Education variable is not significant because most students are currently open to technological developments, especially in digital payments. This can be reflected in 4.7 which explains the distribution of the respondent study groups in this study. This table shows that these results represent students from the Class of 2015 - 2019.

Probability of Students Using Digital Payment

To find out students' decisions regarding usedigital payment using the independent variables savings level, income, expenditure, gender, education level, and age produces the following logistic regression:

Consumption_Probability = 1-@Clogistic(-(-14.4147979997 - 3.2921792114e-06*Income + 5.0034636378e-06*Savings+ 1.29232387466e-05*Expenditure + 0.996180963484*Age+2.61218570036*Gender- .659040095353*Education_Level))

Probability of Consumptive Students Using Digital Payments:

Based on the equation, researchers can predict the probability that students will consume*digital payment.* For example, if an 8th semester student is 21 years old with an income level of 1,100,000, a savings level of 170,000, and an expenditure level of 235,000, then the probability of consuming*digital payment* as follows:

Consumption_Probability = 1-(-(-14.4147979997 - 3.2921792114e-06* 1,100,000 + 5.0034636378e-06* 170,000 + 1.29232387466e-05* 235,000 + 0.996180963484* 21 + 2.61218570036* 1 -0.659040095353*8))
Consumption_Probability = 4.8683

Predicted value of consumption probability:

The probability of consuming digital payments for a 21 year old 8th semester student with an income level of 1,100,000, a savings level of 170,000, and an expenditure level of 235,000, is equal to0,9923722093

Probability of Students Not being Consumptive in Using Digital Payments
Probability of Not Consuming = 1 –Pi
= 1 − 0,9923722093
= 0,0076277907
Meanwhile, the probability of not consuming digital payments is 0.0076277907

4. CONCLUSIONS

Based on the results of research on analysis of consumption patterns that influence the probability of Sebelas Maret University students using digital payments, the conclusion is:

1. Influence of independent variables on dependent variables: Income, Expenditure and Gender variables significantly influence the probability of consumption patterns in using

digital payments. The savings and age variables are positive and not significant. The Income, Expenditure and Gender variables are positive and significant. The only variable that has a negative and insignificant value is Education Level.

2. Factors that influence the probability of consumption patterns of UNS students are Income, Expenditure and Gender variables.

3. The impact there isDigital Payment for UNS students: Income, Expenditure and Gender variables have a significant influence on the probability of consumption patterns in using digital payments. The savings and age variables are positive and not significant. The Income, Expenditure and Gender variables are positive and significant. The only variable that has a negative and insignificant value is Education Level.

5. REFERENCES

Adiyanti, Arsita Ika. (2015). Pengaruh Pendapatan, Manfaat, Kemudahan Penggunaan, Daya Tarik Promosi, dan Kepercayaan Terhadap Minat Menggunakan Layanan E-Money. Malang: Universitas Brawijaya

Arango, Carlos, Kim P. Huynh, Leonard Sabetti. 2015. "Consumer payment choice: Merchant card acceptance versus pricing incentives". Canada: Bank of Canada.

Arango – Arango, Carlos A., Yassine Bouhdaoui, David Bounie, Martina Eschelbach & Lola Hernandez. 2018. Cash remains top-of-waller! International evidence form payment from diaries. Department of Applied Economics (APEC), Vrije Universiteit Brussel, Pleinlaan 2, B-1050 Brussels, Belgium.

Grover, Purva. Arpan Kumar Kar,p. Vigneswara Ilavarasan. 2017. Understanding Nature of Social Media Usage by Mobile Wallets Service Provides – An Exploration through SPIN Framework. Indian Institute of Technology Delhi.

Hadjar, Ibnu. 2017. Regresi Logistik: Menaksir Probabilitas Peristiwa Variabel Binari. Semarang: Jurnal Phenomenon.

Harlan, Johan. 2018. Analisis Regresi Logistik. Depok: Gunadarma.

Hidayat, Ahmad. 2006. Upaya Meningkatkan Penggunaan Alat Pembayaran Non Tunai Melalui Pengembangan E-Money. Working Paper Bank Indonesia.

https://www.bi.go.id/id/statistik/sistem-pembayaran/uangelektronik/contents/transaksi.aspx di akses pada tanggal (23 Oktober)

https://dailysocial.id/post/fintech-report-2018 di akses pada tanggal (23 Oktober)

Yang, Qing, Chuan Pang, Liu Liu, David C. Yen, J. Michael Tarn. 2015. "Exploring consumer perceived risk and trust for online payments: An empirical study in China's younger generation". Amerika Serikat: School of Economics and Business.