The Effect of Happiness, Education, Food Security, and Access to Information and Communication Technology on the Welfare of Indonesian Society

Zul Fikri Abdul Rozak*1, Mustofa²

¹Master of Economics Education Study Program, Universitas Negeri Yogyakarta, Indonesia ²Lecturer of Master of Economics Education Department, Universitas Negeri Yogyakarta,

Indonesia

zulfikri.2023@student.uny.ac.id¹, <u>mustofa@uny.ac.id</u>²

Address: Jl. Colombo No.1, Karang Malang, Caturtunggal, Depok District, Sleman Regency, Special Region of Yogyakarta 55281 Author Corresprodence : zulfikri.2023@student.uny.ac.id*

Abstract: This study aims to determine: the influence of happiness on the welfare of the Indonesian people, the influence of education on the welfare of the Indonesian people, the influence of food security on the welfare of the Indonesian people, the influence of access to information and communication technology on the welfare of the people in Indonesia, Simultaneous tests show that each independent variable has an effect on the dependent variable. This study uses secondary data from the Indonesia Family Life Survey Wave 4 (IFLS-4) and wave 5 (IFLS-5) surveys in 2007 and 2014 which will be used as panel data in this study. The number of panel samples in IFLS-4 and IFLS-5 is 8,170 household members. The data to be analyzed includes happiness, education, food security, and access to information and communication technology. This study uses the Ordered Probit analysis method with the help of the Stata-17 application. The results of the study show that each variable has a different influence. Happiness has a positive and significant influence on the welfare of the Indonesian people, food security has a positive and significant influence on the welfare of the Indonesian people, access to information and communication technology show that each variable has a positive and significant influence on the welfare of the Indonesian people, food security has a positive and significant influence on the welfare of the Indonesian people, and Simultaneous tests show that each independent variable has an influence on the dependent variable.

Keywords : access technology, education, food security, happiness, well-being

1. INTRODUCTION

Basically, achieving public welfare is the main goal of every economic development and has been stated in the fourth paragraph of the 1945 Constitution which states:

" Then, to form a Government of the State of Indonesia which protects all the Indonesian people and all of Indonesia's territory and to advance public welfare, to improve the life of the nation ..." (Government of Indonesia, 1945)

Various development efforts have been carried out by the government with the main aim of achieving public welfare through various development programs.

Normatively, if we refer to the 1945 Constitution and Pancasila, the concept of welfare in Indonesia is in accordance with development draft welfare - which means welfare is more than just fulfilling material needs . However, in its implementation, the macroeconomic development targets in the National Medium-Term Development Plan (RPJMN), for example, are only focused on accelerating growth and increasing per capita income. As a country that believes in One God, Indonesia has ideological values, where the fulfillment of welfare in

Indonesia should be closer to the spiritual aspect which is more subjective. This subjective perception is expected to be measured by the happiness index (Cahyadi, 2017).

By measuring community well-being, policymakers can better understand local needs and gain insight into ineffective programs, as well as local strengths and unique qualities of programs. (Calcagnini, 2019). The welfare of the Indonesian people is the responsibility of the state, for this reason the government has launched many various program poverty alleviation or improving people's welfare. However, the programs that have been carried out are still not effective enough considering the condition of Indonesian society, many of whom are still below the welfare line. Therefore, efforts are needed for other more effective policies to significantly improve welfare. (Saputri et al., 2023).

Community welfare is influenced by economic and non-economic factors, economic factors include food security seen from community food and non-food consumption, employment seen from the labor force participation rate (TPAK) and the open unemployment rate (TPT), and consumption patterns seen from the average per capita expenditure per month according to type of expenditure (food and non-food). While non-economic factors include education, access to information and communication technology, and happiness (BPS, 2023c)

. Happiness is a factor that influences well-being as seen from the happiness index which represents a subjective evaluation of a person's current overall life status . Happiness can include a person's emotional responses, character, sense of accomplishment, personal well-being, satisfaction with work or interpersonal relationships (Pei-Shan Li, 2022) . Measuring the level of happiness is something that is subjective. subjective. So the Happiness Index in this writing can be said as a depiction from Indicator Subjective Well - being used to complement the Objective Indicators. In each domain essential life will be measured objectively in its factual conditions, then followed by subjective measures in the form of assessments of the level of satisfaction related to objective conditions in that aspect of life. In other words, happiness level is a general description of the level of satisfaction resident towards the entire domain of human life that is considered essential by taking into account a person's feelings and meaning of life (Loppies et al., 2023) .

Based on data from *the World Happiness Report* 2024 (WHR) written by (Helliwell et al., 2024) Indonesia is ranked 80th in the list of the happiest countries in the world in 2024 with an average score of 5,568 points. Indonesia's happiness index ranking is still far behind several ASEAN countries . The happiness index value in ASEAN countries is Singapore at 30th place , the Philippines at 53rd place and Malaysia at 59th place . When viewed from this situation,

the value of Indonesia's Happiness Index is still lagging behind neighboring countries. This condition shows that the happiness index of Indonesian society is still low.

Supporting data is presented regarding happiness through the development of the happiness index in Indonesia from 2017 to 2021 of 71.49, thus there is an increase of 0.80 from 2017 which was previously 70.69, with the achievement of dimensions that make up the happiness index covering three dimensions, namely, the life satisfaction dimension index of 75.16 with personal life satisfaction of 70.26 and social life satisfaction of 80.07, then for the feeling dimension index of 65.61 and for the meaning of life dimension index of 73.12 (BPS, 2021).

Education is a factor that influences welfare as seen from the quality of human resources in a region that influences economic growth and can be influenced by several things, such as education . Human resources' access to education will affect the quality of the output produced , The higher the level of education of the community, the higher the quality of production produced. (Yusuf, 2020) .

Supporting data from the Central Statistics Agency report shows that the Average Length of Schooling in 2023 reached 9.13 years or equivalent to grade 9 of junior high school/equivalent. This achievement has increased compared to the previous year (2022) which was 9.08 years . (BPS, 2023d) . The Expected Length of Schooling value in 2023 reached 13.15 years which has increased compared to 2022 which was 13.10 years (BPS, 2023a) .

Food security is a factor that influences welfare seen from per capita monthly expenditure according to type of expenditure (food and non-food). The proportion of food expenditure in a household can be an indicator of household food security, s the greater the household expenditure on food, the lower the household food security. According to its type, consumption is divided into food consumption and non-food consumption. Every month, the average Indonesian population spends 665.8 thousand rupiah (50.14%) on food consumption and 662.0 thousand rupiah (49.86%) on non-food consumption (BPS, 2023c).

Supporting data is presented based on the Province IKP ranking, the five provinces with the best scores are Bali (87.65), Central Java (84.80), DKI Jakarta (83.80), South Sulawesi (83.36) and West Sumatra (83.22). While the five provinces with the lowest scores are Papua (42.27), West Papua (47.95), North Maluku (62.34), Maluku (64.37), and Riau Islands (65.10) (BPN, 2023).

Access to information and communication technology (ICT) affects welfare seen in the last five years, the use of Information and Communication Technology (ICT) in Indonesia has shown rapid development. The impact of the COVID-19 pandemic requires people to solve

problems through the digital sector, automatically leading people into the era of digital transformation. The increase in internet users allows people to take advantage of digital innovation and disruption products. This increase can be seen from the increase in the percentage of households accessing the internet over the past three years (2020-2022), from 78.18 percent in 2020 to 82.07 percent in 2021 and 86.54 percent in 2022. (BPS, 2023c).

When compared to other countries, Indonesia's internet speed from *Speedtest Global Index data* is in 120th position out of 179 countries, and 103rd position out of 138 countries for cellular network speed. One of the factors that causes Indonesia's position to still lag behind other countries is Indonesia's vast and diverse geographical conditions. This condition is also a challenge in realizing equitable regional development, especially in the field of information technology and telecommunications. (Permatasari et al., 2024).

Supporting data is presented regarding the development of the Information and Communication Technology indicator, the most rapid of which is seen in the use of the internet in households, which reached 86.54 percent in 2022. The growth in internet use in households is also followed by the growth of the population who have mobile phones, in 2022 reaching 67.88 percent . Household computer ownership in 2022 experienced a slight decline to 18.04 percent . Household landline telephone ownership has decreased from year to year, in 2018 the percentage of households that owned or controlled landlines was around 2.61 percent, dropping to 1.34 percent in 2022 (BPS, 2022) .

Previous research on welfare has not been found much, but there are several studies such as research conducted by (Rahimah & Rahmania, 2024) with the results of the research findings showing that although the level of happiness of fishermen in Karangantu is quite high, their level of economic welfare is low, this is due to income fluctuations, lack of access to adequate health services, and limited supporting infrastructure. Meanwhile, research from (Saputri et al., 2023) with the results of the education variable has a positive effect on household welfare in Java with a coefficient value of 0.006 where every additional 1 year of education has an effect of 6% in increasing household welfare in Java at a significance level of 1%.

Research from (Ndayambaje, 2020a) with the results that in the field of education, research findings reveal that people with higher education are happier and more satisfied than those with lower education. Based on the results of the study, the government, policy makers, and stakeholders need to encourage people to be involved in education so that they can increase their happiness. Further research orientations and recommendations are discussed for researchers and policy makers in the future to improve people's welfare . Research (Tiwari, 2019) with results showing that positive income shocks, although temporary, increase the

amount of food consumed by the poorest households and overall subjective well-being among the poorest program recipients. It was also found that poor households were more likely to invest in agricultural and non-agricultural businesses, which in turn helped them maintain higher levels of food consumption and overall satisfaction several months after the program ended.

Research from (Rohman & Darmaningrum, 2024) with the results of the study that In the end, it can be said that coastal communities will gain many benefits from digital technology. Coastal communities can use digital technology to improve connections, economic opportunities, and access to basic services such as health and education if they have fair access, adequate education, and knowledge of its potential. Governments, businesses, and coastal communities must work together to ensure that digital technology is used responsibly, with respect for local culture, and that no one is left behind in this digital transformation to achieve the best results. Digital technology has the potential to significantly improve the welfare of coastal communities and reduce social disparities if used correctly.

2. RESEARCH METHODS

Types of research

This study uses a quantitative method with an Ordinal regression approach. Data were obtained from the results of the *Indonesia Family Life Survey Wave 4* (IFLS-4) *and Wave 5* (IFLS-5) which will be used as panel data in this study. IFLS is a household panel data survey in Indonesia that began in 1993 (IFLS-1) until 2014 (IFLS-5).

Time and Place of Research

Especially for qualitative research, the time and place of the research need to be written clearly (for quantitative research, this is also necessary).

Target/Research Subject

In sample management, this study uses *Household data* from *the Indonesia Family Life Survey. wave 4 and wave 5* using hhid07 (IFLS-4), hhid14 (IFLS-5), and pidlink codes. Then, management will be carried out with the help of the Stata 17 application to create panel data obtained by the number of panel samples totaling 8,170 households that will be used in this study.

Data, Instruments, and Collection Techniques

a). Data

The data used in this study is secondary data from the results of the *Indonesian Family Life Survey* (IFLS) waves 4 and 5 in 2007 and 2014. or referred to as IFLS-4 and IFLS-5 conducted by *RAND Labor and Population . Indonesian Family Life Survey* (IFLS) is a survey conducted by the RAND corporation which has been conducted six times. The first survey was conducted in 1993/1994 by the RAND corporation together with the demographic institute and the University of Indonesia. Furthermore, the IFLS-2 survey was conducted in 1997 and 1998 respectively, IFLS-3 in 2000 in collaboration with the Population Research Center and Gadjah Mada University, IFLS-4 in 2007/2008 in collaboration with the Population and Policy Studies Center of Gadjah Mada University and the Meter Survey, IFLS-5 was last conducted in 2014-2015 which was supervised by *the Institutional Review Boards* (IRB) in the United States and has been further reviewed ethically in the IFLS-3, IFLS-4, and IFLS-5 surveys by Gadjah Mada University.

In conducting the analysis of the dependent variable, namely welfare, IFLS-5 provides survey results in book 3a, subjective welfare section (SW00). While the independent variables are happiness in book 3a, subjective welfare section (SW12), education variables in book K, household member list section (AR16), food security variables in book 1, consumption section (KS4TYPE) (KS15) for food and in book 1, consumption section (KS2TYPE) (KS06) for nonfood, and access to technology in book 3a, employment section (TK26A11).

The data collection technique of this study is from literature sources and archives related to factors that influence community welfare, happiness, education, and access to technology obtained by downloading questionnaire data, codebooks, and data sets from *the Indonesia Family Life Survey Wave 4* (IFLS-4) *and Wave-5* (IFLS-5). The data used in this study are secondary data in the form of data results from *the Indonesia Family Life Survey* (IFLS) regarding welfare, happiness, education, food security, and access to technology available with open access on the Rand.org website or https://www.rand.org/well-being/social-and-behavioral-policy/data/FLS/IFLS.html.

b). Data Analysis Techniques

The data analysis technique used in this study is the *Ordered Probit analysis technique*. Researchers use the *Ordered Probit analysis technique* because the dependent variable is ordinal in nature with more than two categories in a certain order.

Prerequisite Test

a. Multicollinearity Test

The multicollinearity test is to see whether or not there is a high correlation between the independent variables in a model . If there is a high correlation between the independent variables, then the relationship between the independent variables and the dependent variables is disrupted. The multicollinearity test uses the help of the Stata 17 application using the VIF test. The *cutoff* value commonly used for show existence multicollinearity is a Tolerance value ≤ 0.10 or equal to VIF value ≥ 10 (Indri. & Gerry., 2022) . Thus, if the Tolerance value ≤ 0.10 or equal to the vif value ≥ 10 , the data is infected with Multicollinearity problems.

b. Heteroscedasticity Test

Heteroscedasticity is a condition where the disturbance factor does not have Variants Which The same . Heteroscedasticity is a phenomenon estimator regression biased, However Variants No efficient (the more big population or sample, the more big variants) . Detection chart with pattern random identify assumption Heteroscedasticity fulfilled. The heteroscedasticity test was carried out using the help of the Stata 17 application using the *Breusch–Pagan/Cook–Weisberg test* . Data is said to have passed the heteroscedasticity test if the Prob value> chi² is more than 0.05. If the Probability value does not exceed 0.05, the data is infected with the heteroscedasticity problem.

Hypothesis Testing

Simultaneous Test Likelihood Ratio Test (LR Test)

In conducting the Simultaneous test using the *Likelihood Ratio Test (LR Test)*. The *Likelihood Ratio Test (LR Test)* is distributed $X^{2}_{(a,r)}$ where the degree of freedom *r* is the number of parameters at levels 1 and 2, with the following hypothesis:

H₀ = $Y_{10} = Y_{20} = ... = Y_{PI} = Y_{0I} = ... = Y_{0Q} = 0$, which means there is no influence of the independent variable on the dependent variable.

H_a = At least $Y \neq 0$, which means that there is at least one influence of one independent variable on the dependent variable (Saragih et al., 2020).

In the Simultaneous test carried out with the help of Stata-17, the Prob Significance value will be seen > chi², where if the value is below 0.05, it means that ha _{is} accepted.

Partial Test

Partial test is done using *Wald test. Wald test* is used to determine which independent variables have an influence on the dependent variable. The hypothesis tested is:

H $_0 = Y = 0$, which means there is no influence of the independent variable on the dependent variable.

H _a = $Y \neq 0$, which means that there is an influence of the independent variable on the dependent variable (Saragih et al., 2020).

The results of the Wald test were carried out with the help of the Stata-17 application and were said to be significant if the value was below 0.05, which means that Ha was accepted. The results of the Wald Test can be used for decision making in research on significant variables that the variables are important and need to be considered in decision making.

Goodness-of-Fit Test

Goodness-of-Fit test is used to assess how well the estimated model fits the observed data. In the context of *Ordered Probit*, this test helps determine whether the model used can explain the distribution of ordinal data well.

3. RESEARCH RESULTS AND DISCUSSION

This study uses household samples and is a respondent from *the Indonesia Family Life Survey*. (IFLS) waves 4 and 5 organized by *the RAND Corporation* in Indonesia in 2007 and 2014. For more details can be seen in the form of the following descriptive statistical table :

Variable	2007						2014			
	Obs	Mean	Std. dev.	Min	Max	Obs.	Mean	Std. dev.	Min	Max
The middle hunter	8.17 0	1,909	0.55 3	1	3	8.17 0	1,967	0.605	1	3
Happiness	8.17 0	2,034	0 .40 2	1	4	8.17 0	1,974	0.506	1	4
Education	8.17 0	3,970	1.46 1	1	9	8.17 0	4,244	1,453	1	9
Food security	8.17 0	63,088	42.15	0,00 1	100	8.17 0	58,152	41.68	0.015	100
Technology Access	8.17 0	1.22 9	0 ,697	1	4	8.17 0	1,326	0.830	1	4

 Table 1. Descriptive Statistics

From Table 1, the number of observers, mean, standard deviation, minimum value and maximum value of the IFLS-4 and IFLS-5 data are obtained.

Welfare	2007		2014	
	Freq	(%)	Freq	(%)
Insufficient to meet needs	1,655	20.24	1,789	20.03
Just enough to meet the needs	5.6 04	68.62	4.886	63.24
More than enough for needs	911	11.14	1,495	16.74

Table 2. Household Welfare

Total	8.17 0	100.00	8.170	100.00

The welfare variable was taken from the questionnaire "Regarding the living conditions of the household when interviewed or surveyed, from 2007 to 2014, with possible conditions: insufficient for my needs (1), only sufficient for my needs (2), more than sufficient for my needs (3). Household members tended to be in a state of prosperity from 2007 to 2014. From these data it can be concluded that household members tended to be more prosperous from 2007 to 2014.

	Welfare								
	2007			2014					
Happiness	Not enough (%)	Enough (%)	More than enough (%)	Not enough (%)	Enough (%)	More than enough (%)			
Very happy	14.23	59.15	26.63	10.09	53.76	36.15			
Нарру	17.15	72.33	10.52	16.08	68.82	15.10			
Not happy	52.62	40.43	6.95	65.28	31.23	3.49			
Very Unhappy	69.70	30.30	0.00	74.74	23.16	2.11			

Table 3. Happiness Based on Household Welfare

From Table 3 regarding happiness based on household welfare from 2007 to 2014 with possible conditions: not enough for my needs (1), just enough for my needs (2), more than enough for my needs (3). From these data it can be concluded that only happy household members tend to be in a state of prosperity from 2007 to 2014.

	Welfare					
	2007			2014		
Education	Not enough (%)	Enough (%)	More than enough (%)	Not enough (%)	Enough (%)	More than enough (%)
Not/NotYetAttendingSchool	31.16	65.14	3.70	36.03	54.05	9.92
Elementary School Equivalent	27.47	65.27	7.26	28.79	60.56	10.65
JuniorHighSchoolorEquivalent	18.17	71.50	10.33	22.25	63.72	14.03

Table 4. Education Based on Household Welfare

High School or Equivalent	13.68	73.40	12.92	13.39	68.06	18.55
Diploma	7.88	68.48	23.64	5.76	59.39	34.85
College	6.55	66.28	27.17	6.43	61.74	31.83

From the table above about education based on household member welfare from 2007 to 2014 with education levels including: No/not yet in school (1), Elementary School or equivalent (2), Junior High School or equivalent (4), Senior High School or equivalent (5) University Diploma (D1, D2, D3) (6), and University College (7). Household members at the education level (Elementary School, Junior High School, Senior High School, Diploma, and College) were in a prosperous state from 2007 to 2014. Household members who were not or did not attend school were in a poor state from 2007 to 2014. From these data it can be concluded that only educated household members tend to be more prosperous from 2007 to 2014.

Table 5. Food Security Based on Household Welfare

	Welfare	Welfare							
Category Panga n	2007			2014					
	Not	Enough	More than	Not	Enough	More than			
	enough	(%)	enough	enough	(%)	enough			
	(%)	(70)	(%)	(%)		(%)			
Food Security	18.82	70.13	11.05	19.18	63.52	17.31			
Food	21.23	67.56	11.21	20.78	62.96	16.26			
Vulnerability	21.23	07.50	11.41	20.70	02.90	10.20			

Based on the Table on Food Security based on household welfare from 2007 to 2014 with possible conditions: Food Secure (1), and Food Vulnerable (0). Household members with the food secure category in a prosperous state from 2007 to 2014 experienced an increase in welfare. Household members with the food vulnerable category in a prosperous state from 2007 to 2014 experienced a decrease in welfare. From these data it can be concluded that household members with the food secure category experienced an increase in welfare and food vulnerable experienced a decrease in welfare from 2007 to 2014.

	Welfare	Welfare								
Technology Access	2007			2014						
	Not enough (%)	Enough (%)	More than enough (%)	Not enough (%)	Enough (%)	More than enough (%)				
Never	22.09	68.82	9.09	22.68	63.12	14.20				

Table 6. Technology Access Based on Household Welfare

Sometimes	7.37	66.05	26.58	6.13	67.78	26.09
Often	5.38	67.26	27.35	5.76	62.96	31.28
Always	5.46	68.10	26.44	6.30	60,42	33,28

From the table presented about technology access based on household welfare in 2007 and 2014 with possible conditions: Always (4), Often (2), Sometimes (3), and Never (1). Household members who work without using technology in the less prosperous group experienced an increase from 2007 to 2014. Household members who work using technology in the prosperous group experienced an increase in welfare from 2007 to 2014. Household members who work without using technology in the prosperous group experienced a decrease in welfare from 2007 to 2014. From these data, it can be concluded that household members who do not use technology experience a decrease in welfare from 2007 to 2014.

 Table 7. Multicollinearity Test

Variable	VIF
Happiness	1.04
Education	1.53
Food security	1.00
Access Technology	1.25

cutoff value commonly used to indicate multicollinearity is a Tolerance value ≤ 0.10 . or equal to VIF value ≥ 10 (Indri. & Gerry., 2022). In this research data, the largest multicollinearity data was obtained at a VIF value of 1.53. So it can be concluded that the data is not infected with multicollinearity problems.

 Table 8. Heteroscedasticity Test

chi ² (1)	3.36	
$\text{Prob} > \text{chi}^2$	0.067	

Based on the results of the Heteroscedasticity test using the *Breusch-Pagan test*, a (p) value of 0.067 was obtained. This value is greater than the significance rate of 0.05, which means that the research data passes the heteroscedasticity test or there is no heteroscedasticity problem.

Table 9. Likelihood Ratio 7	Test (LR Test)	i
-----------------------------	----------------	---

LR chi2(8)	912.83
Prob > chi2	0.0000

Based on the Likelihood Ratio (LR Test), the P value (0.0000) is obtained, which means it is smaller than 0.05. It can be concluded that each independent variable (X) together or simultaneously affects the dependent variable (Y).

Variables	Ζ	P>z	
Happiness	-18.22	0,000	
Education	13.87	0,000	
Food security	-3.40	0.001	
Access Technology	7.48	0,000	

	Table	10.	Wald	test
--	-------	-----	------	------

Based on the Wald Test, the results show that several variables are more than the significance value of 0.05. These variables include gender, marital status and domicile variables. It can be concluded that the variables of gender, marital status and domicile do not have a significant influence and do not need to be considered on the welfare variable of the Indonesian people.

 Table 11. Goodness-of-Fit Test

	Pseudo R ²	0.0673
--	-----------------------	--------

Based on the analysis results, the value is known Pseudo R 2 of 0.0673. This means that the independent variable is able to explain changes in the dependent variable by 6.73 %, while the remaining 93.27 % is explained by other variables not proposed in this study.

Welfare	Coefficient of efficiency	Std. Err.	Ζ	P > z
Happiness	-0.621	0,034	- 18.22	0,000
Education	0,156	0,011	13.87	0,000
Resilience Food	- 0 .65 6	0,193	-3.40	0.001
ICT Access	0.154	0.021	7.48	0,000
Prob > chi2	0.0000			
LR chi2(8)	912.83			
Pseudo R2	0.0673			

 Table 12. Ordered Probit Analysis

The results of the analysis show that each variable has a different influence. For more details, see the following:

The Influence of Happiness on the Welfare of Indonesian Society

Based on the analysis shows that Happiness has a significance value (p) of 0.000 and a Marginal Effect with a value of 0.160, then there is a positive and significant influence between the happiness variable and the community welfare variable (Y). Based on the Marginal Effect

value with a value of 0.160, then in a certain period of time an increase in the happiness variable will increase welfare by one level with a probability value of 0.16%.

The results of this test are inconsistent because the test results on the Marginal Effect value have a positive and significant value with relevant research that supports a negative and significant relationship between happiness and well-being, namely research from (Rahimah & Rahmania, 2024) with the results of the research findings showing that although the level of happiness of fishermen in Karangantu is quite high, their level of economic welfare is low .

The Influence of Education on the Welfare of Indonesian Society

The analysis in this study shows that the Education variable with a significance (p) of 0.000 and a Marginal Effect with a value of -0.040, then there is a negative influence between the education variable and the community welfare variable (Y). Based on the Marginal Effect with a value of -0.040, then in a certain period of time the decrease in the education variable will decrease welfare by one level with a probability value of 0.04%.

The results of this test are not in line with the test results because the Marginal Effect has a negative and significant value, relevant research that supports a positive and significant relationship between education and welfare, namely research from (Ndayambaje, 2020a) which also examines education with results in the field of education, research findings reveal that people with higher education are happier and more satisfied than those with lower education.

The impact of food security on community welfare

The results of the analysis show that in the Food Security variable with a significance (p) of 0.001 and a Marginal Effect with a value of 0.169, there is a positive relationship between the food security variable and the community welfare variable (Y). The Marginal Effect with a value of 0.169 means that in a certain period of time, increasing food security will increase welfare by one level with a probability value of 0.17%.

This is in line with relevant research because the test results on the Marginal Effect have a positive value with relevant research from (Setiawan et al., 2023) with the results of remittances affecting welfare through routine expenditures and purchases of non-productive assets such as food, clothing, housing, and luxury goods. This expenditure can improve the standard of living and quality of life of the recipient.

The Impact of Technology Access on the Welfare of Indonesian Society

Based on the analysis shows that technology access with a significance (p) of 0.000 and a Marginal Effect with a value of -0.040, then there is a negative influence between the technology access variable and the community welfare variable (Y). With a Marginal Effect

value of -0.040, then in a certain period of time the decline in technology access will reduce welfare by one level with a probability value of 0.04%.

The results of this test are not in line with the test results because the Marginal Effect has a negative value, relevant research that supports a positive and significant relationship between technology access and welfare, namely research from (Rohman & Darmaningrum, 2024) which also examines the use of technology with the results in the end, it can be said that coastal communities will gain many benefits from digital technology. Digital technology has the potential to significantly improve the welfare of coastal communities and reduce social inequality if used properly.

1. CONCLUSION AND SUGGESTIONS

Conclusion

The happiness variable has a positive and significant effect on the welfare of Indonesian society. Happy household members are more likely to be in a prosperous state from 2007 to 2014 and unhappy household members are more likely to be in a poor state from 2007 to 2014.

The education variable has a negative and significant effect on the welfare of Indonesian society. Educated household members are more likely to be prosperous from 2007 to 2014 and household members who are not or have not attended school are more likely to be less prosperous from 2007 to 2014.

Food security variables have a positive and significant effect on the welfare of Indonesian society. Household members with food secure categories experienced an increase in welfare and food vulnerable experienced a decrease in welfare from 2007 to 2014.

The variable of technology access has a negative and significant effect on the welfare of Indonesian society. Household members who use technology experience an increase in welfare and household members who do not use technology experience a decrease in welfare from 2007 to 2014.

Based on simultaneous or joint analysis, it is concluded that at least one independent variable has an effect on the dependent variable.

Suggestion

Based on the conclusion of the research results on the variables of happiness, education, food security, and access to information and communication technology are important variables that affect welfare. Therefore, the government with efforts to improve welfare in development programs such as the National Medium-Term Development Plan (RPJMN), poverty alleviation programs, and improving the welfare of the Indonesian people needs to pay

attention to happiness, education, food security and access to technology so that they can be in accordance with the Constitution and Pancasila in order to achieve general welfare for the Indonesian people.

BIBLIOGRAPHY

- Aditya, R. (2019). The Influence of Education Level and Occupation of Pregnant Women to the use of Maternal and Child Health (MCH) Handbook. *Indonesian Journal of Obstetrics* and Gynecology, 7(4), 267–270. https://doi.org/10.32771/inajog.v7i4.978
- Almukaddem, L. (2022). An analytical study of food security indicators for farm households in the coastal area of Syria. *Journal of Aridland Agriculture*, *8*, 14–19. https://doi.org/10.25081/jaa.2022.v8.7129
- Ammar, A. (2020). Covid-19 home confinement negatively impacts social participation and life satisfaction: A worldwide multicenter study. *International Journal of Environmental Research and Public Health*, 17 (17), 1–17. https://doi.org/10.3390/ijerph17176237
- Astika, R., & Harudu, L. (2023). Factors affecting the level of family welfare. *Journal of Geography Education Research*. http://jppg.uho.ac.id/index.php/journal/article/view/ 94
- Bieda, A. (2019). Happiness, life satisfaction and positive mental health: Investigating reciprocal effects over four years in a Chinese student sample. *Journal of Research in Personality*, 78, 198–209. https://doi.org/10.1016/j.jrp.2018.11.012
- Bień, A. (2020). Female sexuality at reproductive age as an indicator of satisfaction with life descriptive cross-sectional survey. *Annals of Agricultural and Environmental Medicine*, 27(4), 599–604. https://doi.org/10.26444/aaem/114176
- BPN. (2023). Index Resilience Food 2023 https://drive.google.com/file/d/1P5KIdhdmZkVLWIpC82TaCH_3rCxQaLG6/view?usp =drive_link
- BPS. (2021). Index Happiness 2021 A. https://www.bps.go.id/id/publication/2021/12/27/ba1b0f03770569b5ac3ef58e/indexkepuasan-2021.html
- BPS. (2022). Telecommunication Statistics in Indonesia 2022. In BPS-Statistics Indonesia (Issue 112). https://www.bps.go.id/publication/2020/12/02/be999725b7aeee62d84c6660/statistiktelekomunikasi-indonesia-2019.html
- BPS. (2023a). [New Method] Expected Years of Schooling, 2022-2023 . https://www.bps.go.id/id/statistics-table/2/NDE3IzI=/-metode-baru--harapan-lama - school.html

compared-to-the-previous-year--73-77--.html

- BPS. (2023c). *Indicator Welfare People* https://www.bps.go.id/id/publication/2023/11/06/7807339c2dfaed0ca8e0beaa/indikatorkesejahteraan-rakyat-2023.html
- BPS. (2023d). Education Statistics 2023. In *Central Bureau of Statistics* https://www.bps.go.id/id/publication/2022/11/25/a80bdf8c85bc28a4e6566661/statistik-pendidikan-2022.html
- Cahyadi, D. (2017). Analysis of welfare measurement in Indonesia. Scientific Journal .
- Calcagnini, G. (2019). A well-being indicator for the Italian Provinces. *Social Indicators Research*, 142 (1), 149–177. https://doi.org/10.1007/s11205-018-1888-1
- Carpi, T. (2022). A Japanese subjective well-being indicator based on twitter data. *Social Science Japan Journal*, 25(2), 273–296. https://doi.org/10.1093/ssjj/jyac002
- Cruz-Martínez, G. (2020). A Bottom-up picture of intra-national welfare regimes: The case of marginalised communities in Puerto Rico. *Journal of International and Comparative Social Policy*, 36(2), 175–199. https://doi.org/10.1080/21699763.2018.1526696
- Cuesta, J., & Leone, M. (2020). Humanitarian crises and adolescent well-being: knowledge, gaps, and prospects. *Journal of Economic Surveys*, 132. https://doi.org/10.1111/joes.12339
- Dam, VAT (2023). Associations between parent-child relationship, self-esteem, and resilience with life satisfaction and mental wellbeing of adolescents. *Frontiers in Public Health*, 11 . https://doi.org/10.3389/fpubh.2023.1012337
- Darmawan, AR (2022). The influence of macroeconomic indicators and population education on unemployment rates in districts/cities in Riau Province year 2011-2020 . http://repository.unpas.ac.id/60089/
- Eha, J. La. (2024). Analysis of the influence of education level on community welfare using indicators of the national population and family planning agency. *Journal of Geographical Sciences and Education*. https://journal.pubsains.com/index.php/jgs/article/view/82
- Euchner, J. (2021). Marshall McLuhan and the next normal. *Research Technology Management*, 64 (6), 9–10. https://doi.org/10.1080/08956308.2021.1974777
- Gallegos, D. (2023). Food security definition, measures and advocacy priorities in high-income countries: a Delphi consensus study. *Public Health Nutrition*, 26 (10), 1986–1996. https://doi.org/10.1017/S1368980023000915
- Ghina, A. A., & Sukarno, S. (2021). Household finances and social comparison: determinants of financial well-being in Indonesia. *Journal of Socioeconomics and Developmen*, 4(1), 81–93. https://doi.org/https://doi.org/10.31328/jsed.v4i1.2223
- Guijarro-Garvi, M. (2022). Education as a dimension of human development: A provinciallevel education index for Ecuador. *PLoS ONE*, 17(7).

https://doi.org/10.1371/journal.pone.0270932

- Guo, Q. (2023). A global indicator to track well-being in the silver and golden age. *Social Indicators Research*, *169*(3), 1057–1086. https://doi.org/10.1007/s11205-023-03195-6
- Hasbi, M. Z. N. (2023). Human development index from the islamic perspective: roles of taxation, zakah, and health and education expenditures. *Jurnal Ekonomi Malaysia*, 57(1). https://doi.org/10.17576/JEM-2023-5701-08
- Helliwell, J. F., Layard, R., Sachs, J. D., Neve, J. De, Aknin, L. B., & Wang, S. (2024). World Happiness Report.
- Herrero, C. (2019). Population structure and the Human Development Index. *Social Indicators Research*, *141* (2), 731–763. https://doi.org/10.1007/s11205-018-1852-0
- Indri., F., & Gerry., H. (2022). The Effect of Company Size and Market Concentration on the Quality of Financial Reports in Consumer Goods Industry Sector Companies Listed on the Indonesia Stock Exchange in 2016-2020. *Journal of Management Science, Economics* and Entrepreneurship, 2 (2), 236–252. https://doi.org/10.55606/jimek.v2i2.242
- Jagermeyr, J. (2020). A regional nuclear conflict would compromise global food security. *Proceedings of the National Academy of Sciences of the United States of America*, 117 (13), 7071–7081. https://doi.org/10.1073/pnas.1919049117
- Jusniati, J. (2021). The Influence of the Use of Information and Communication Technology (Laptop) and the Development of Teaching Aids on Teacher Performance [repository.uiad.ac.id]. http://repository.uiad.ac.id/id/eprint/ 632/1/THESIS_JUSNIATI.pdf
- Kalamiyah, I. (2023). Application of hierarchical clustering multiscale bootstrap on education indicators at high school level in East Java Province . etheses.uin-malang.ac.id. http://etheses.uin-malang.ac.id/59266/
- Kubiszewski, I. (2022). Toward better measurement of sustainable development and wellbeing: A small number of SDG indicators reliably predict life satisfaction. *Sustainable Development*, *30* (1), 139–148. https://doi.org/10.1002/sd.2234
- Lapian, A. L. C. P. (2023). The effect of government expenditure on education and health on human development index in boven digoel district. *Journal for ReAttach Therapy and Developmental Diversities*, 6(4), 294–300. https://api.elsevier.com/content/abstract/scopus_id/85159936753
- Lindblom, A. (2020). Dispositional optimism, entrepreneurial success and exit intentions: The mediating effects of life satisfaction. *Journal of Business Research*, 120, 230–240. https://doi.org/10.1016/j.jbusres.2020.08.012
- Liu, C. (2023). Measurement of China's Human Development Index and analysis of its influencing factors from the perspective of new development concept. *Social Indicators Research*, 167 (1), 213–268. https://doi.org/10.1007/s11205-023-03105-w

- Loppies, C., Matdoan, MY, Loklomin, SB, & Wattimena, AZ (2023). Analysis and classification of the level of community happiness based on Provinces in Indonesia with a statistical approach. *Journal of Mathematics, Statistics, and Its Applications*, 02 (01), 33–46. https://doi.org/https://doi.org/10.30598/parameterv2i01pp33-46
- Luthfiana, N., Mantulu, MR, & ... (2024). Employee empowerment through well-being programs: increasing happiness and commitment at work. *DEDICATION*. https://doi.org/https://doi.org/10.32332/22fwpd17
- Makombe, G. (2023). The food security concept: Definition, conceptual frameworks, measurement and operationalisation. *Africa Development*, 48 (4), 53–80. https://doi.org/10.57054/ad.v48i4.5574
- Metwally, E. (2024). Assessing citizen satisfaction indicators for urban public services to enhance quality of life in Sharm el-Sheikh. *Ain Shams Engineering Journal*. https://doi.org/10.1016/j.asej.2024.102841
- Micaliski, E. L. (2024). The influence of the municipal human development index on the development of educational, income or leisure sports policies in Brazil. *Retos*, *51*, 962–969. https://doi.org/10.47197/RETOS.V51.101375
- Mozgovoy, V. (2019). Internal development as access strategy to information and communication technology in electronic human resource management for sustaining employee well-being. In *IT Information Technology* (Vol. 61, Issue 5, pp. 265–272). https://doi.org/10.1515/itit-2019-0018
- Mulia, R. A., & Saputra, N. (2020). Analisis faktor-faktor yang mempengaruhi kesejahteraan masyarakat Kota Padang. *Jurnal El-Riyasah*. https://doi.org/http://dx.doi.org/10.24014/jel.v11i1.10069
- Muqsith, MA (2022). Technological determinism and human extension. *Adalah*, 6 (1), 76–84. https://doi.org/10.15408/adalah.v6i1.26573
- Nandini, D., & Afiatno, BE (2020). Determinants of subjective well-being: Evidence of urban Indonesia. Journal of Development Economics . https://doi.org/https://doi.org/10.22219/jep.v18i1.11687
- Ndayambaje, E. (2020a). Marital status and subjective well-being: Does education level take into account? *Educational Horizons*, *39* (1), 120–132. https://doi.org/10.21831/cp.v39i1.29620
- Ndayambaje, E. (2020b). The moderating effects of marital status on the relationship between extraversion personality trait and subjective wellbeing of indonesian adults. researchgate.net. https://www.researchgate.net/profile/Edmond-
- Padmanabhanunni, A. (2021). The loneliness–life satisfaction relationship: The parallel and serial mediating role of hopelessness, depression and ego-resilience among young adults in south africa during covid-19. *International Journal of Environmental Research and Public Health*, 18(7). https://doi.org/10.3390/ijerph18073613

Pei-Shan Li. (2022). Development and assessment of the validity and reliability of the short-

form life satisfaction index (lsi-sf) among the elderly population. *Journal of Personalized Medicine*, *12*(5). https://doi.org/10.3390/jpm12050709

- Pemerintah Indonesia. (1945). Undang-Undang Dasar Negara Republik Indonesia 1945. https://www.mkri.id/public/content/infoumum/regulation/pdf/UUD45 ASLI.pdf
- Peng, C. (2021). Expanding social, psychological, and physical indicators of urbanites' life satisfaction toward residential community: A structural equation modeling analysis. *International Journal of Environmental Research and Public Health*, 18(1), 1–25. https://doi.org/10.3390/ijerph18010004
- Pradana, RS (2021). The influence of access to information and communication technology on economic growth in Banten province in 2015-2019. *Policy Journal*. https://ejournal.bappeda.bantenprov.go.id/index.php/jkpd/article/view/114
- Pratama, R. A., Tamara, F. H., & ... (2020). Happiness: An approach to measure economics of well-being. 5th Sriwijaya Economics. https://doi.org/10.2991/aebmr.k.200520.056
- Preece, C. (2020). A return to the wild: root exudates and food security. In *Trends in Plant Science* (Vol. 25, Issue 1, pp. 14–21). https://doi.org/10.1016/j.tplants.2019.09.010
- Priambodo, A. (2023). The impact of access and infrastructure, use, and expertise of information and communication technology on household telecommunications consumption. *JIMEK: Scientific Journal of Economics Students* . https://ojs.unik-kediri.ac.id/index.php/jimek/article/view/4453
- Rahimah, & Rahmania, EAB (2024). Analysis of the level of happiness and welfare of fishermen in Karangantu Kasemen, Serang City . *1* (3), 11–15. https://jipiti.technolabs.co.id/index.php/pkm/article/view/16/18
- Ratana-Ubol, A. (2021). Community network development for integrating non-formal education and informal education in schools. *Kasetsart Journal of Social Sciences*, 42 (3), 558–563. https://doi.org/10.34044/j.kjss.2021.42.3.16
- Rohde, L. (2020). Framing holistic indoor environments: Definitions of comfort, health and well-being. *Indoor and Built Environment*, 29 (8), 1118–1136. https://doi.org/10.1177/1420326X19875795
- Rohman, MI, & Darmaningrum, KT (2024). Utilization of digital technology in improving the welfare of coastal communities. *Selasar KPI: Reference for Communication and Preaching Media*, 4 (1), 30–40. https://ejournal.iainu-kebumen.ac.id/index.php/hallway
- Ross, D. A. (2020). Adolescent well-being: a definition and conceptual framework. *Journal of Adolescent Health*, 67 (4), 472–476. https://doi.org/10.1016/j.jadohealth.2020.06.042

Ruggeri, K. (2020). Well-being is more than happiness and life satisfaction: A

multidimensional analysis of 21 countries. *Health and Quality of Life Outcomes*, 18 (1). https://doi.org/10.1186/s12955-020-01423-y

- Salam, FA, Yuliarto, H., & Ariestika, E. (2021). Physical activity and subjective well-being in old age in Indonesia. *Sports Area Journal*, 6 (3), 358–366. https://doi.org/https://doi.org/10.25299/sportarea.2021.vol6(3).6948
- Saputri, S., Puspitasari, R., Hayati, K., & Hajar, I. (2023). The influence of socio-economic factors on household welfare in Java. *Journal of Accounting, Management, and Policy Planning*, *1* (1), 1–10. https://doi.org/10.47134/jampk.v1i1.8
- Saragih, MT, Inayah, AW, Nooraeni, R., Aprilio, M., Sinsyi, MM, & Aprilia, YR (2020). Application of multilevel binary logistic regression on labor force participation in Central Java Province in 2018. *Eigen Mathematics Journal*, 3 (1), 35–44. https://doi.org/10.29303/emj.v3i1.60
- Sarra, A. (2020). A spatial composite indicator for human and ecosystem well-being in the Italian urban areas. *Social Indicators Research*, *148* (2), 353–377. https://doi.org/10.1007/s11205-019-02203-y
- Setiawan, H., Handra, H., & Ariyanto, E. (2023). Internal remittances and consumption: Implications for household welfare in Indonesia. *Journal of Informatics Economy Business*. https://doi.org/https://doi.org/10.37034/infeb.v5i4.654
- Simanjuntak, M. V, & Simanjuntak, TD (2023). The relationship between socioeconomic and demographic status and subjective well being in Indonesia in 2014-2015. Cross Sectional Study. *Journal of Social Humanities*, 14 (2), 187. https://doi.org/10.30997/jsh.v14i2.9969
- Solhaug, A. K. (2023). Changes in life satisfaction among unaccompanied asylum-seeking and refugee minors who participated in teaching recovery techniques (TRT). *Child and Adolescent Psychiatry and Mental Health*, *17*(1). https://doi.org/10.1186/s13034-023-00595-x
- Sujarwoto, S. (2021). Development as happiness: A multidimensional analysis of subjective well-being in Indonesia. *Economics and Sociology*. https://www.ceeol.com/search/article-detail?id=974782
- Tiwari, S. (2019). Long-term effects of temporary income shocks on food consumption and subjective well-being. *The Journal of Development Studies*. https://doi.org/10.1080/00220388.2018.1464144
- Urzúa, C. M. (2024). An Oddity In The h u man development index. *Investigación Economica*, 83 (327), 55–79. https://doi.org/10.22201/fe.01851667p.2024.327.85909
- Wijaksono, RA, Khasanah, RD, Kamal, AW, Muhammad, L., Fatmala, ZM, Muwaffaq, FA (2023). The impact of BLU spending on national welfare and economy. *Journal of Treasury Management*, 4, 158–176. https://doi.org/10.33105/jmp.v4i2.500
- Wiryopranoto, S., Herlina, N., D., M., & Tangkilisan, YB (2017). Ki Hajar Dewantara's Struggle from Politics to Education. In *National Awakening Museum, Directorate General of Culture, Ministry of Education and Culture* (Vol. 1).

- Wulandari, G., Kautsar, A., Suardi, I., & ... (2023). Can the level of well-being buy happiness? *Journal Economy And* https://doi.org/10.55981/jep.2023.1972
- Yin, R., Lepinteur, A., & Clark, A.E. (2021). Life satisfaction and the human development index across the world. *Journal of Cross-Cultural Psychology*, 54 (2). https://shs.hal.science/halshs-03467218
- Yusuf, MZ (2020). The influence of education and HDI on economic growth in the Special Region of Yogyakarta. *Journal of Economics and Education*, 19 (1), 25–38.
- Zulfa, AA, Assayuti, MJ, Septiana, MP, Bhakti, MTP, Ma'arif, MS, & Apriliani, A. (2023). Analysis of poverty levels and household welfare ladder. *Karimah Tawhid*, 2 (4), 839– 848. https://ojs.unida.ac.id/karimahtauhid/article/view/9685%0A https://ojs.unida.ac.id/karimahtauhid/article/download/9685/3930.