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## An Analysis of the Determinants of Household Consumption Expenditure and Poverty in Indonesia

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**ABSTRACT:** *The main question of the research that is examined in the research is what the determinants of household consumption expenditure and poverty in Indonesia are. For this purpose, six key variables were selected which includes, household consumption expenditure, level of gross national income (GNI), level of population, lending interest rate, unemployment rate and also global financial crises. However, paper specifically attempted to conduct data analysis on the Indonesia; hence data of Indonesia was collected from World Bank Data centre. Data for the Indonesia was available for the period of 1990 to 2019. To determine stationarity of the data, Augmented Dickey-fuller (ADF) test was conducted. The ADF revealed that data was non-stationary and to resolve the issue of unit root, second difference of the variables resolved the issue and tests were conducted on second difference. Furthermore, instead of using the ordinary least square (OLS) regression, autoregressive distributed lag model (ARDL) was preferred. The bound test reveals that there is long-run effect means cointegration present among the variable; hence the household consumption expenditure could be used to predict or estimate the household consumption and poverty in long-run. Meanwhile, ARDL results has suggested that there is no short-run effect of any of the regressors on the regressand household consumption expenditure and poverty.*

**Key words:** *Household Consumption, Poverty*

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### 1. Introduction

Household consumption expenditure is the consumption expenditure made by individual or resident households to fulfil their needs such as food, transport, clothing, energy, housing service, health, durable goods and on miscellaneous services (Aregbeshola & Khan, 2018). In emerging countries, consumption expenditure has become the greatest element of Gross Domestic Product (GDP) (Lekobane & Seleka, 2017). The poverty data related to Indonesia Asian Development Bank (2020) that there is 9.4% of the population live their lives below the line of national poverty in 2019. Moreover, the ratio of the employed population is also decreased with the time which is 10.4% in 2013 to 4.3% in 2019 with less than USD 1.90 purchasing power parity a day. Conversely, the rapid decrease in foreign demand for goods within the time of financial disaster directs towards reduced profits concerning revenues leveraged by a majority of Asian countries. Therefore, most of the Asian countries alter and improve their strategies and economic policies for the betterment and creation of different sources for economic growth (Demissie & Kasie, 2017). This is one of the major reasons behind the execution of this research in deliberation to Indonesia. This research intricate various determinant related to the household consumption expenditure and poverty which help in the examination of and direct to cater to the problem of the study. In a direction to increase the national demand, domestic production and manufacturing of a product are emphasised by the companies where both public and private industries are involved.



The greatest economy in South Asia, Indonesia which has an assorted archipelago nation which is more than 300 ethnic groups and has plotted extraordinary economic development since disabling the Asian financial disaster of the 1990s. Currently, Indonesia is the world's 4th most crowded nation, the world's 10<sup>th</sup> greatest economy in relation to parity of buying power and the participant of G-20. A developing lower-middle-income nation, Indonesia has made a massive increase in reduction of poverty, spiteful the rate of poverty by more than 50% since the year 1999 to 9.4% in the year 2019 (World Bank Website, 2020). The findings of this research are useful for the government of Indonesia so that they can structure the better plan for the people in deliberation to decrease the poverty and have suitable consumption pattern even for a normal people. Conversely, this research also has theatrical importance which is used by the researchers in their similar studies. The major aim of current research is to analyse the determinants of household consumption expenditure and poverty in Indonesia. To fulfil this aim the first objective of this study is related to identity the related factors related to household consumption expenditure and poverty. Similarly, to conceptualise that factors in relation to the phenomenon and assess their related importance and challenges in consideration to Indonesia. The research given by Heshmati, Maasoumi, and Wan (2019) undertakes the similar research in consideration to India. The other research proposed by Onoka, Onwujekwe, Hanson, and Uzochukwu (2011) is also related to household consumption expenditure but have a major emphasis on health expenditure. Therefore, the rationale of the current study is that it is related to Indonesia and examined based on different determinants of household consumption expenditure and poverty. The determinants used in this research are the log level of population, Gross National Income (GNI), lending interest rate, the unemployment level in a country, and general government total expenditure in a country that further justifies the distinctiveness of this research.

The main question of the research that is examined in the research is given below:

*What are the determinants of household consumption expenditure and poverty in Indonesia?*

## 2. Literature Review

Alleviation of poverty has been the goal of every country which strengthen the policies of the country. Moreover, the investment in human capital is to increase the productivity of labour is one of the major objectives of the countries which leads them to fulfil their goal (Sharma, Han, & Sharma, 2019). There is an availability of voluminous literature related to household consumption. The major emphasis on consumption-relied poverty and unidirectional income. In the current period, increased focus has been given to multidimensional poverty that is also associated with consumption-based poverty. The distinction between both the cases is made through the difference of urban versus rural and emerging versus emerged countries. That is why the selection is also made amongst the relative and absolute lines of poverty along with the variable and fixed relative poverty lines (Fernández-Ramos, Garcia-Guerra, Garza-Rodriguez, & Morales-Ramirez, 2016; Musakwa & Odhiambo, 2019).

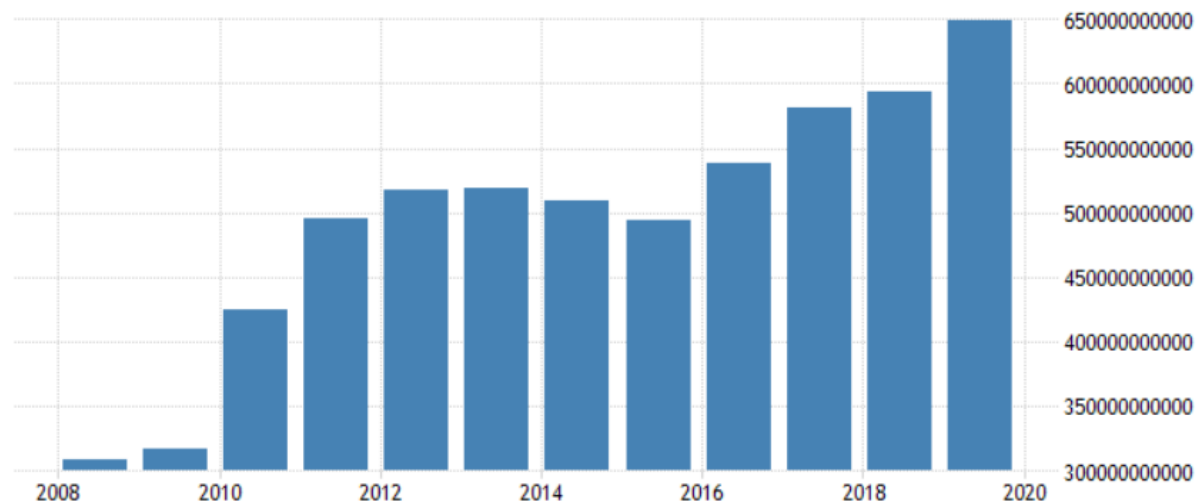


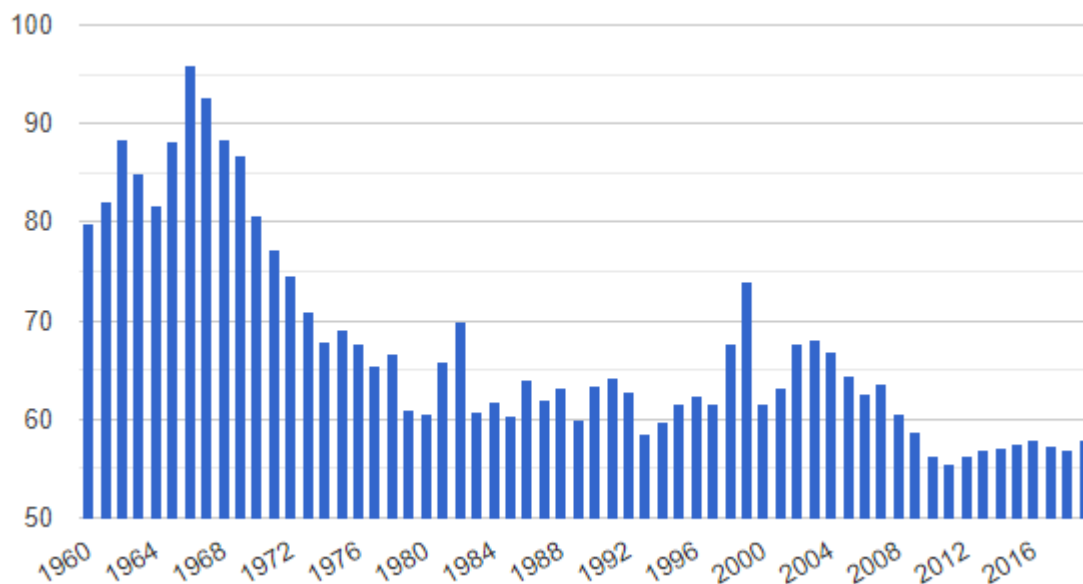
Figure-1. Household Consumption Expenditure in Indonesia.

Source: Trading Economics (2020).

From the above-mentioned concept, it has been noted that somehow the poverty and household consumption exposures are related to each other. The given below picture illustrated the household consumption expenditure in Indonesia. It has been noted that there is a significant increase in household consumption expenditure from the year 2008 to 2020 which is noticeable as well by the policymakers of Indonesia that has a direct impact on the income. Therefore, the log level of GNI is the first determinant that is selected for the analysis of household consumption expenditure and poverty. GNI is the entire amount of money produced by individuals of a nation and business of the country. It is employed to track and measure a wealth of nation yearly. The related numbers are taken from the Gross Domestic Product (GDP) with the addition of income received from the other overseas sources. It refers to an alternative of GDP and resulted as a more proper and suitable indicator for some countries (Miller et al., 2016).

*H1: There is a positive and significant influence of the log level of GNI to household consumption expenditure and poverty.*

In light of a study conducted by Bonsu and Muzindutsi (2017) that spending on a household is the amount of final consumption expenditure originated by the inhabitants of households to fulfil their everyday requirements. The population of the country has an evident influence on household consumption and poverty because the consumption rate is directly linked with the rate of population. It has been illustrated that the average value concerning to Indonesia during the time was 67.35% while having a minimum worth of 55.42 in the year 2011. Whereas, in 1996 it has a maximum value of 96% but the current value is 58%. The given below picture further depicts the stats related to household consumption in percent of GDP of Indonesia that has a significant difference from 1960 to 2016.

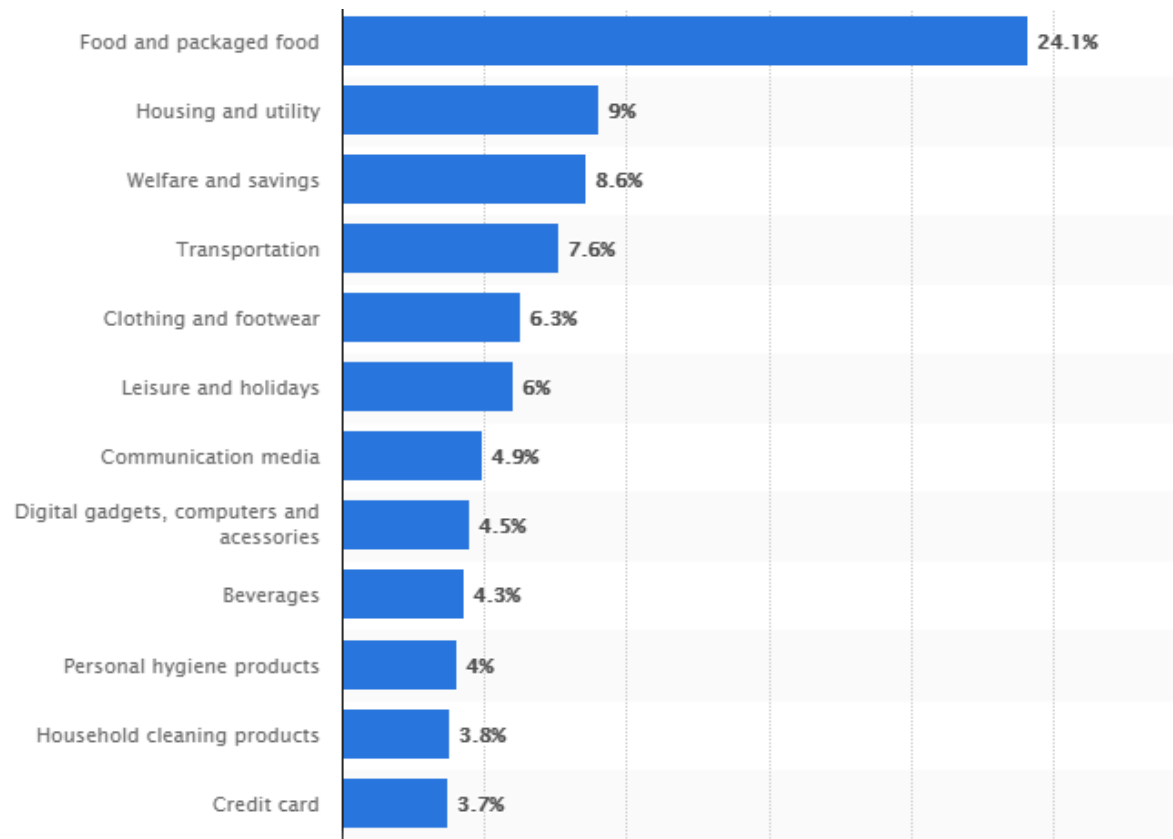


**Figure-2.** Household consumption of Indonesia in percent of GDP.

**Source:** The Global Economy Website (2020).

The above graph also depicts that based on a monthly breakdown in which the consumption of food and packaged food is more in comparison to others which is also related to the ratio of population.

*H2: There is a positive and meaningful impact of log level of population to household consumption expenditure and poverty.*



**Figure-3.** Monthly Based Breakdown of Household Expenditure of Indonesia 2018.

**Source:** Statista Website (2020).

The entire expenditure comprises of total expense and entire acquisition of assets which are non-financial (Seshaiah, Reddy, & Sarma, 2018). The General Government Total Expenditure (GGTE) in of Nigeria is of the 2,627,283 billion current LCU. In comparison to the last 20 years period, the GGTE of Indonesia has a substantial increase which is from 231,312 to 2,627,283 billion LCU. Further, is moving at an improving annual rate that grasped the value proportion which is 51.02% in the year 2001 and then reduced to 6.47% in the year 2019 (Knoema Statistics, 2020). The figure given below illustrates the change in GGTE and which resulted in the change in household consumption expenditure and poverty and also rationalise the selection of this particular determinant.

*H3: There is a positive and meaningful effect of log level of GGTE to household consumption expenditure and poverty.*

In relation to the lending interest rate and household consumption expenditure of Indonesia, it has been examined that it has been decided by Indonesian central bank to cut its interest rate benchmarks by 25 basis point to 4.25%. In the past three years, this particular rate was 2.5% that was attaining the benefit of the lowest inflation of the country in nearly two decades (Mariska, 2020). The economic situations of the country have also linkage with the interest rates offered by the financial institutions of the country. The lower interest rates affect the investors who are giving the money for the different businesses and other functions whereas borrowers have the advantage. On the other side, when the interest rates are increased the investors and financial institutions have leverage (Alegre, Mateo, & Pou, 2013). It concludes that the lending interest rates influence household consumption expenditures and poverty due to increasing rates of lending interests. This type of interest rate mainly impacts household consumption by effecting the trade-off between future and current consumption. In contrast, the interest rate can also influence household consumption through other channels (Gustafsson, Hesselman, & Lagerwall, 2017).

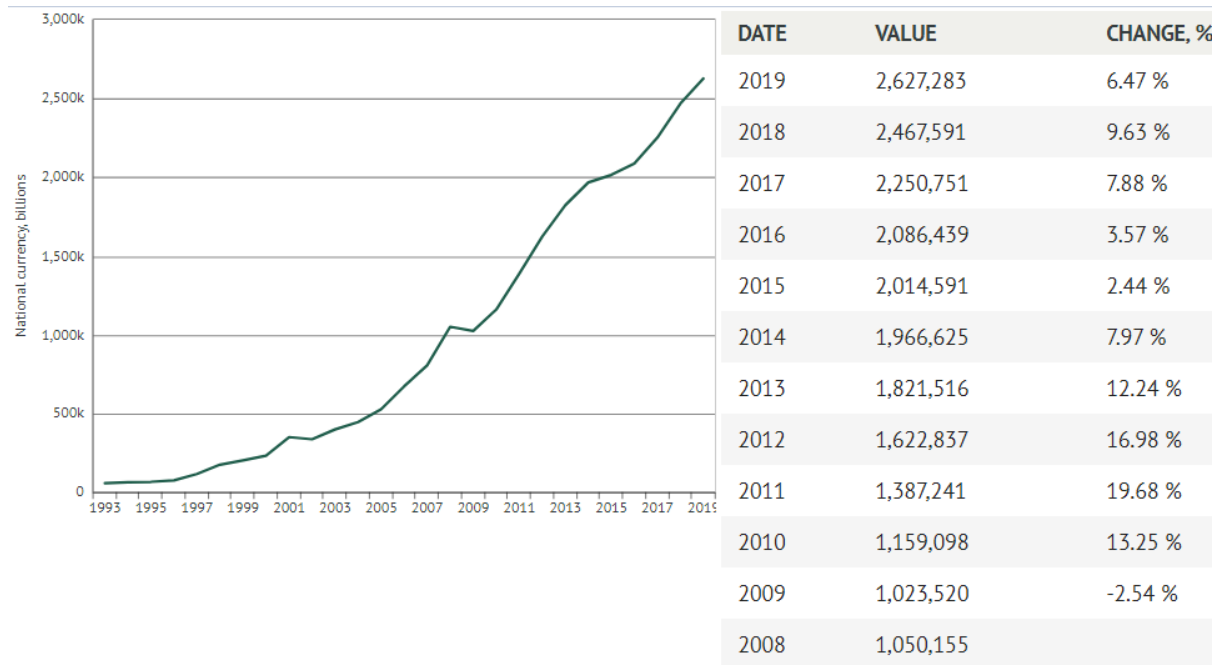


Figure-4. GGTE of Indonesia.

Source: Knoema Statistics (2020).

H4: There is a positive and significant influence of log level of lending interest rate household consumption expenditure and poverty.

In the alleviation of poverty, employment has performed a key role. It is a complete process which creates a certain cycle because an employed person doing his job and expense their income as a household expenditure. This can support the various other business by spending money on their basic or any other advanced needs based on the level of income. Therefore, in the success of the country, the employment rate of that country is deeply measured to do international business or any other global dealings. Moreover, it also depends on economic conditions and natural resources of the country (Kassa, 2012). The picture given below is illustrating the changing unemployment rate of Indonesia which has a significant decrease during the period. From 2007 to 2014 it has reduced from 8.06% to 4.05%. Currently, 4.51% which is more in comparison to 2014 but less in comparison to 2005 or 2006.

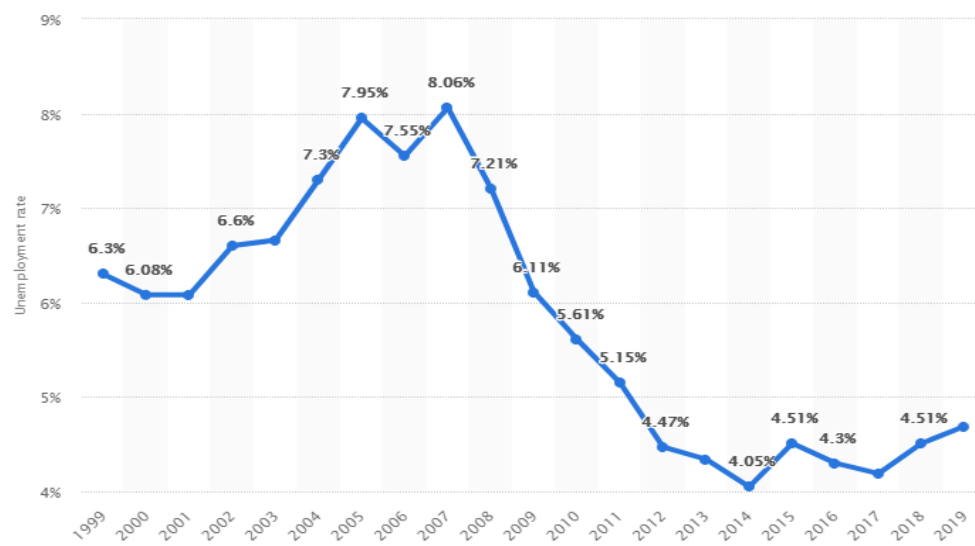


Figure-5. The unemployment rate in Indonesia from 1999 to 2019.

Source: Statista Website (2020).



*H5: There is a positive and meaningful impact of unemployment level in a country household consumption expenditure and poverty.*

### 3. Theoretical Framework

There are various theories related to the phenomenon defined in literature but the most relevant theoretical concepts are consumption theory and Keynes theory. The consumption theory is that if individuals receive an unexpected income that enhances their disposable income, probably spend by the people that direct to the driving up of consumption along with the spending in the economy. Conversely, there is a belief of other economists that cutting individual taxes is an improved and long-term procedure to drive the consumption O'Donnell (2019).

On the contrary, the modern consumption theory is not that much advantageous at all when it comes to talking about the concept of saving a luxury, attains the same result by presenting the probability of liquidity-constraints people (Nisticó, 2020). The applications of this theory with the current study are that it helps the people in earning and expanding money and supports the cycle produced by the people which is based on earning and expending. This further motivates people to do a business that leads them to healthier income levels that are eventually resulted in better economic conditions of Indonesia.

The other concept is Keynes theory which defines that as the income rises a lesser amount of income is consumed. The ratio of consumption to income is known as Average Propensity to Consumers (APC). Hence, it has been argued by Keynes that incomes and APC are inversely proportional to each other as APC decrease income increases and vice versa (Fuller, 2019). Further, it employs that the independent figure would always be optimistic and multiple levels of incomes are in between zero and one, altering according to the people in the economy. Keynes provides no basis for this concept in consideration to maximisation of utility nor indeed provides any deliberation related to only income and economic conditions but it has belief in the knowledge of human nature (Caspari, 2019).

### 4. Methodology

The paper was aimed to identify the determinants of the household consumption expenditure and poverty; for this purpose, six key variables were selected which includes, household consumption expenditure, level of gross national income (GNI), level of population, lending interest rate, unemployment rate and also global financial crises. However, paper specifically attempted to conduct data analysis on the Indonesia; hence data of Indonesia was collected from World Bank Data centre. Data for the Indonesia was available for the period of 1990 to 2019; hence this was selected as time-window of the study for empirical analysis. This makes the data of paper time-series in nature and it is prerequisite for the time-series data that they have to be stationary. It means the data should not have unit root issue since it makes estimation harder for conventional methods of estimation such as regression. Therefore, to determine stationarity of the data, Augmented Dickey-fuller (ADF) test was conducted.

The ADF revealed that data was non-stationary and to resolve the issue of unit root, second difference of the variables resolved the issue and tests were conducted on second difference. Furthermore, instead of using the ordinary least square (OLS) regression, autoregressive distributed lag model (ARDL) was preferred based on the fact that it allows to determine the short-run and long-run effect and that it is a dynamic model that could be applied on both type of time-series data either stationary or non-stationary (Shrestha & Bhatta, 2018).

### 5. Analysis

#### 5.1. Descriptive

Table 1 demonstrates the key variables of the study along with the descriptive statistics including mean, standard deviation, minimum and maximum of each variable. The mean of the house hold consumption is Rp. 276 billion and it also has standard deviation of Rp. 198 that indicates that there has been a significant level of fluctuations into the house hold consumption which can be attributed to lower level of incomes and higher inflation within the country as demand of goods and services prevails but supply remains constant. Meanwhile, during the sample period, minimum and maximum house hold consumption has been Rp. 64.7 and 648.0 indicating this is range of the value in which it may fall in next periods. Furthermore, other



variables such as level of GNI, population and general government, the descriptive statistics cannot be presented study has used log of these variables. However, mean lending rate of Indonesia is 16.9% with standard deviation 5.4% suggesting that in a given time period the mean lending interest rate of the country is 16.9% that could deviate by value of 5.4%.

**Table-1. Descriptive Statistics.**

Variable	Obs	Mean	Std. Dev.	Min	Max
House Hold Consumption	30	276.0	198.0	64.7	648.0
Log level GNI	30	8.7	0.4	8.0	9.4
Log level of Population	30	123.7	14.1	100.1	147.8
Log level of General Government	30	8.4	1.1	5.7	9.7
Lending Interest Rate	30	16.9	5.4	10.4	32.2
Unemployment Rate	30	5.1	1.6	2.5	8.1

Furthermore, the unemployment rate of the Indonesia is 5.1% with standard deviation of 16% which suggests that mean unemployment rate of the country is 5.1% which may deviate by value of standard deviation 1.6%.

### 5.2. Augmented Dickey-Fuller (ADF)

Augmented Dickey-Fuller (ADF) a statistical test to evaluate stationarity of the data that either data is stationary or not. A stationary refers to the property of the data that mean, variance and autocorrelation does not change over time. Hence, if the mean, variance and autocorrelation of the data changes over time then this makes the process estimation for the traditional methods of estimation such as regression ineffective and misleading (Muhammad, Xu, & Karim, 2015). Therefore, having a varying mean, variance and autocorrelation means that there is random walk with drift. Hence, conservative method of estimation may not be applicable on the time series given that there is problem of unit root in the data. Therefore, in order to determine the stationarity of the data, ADF test was conducted and results of the test are as follows.

**Table-2. Unit Root Test Results**

Augmented Dickey-Fuller	t-Statistics	Prob.*
House Hold Consumption	-0.669	0.855
House Hold Consumption (-1)	-6.130	0.000
Log level GNI	-0.784	0.824
Log level GNI (-1)	-3.546	0.007
Log level of Population	-1.528	0.819
Log level of Population (-1)	1.539	1.000
Log level of General Government	-1.492	0.537
Log level of General Government (-1)	-5.060	0.000
Lending Interest Rate	-1.451	0.557
Lending Interest Rate (-1)	-4.920	0.000
Unemployment Rate	-1.662	0.451
Unemployment Rate (-1)	-3.296	0.015
Global Financial Crisis	-3.148	0.023

Table 2 demonstrates the ADF results and it is evident that p-value of all variables is greater than 0.05 which indicates that there is unit root problem in the data except for the global financial crises. Meanwhile, to address the issue of unit root in the data, first difference of the variables was used as a predictor, and it can also be observed series at first difference also becomes stationary.



### 5.3. Bound Tests

In order to test either long-run is present within the variable or not, bound tests were performed and results of the test are presented as follows.

**Table-3. Bound Test Results.**

ARDL (1,4,1,3,1,4,4)			
H0: no levels relationship			
F-Statistics	79.211	Critical Values	
Significance	10%	5%	1%
I0	2.12	2.45	3.15
I1	3.23	3.61	4.43

In bound test, evidence of interrelation has been examined that either interrelation between the variables exists in the long-run which is examined through the value of f-statistics which if remains greater than critical value then the null hypothesis of no levels relation is rejected. Meanwhile, the results above reveal that critical value I (1) is 3.61 at 5% and the f-statistics is greater than alpha 0.05 or 5% hence there is sufficient evidence to reject the null hypothesis and accept the alternate hypothesis that there is long-run interrelation of household consumption and level of GNI, population, general government, lending interest rate, unemployment rate and also global financial crises. Meanwhile, presence of the long-run interrelation also indicates that there are cointegration between the variables through which the dependent variable (household consumption) could be estimated or predicted.

### 5.4. Autoregressive Distributed Lag Model (ARDL) 500

Autoregressive distributed lag model (ARDL) is based on the ordinary least square (OLS) model that could be used to estimate the variables those have unit root and those do not have unit root. It implies that it is applicable on stationary and non-stationary time-series data even with mixed order of integration. However, the key difference between regression and ARDL is that regression examines how X affects Y at once but in contrast the ARDL tries to estimate the effect of X on Y over the time rather than once and this makes the ARDL model dynamic in its application (Afzal, Farooq, Ahmad, Begum, & Quddus, 2010). Meanwhile, another characteristic that makes ARDL dynamic is distributed lags which enable it to determine the effect of X on Y over time because the lagged vales of the variables and dependent variable is also included into the model (Murthy & Okunade, 2016). Hence, the strength of the model to estimate the dependent variable over time improves after inclusion of lagged values. Table 3 provides the results of the ARDL for short-run and long-run relations

**Table-4. Long Run Results.**

Dependent Variable: House Hold Consumption			
Long-Run Estimation		Coef.	P> t
LHC	L1.	-2.179	0.045
Log level GNI	L1.	1.0449	0.02
Log level of Population	L1.	-0.009	0.072
Level of General government	L1.	-0.008	0.258
Lending Interest rate	L1.	-0.016	0.081
Unemployment Rate	L1.	-0.002	0.547
Global Financial crisis	L1.	0.045	0.203

The long-run estimations of the ARDL shows that effect of Household consumption at lag one has negatively affect the house hold consumption at no lag; and the level of gross national income (GNI) has positive and significant effect since C=1.044, P=0.02; this shows that coefficient of estimation is positive and p-value of the study is less than alpha 0.05. Therefore, there is sufficient evidence to claim that there is positive and significant effect of GNI on the household consumption level. On the other hand, level of population, general government, lending interest rate, unemployment rate, global financial crises have





statistically insignificant effect on the household consumptions (Murthy & Okunade, 2016). However, effect of level of population and lending interest rate has negative effect but significant at 10%. It is determined that only GNI can estimate the household consumption at 5% and population and lending interest rate can predict or estimate the household consumption at 10% in long-run. Furthermore, for short-run effect, Table 5 presents the results.

**Table-5. Short Run Estimate.**

Short-Run Estimation		Coef.	P
Log level GNI	D1.	-0.163	0.734
	LD.	0.073	0.608
	L2D.	0.419	0.134
	L3D.	0.238	0.45
Log level of population	D1.	0.003	0.163
	Level of general government	D1.	-0.027
Lending Interest rate	LD.	-0.041	0.125
	L2D.	-0.023	0.277
	D1.	-0.047	0.1
Unemployment Rate	D1.	-0.057	0.245
	LD.	0.022	0.286
	L2D.	0.049	0.159
	L3D.	0.009	0.859
Global Financial Crisis	D1.	-0.046	0.396
	LD.	-0.156	0.104
	L2D.	-0.055	0.389
	L3D.	-0.010	0.419
	_cons	8.212	0.049

The coefficient estimation of ARDL in short-run shows that none of the variable and its lags have a significant effect on the household consumption. Therefore, it can be determined that no variable including the GNI, level of population, general government, lending interest rate, unemployment rate and global financial crises has short-run effect on the household consumption.

### 5.5. Hypothesis Testing

**Table-6. Hypothesis.**

Hypothesis	Decision
H1: There is a positive and significant influence of the log level of GNI to household consumption expenditure and poverty.	Accepted
H2: There is a positive and meaningful impact of log level of population to household consumption expenditure and poverty.	Rejected
H3: There is a positive and meaningful effect of log level of GGTE to household consumption expenditure and poverty.	Rejected
H4: There is a positive and significant influence of log level of lending interest rate household consumption expenditure and poverty.	Rejected
H5: There is a positive and meaningful impact of unemployment level in a country household consumption expenditure and poverty.	Rejected

There are were hypothesis of the study among which one hypothesis; there is a positive and significant influence of GNI on household consumption expenditure and poverty. Meanwhile, level of population and lending interest rate have been found to have a negative and significant effect on the household consumption expenditures but at significance of 10%. However, no other variable has been found to be associated with the household consumption significant and even the global financial crises also do not significantly affect the household consumption in short-run and long-run.



## 6. Conclusion and Recommendations

The purpose of the study was analysis of determinants of the household consumption expenditures and poverty in Indonesia for which bound test and autoregressive distributed lag model (ARDL) model to examine the long-run and short-run effect. The bound test reveals that there is long-run effect means cointegration present among the variable; hence the household consumption expenditure could be used to predict or estimate the household consumption and poverty in long-run. Meanwhile, ARDL results has suggested that there is no short-run effect of any of the regressors on the regressand household consumption expenditure and poverty. However, effect of gross national income (GNI) has been found to have a positive and significant effect on household consumption and poverty in long-run at 5%; but effect of level of population and lending interest rate have negative and significant effect on the household consumption expenditure and poverty in long-run but at 10%. Therefore, it is recommended that government gross national income should be improved in order to reduce the poverty in the country. For this purpose, the lending rate should decline as to increase access to finances for the businesses, entrepreneurs and general public to drive growth and consumption into the country. However, it is also fact that controlling population could also help to improve the household consumption expenditure and reduce the poverty within the country.

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