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Research Article

Households' Debts Among Rural and Agriculture-based Households in Indonesia

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Abstract.
Household debts reflect financial insecurity for households to maintain their standard of living because it reflects the financial commitment that must be paid to other parties. However, the share of debts among different household classes, especially among agriculture and rural households in Indonesia still needs to be discovered. This research investigates the distribution of households' debts in rural areas in Indonesia by utilizing data from the Indonesian Family Life Survey (IFLS) Wave 5 (2014). This research shows that households in rural areas have lower average debts than those in urban areas. At the same time, households in rural areas outside Java Island have higher average debts than their counterparts in Java Island. Two significant contributors to households' debts are household size and household head educational attainment, where both variables show a positive and significant effect. The government must focus on rural development, including agricultural-based households, creating small but financially strong households, and increasing food self-sufficiency.

Keywords: agriculture, debts, households, rural

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1. Introduction

There is a gap between financial literacy and financial inclusion among people living in rural and urban areas in Indonesia, as found by Otoritas Jasa Keuangan [1], people living in urban areas are considered to have a higher rate of financial inclusion than their counterparts in rural areas (83.60% compared to 68.49%), the existence of formal financial institutions in urban areas primarily causes that. On the other hand, rural households have a higher financial literacy rate than urban (41.41% compared to 34.53%), indicating that even though rural households have lower income levels than urban ones, financial services are essential for them [2].

One of the implications of those gaps is the differences in households' ability to manage debts, which can lead to a wider gap in the standard of living. Households'

debts have twofold functions. Households' debts give higher financial capacity for households to buy products and services in advance, even if they do not have financial readiness. Debts also help families maintain a living standard, especially during low income. In contrast, households' debts also reflect economic insecurity as they indicate their financial commitment to third parties, resulting in an obligation for families to repay their debts even if they receive low income, which can lead to a negative cash flow.

Among rural agricultural-based households, debts play an essential role because of their employment characteristics that rely on nature, increasing their uncertainty of receiving a stable income compared to other less-reliance on nature sectors [3]. Typically, agricultural activities require high investment at the beginning of the period but give low returns, making households need to pay expenditures from their savings or borrow from other parties [4, 5]. Further, agricultural families often need to pay more attention to the expenses required of farming activities, e.g., buying machinery that current savings cannot easily cover and require borrowing money [6]. Those conditions require households to borrow money and pay it back after harvest, leaving little for savings. This repetitive process barely allows households to have sufficient income and savings, increasing their dependence on credit.

Considering the importance of debts among agriculture-employment households in rural areas, as mentioned above, households need specific characteristics that give them a higher probability of accessing credit. This research investigates the required features for rural agricultural households to have increased access to credit, focusing on demography and education by examining these two research questions. First, what is the relationship between income and debts? Do households living in rural areas in Indonesia have lower debts than urban households? Second, what are the determinants of rural households' debts in Indonesia, focusing on the demographic aspect?

This research will contribute to developing literature on improving agricultural households' debt access in Indonesia's rural areas. Only a few studies are found regarding the relationship between income and debt in a household, especially by comparing people who live in urban and rural areas. Moreover, this study also elucidates the determinants of debts, specifying people who live in rural areas and work in the agricultural sector. Thus, this study will provide a richer perspective and literature on rural households' debts. It is vital to give more recommendations for policymakers on creating a sound policy. Since the increase in income can significantly reduce households' debts only for the middle and upper classes, we need to increase the income among the poorest households to have lower debts and a higher standard of living. The rest of this paper is structured as follows. Section 2 presents a literature review of household characteristics

related to debts. Section 3 describes the methodology and data. Section 4 presents the result of the estimation and policy implications. Section 5 offers the conclusion and recommendations for future studies.

2. Literature Review

Household debt is defined as “an obligation or responsibility, deriving from obtaining goods or services “on credit” or with a promise to pay back the money later” [7]. For some reason, households can create debts. First, to smooth the fluctuation in their income and expenditure [4, 5]. Second, for investment [4]. For agricultural-based households, debts play an essential role, especially in financing farming, buying technology-related tools, and bridging consumption between planting and harvesting [6, 8]. Debts are also needed to balance consumption costs in crop failure [6].

On a larger scale, debts can increase household welfare by reducing financial constraints, making it easier for households to buy the capital-intensive assets and agricultural inputs they need [9], promoting labour-saving technologies and increasing worker productivity [10, 11], growing households ability to take risks and modifies their risk management mechanisms [12, 13], and make credit-supported households are more likely to explore promising technologies than households without access to credit [13].

Some potential contributors that influence debts among rural households are related to socio-economic factors like education, caste, gender, and asset ownership [14, 15], the head of household’s education, the frequency of extension contacts, and farmers’ perceptions of group loans [16], the age of the borrower, household income, interest rate, and loan duration [17, 18], household size [19, 20], and demographic characteristics (age, gender, marital status, location, education) and socio-economic factors (field of employment, employment status, poverty status) and the effectiveness of banking operations [21-23].

3. Method and Data

Data in this research is from the latest Indonesian Family Life Survey (IFLS) survey. The survey was fielded in 2014 and interviewed 15,921 households in the original 13 provinces in Indonesia included in the first wave of IFLS. The provinces are in Sumatera, Java, Kalimantan, and Sulawesi Islands. The IFLS is considered the most extensive and longest longitudinal study in Indonesia. The first wave of IFLS was conducted in 1993.

The second wave was fielded in 1997, the third in 2000, the fourth in 2007, and the fifth in 2014.

The variables used in this research are related to demographic aspects (e.g., household size, age of household head), education of household head, and socio-economic condition, including employment sector. We also collected household wealth information, where total wealth is the total value of household assets, including land, house, farmland, vehicles, tools, savings, jewellery, and furniture. At the same time, net wealth is deducted from debts or any amount borrowed from third parties. Considering the omittance of the household size that may obscure the estimation of an individual's standard of living, a correction is then needed, that is, by dividing household wealth by the square root of the number of household members [24-26] (See Table 1).

Table 1: Descriptive Statistics.

Variable	*Mean*	*Std. Dev.*
Household size	5.613	3.196
Age of household head	45.146	24.311
Length years of schooling	17.139	26.643
Total wealth (Rp. million)	80.9	130.0
Debts (Rp. million)	4.3	20.7
Net wealth (Rp. million)	76.8	126.0
	Freq	*Per cent*
Male-headed household	11,227	83.57
Household live in rural	8,833	57.45
Household employment is agriculture	2,825	26.48

To answer the research problem mentioned in Section 1, we use quantile regression to determine the relationship between household debts and income. The strength of quantile regression is its ability to overcome regression models' limitations, i.e., it provides an average term, an incomplete picture of a set of distributions, and hides the underlying relationship between the independent and dependent variables [27]. It also provides a complete picture of the underlying relationship, is robust to outliers, and can describe the entire conditional distribution [27-29].

The mathematical model for quantile regression is [29]:

(1) $y_{it} = x'_{it}\beta_\theta + u_{\theta it}$ with $Quant_\theta \left(y_{it} x_{it}\right) = x'_{it}\beta_\theta$

Where y_{it} is the dependent variable, a vector of regressors, β is the vector of parameters to be estimated, and u is a vector of residuals. $Q_\theta\left(y_{it}x_{it}\right)$ identifies the θ^{th} conditional quantile of y_{it} given x_{it}.

Next, to examine the determinants of debts, we use logit regression. For binary outcome data, the dependent variable *y* takes one of two values,

$$y = \{1 \quad with\ probability\ p \qquad 0 \quad with\ probability\ 1-p$$

The logit model is (Cameron and Trivedi, 2005):

$$(2)p_i = Pr\left[y_i = 1x_i\right] = \frac{exp\left(\beta_1 + \beta_2 x_i\right)}{1 + exp\left(\beta_1 + \beta_2 x_i\right)}$$

with β is the parameter and ensures that $0 < p_i < 1$.

4. Results

4.1. Households' Debts in Rural Areas

There are differences in wealth and debt levels between urban and rural households in Indonesia, where families living in urban areas have higher average total wealth, debts, and net wealth than those in rural areas. The differences are also shown when we focus on rural households and compare rural homes in Java and outside Java Island. Families living in rural Java Island have lower average total wealth, debts, and net wealth than those outside Java (Table 2).

Table 2: Average Total Wealth, Debts, and Net Wealth (Rp. million).

	Total Wealth		*Debts*		*Net Wealth*	
	Mean	*Std. Dev.*	*Mean*	*Std. Dev.*	*Mean*	*Std. Dev.*
Rural (Java+outside Java)	74.2	119.0	3.4	17.9	70.9	115.0
Urban (Java+outside Java)	90.0	142.0	5.4	23.8	84.9	138.0
Rural Java	68.3	110.0	2.5	15.6	65.8	107.0
Rural Outside Java	80.1	127.0	4.4	20.0	76.0	123.0

The larger the household size, the higher the average total wealth, debts, and net wealth among rural households. The highest average total wealth is found in rural households with more than four family members, with the lowest average in households

Table 3: Total Wealth, Debts, and Net Wealth by Household Size in Rural Households (Rp. million).

Number of Household Members	*Total Wealth*		*Debts*		*Net Wealth*	
	Mean	*Std. Dev.*	*Mean*	*Std. Dev.*	*Mean*	*Std. Dev.*
1	42.7	138.0	3.6	25.5	39.1	136.0
2	77.6	153.0	4.6	30.6	73.3	148.0
3	68.1	108.0	3.4	17.1	64.8	104.0
4	85.5	131.0	4.1	16.9	81.5	127.0
5	85.3	125.0	4.1	17.2	81.5	121.0
Six or more	73.3	104.0	2.8	14.4	70.8	101.0

with one family member. The highest average debts are located in rural households with two family members, and the lowest are in households with six or more family members. This finding is in line with previous studies that show household size might influence financial pressure because additional family members require more expenditure, e.g., buying food expenditure and paying school and health care fees, which may result in the chance for household debts [30-32] (Table 3).

Table 4: Total Wealth, Debts, and Net Wealth by Employment Type in Rural Households (Rp. million).

	Total Wealth		*Debts*		*Net Wealth*	
	Mean	*Std. Dev.*	*Mean*	*Std. Dev.*	*Mean*	*Std. Dev.*
Agriculture, forestry, fishing and hunting	65.2	106.0	3.5	16.1	61.8	102.0
Mining and quarrying	78.5	96.4	2.9	10.8	75.5	92.5
Manufacturing	65.4	112.0	1.5	6.0	63.9	111.0
Electricity, gas, water	66.1	81.6	2.8	8.8	63.2	82.6
Construction	61.7	94.2	3.4	11.8	58.5	92.4
Wholesale, retail, restaurants and hotels	65.9	105.0	2.8	15.5	63.3	103.0
Transportation, storage, and communications	80.4	118.0	5.5	39.6	75.3	103.0
Finance, insurance, real estate and business services	71.2	110.0	2.7	9.9	68.5	107.0
Social services	70.3	111.0	3.7	15.8	66.7	109.0
Activities that cannot be classified	54.9	79.7	1.0	3.5	53.9	79.7
No response	86.7	136.0	4.3	21.9	82.7	132.0

We then compare the rural agriculture-based employment sector households and other-employment sector households. We found that agriculture households have lower average total wealth but higher average debts than other households (Table 4).

Table 5: Total Wealth, Debts, and Net Wealth by Education Levels in Rural Households (Rp. million).

	Total Wealth		*Debts*		*Net Wealth*	
	Mean	*Std. Dev.*	*Mean*	*Std. Dev.*	*Mean*	*Std. Dev.*
No education	60.0	93.5	1.6	9.8	58.5	90.6
Elementary education	68.3	108.0	1.6	10.9	66.8	106.0
Middle school	60.4	94.4	2.1	7.9	58.4	92.9
High school	92.5	142.0	6.4	25.8	86.6	139.0
University level	118.0	175.0	12.3	36.3	106.0	166.0

Table 5 shows the average total wealth, debts, and net wealth by educational attainment owned by household heads in rural areas. We find that households with elementary education have the lowest total wealth and average debts. On the other hand, households with a university education have the highest total wealth, debts, and net wealth. This condition shows that the level of education brings a person to a higher level of income than any other level of education. The high debt ratio in households with higher education is assumed that with the high-income levels, access to information and financial literacy are also well-known. Thus, households with higher education quickly get loans.

4.2. Relationship between Income, Debts, and Wealth

Using the standard regression model, we find that income negatively and significantly contributes to debts for rural agricultural households. Hence, a higher income will significantly drive lower debts (Table 6 Column 8). Since a standard regression model hides the variation across classes, we use quantile regression to explore the relationship between income and debts across household classes.

Estimations from quantile regression show that income's negative and significant contribution to debts among rural agriculture households is only found in middle- and upper-class households. For the poorest rural and agricultural households, income has a negative but insignificant effect on debts, which implies that higher income received does not contribute significantly to the reduction of debts (Table 6 Column 8).

The focus should be given to increasing income among the poorest rural agriculture households as the increase in income does not significantly reduce their probability of borrowing. Besides income, we find other potential determinants of debts related to the demography aspect, e.g., household size, household head age, education level, and whether the household head is female.

Using logit estimation in this research helps us to analyse the determinants of household debts among rural agriculture households. The household debts are significantly influenced by household size and the head's education attainment (Table 7 Column 3).

Table 6: Relationship between Income, Debts, and Wealth.

	Urban and Rural Households			*Rural Households*			*Rural and Agriculture Households*		
	Total Wealth	*Debts*	*Constant*	*Total Wealth*	*Debts*	*Constant*	*Total Wealth*	*Debts*	*Constant*
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*
Standard Regression									
	0.0004183	-0.0020899**	1,763,890***	0.0004373	-0.0001842	1,718,718***	0.0012436**	-0.0087561***	867,502***
	(0.0002826)	(0.0009753)	(36255.44)	(0.0005072)	(0.0020976)	(47379.31)	(0.0005755)	(0.002001)	(63177.73)
Deciles									
10	-0.0000004	-0.0003644	200,049***	-0.0000641	-0.0006595	205,946***	0.0001615	-0.0000583	-654
	(0.000091)	(0.0002321)	(14496.55)	(0.0001595)	(0.0016771)	(21638.83)	(0.0002015)	(0.0013843)	(16175.58)
20	-0.0000820	-0.0008207	486,158***	-0.0001932	0.0005080	470,503***	0.0000221	-0.0008403	149,724***
	(0.000102)	(0.0010673)	(10842.63)	(0.0001865)	(0.0004623)	(16536.48)	(0.0002583)	(0.0018474)	(40406.07)
30	-0.0001909***	-0.0003875	733,663***	0.0000023	-0.0002463	700,753***	-0.0001389	-0.0020282**	301,078***
	(0.000068)	(0.0007128)	(21442.13)	(0.0002597)	(0.0020928)	(34725.55)	(0.0002524)	(0.0010343)	(35781.54)
40	0.0000000	-0.0009667*	1,000,000***	0.0000000	-0.0009623	1,000,000***	-0.0000247	-0.0022200***	401,313***
	(0.000228)	(0.0005514)	(24389.06)	(0.0002771)	(0.0009345)	(34113.83)	(0.0003251)	(0.0004874)	(30457.9)
50	-0.0001046	-0.0014705**	1,301,480***	-0.0000076	-0.0015738	1,259,473***	0.0001182	-0.0028159**	498,700***
	(0.0002001)	(0.0006656)	(28970.57)	(0.000267)	(0.0029338)	(39625.82)	(0.0008211)	(0.0012084)	(53353.43)
60	0.0002707	-0.0024387***	1,598,047***	0.0000000	-0.0013158	1,600,000***	0.0012602	-0.0051278***	684,406***
	(0.0002688)	(0.0001806)	(31025.52)	(0.0004278)	(0.0042283)	(43888.93)	(0.0010257)	(0.000855)	(74704.89)
70	0.0002193	-0.0009094	1,999,144***	0.0000000	0.0000000	2,000,000***	0.0016108***	-0.0074557***	979,849***
	(0.0003136)	(0.0023403)	(34142.71)	(0.0005096)	(0.0077014)	(50812.67)	(0.000505)	(0.0017337)	(91857.04)
80	0.0003370	-0.0016624	2,679,883***	-0.0002247	0.0076161***	2,612,368***	0.0009633	-0.0080908**	1,389,880***
	(0.0002363)	(0.0038693)	(52611.32)	(0.0003586)	(0.0016709)	(63136.96)	(0.0012268)	(0.0033713)	(133168.4)
90	0.0013305***	0.0009047	3,595,543***	-0.0000997	0.0111112**	3,557,953***	0.0046732	-0.0128036	1,982,193***
	(0.0002454)	(0.0022655)	(66339.73)	(0.0005704)	(0.0050029)	(107887.2)	(0.0038504)	(0.0143205)	(296358.2)

Note: *p<0.1, **p<0.05, ***p<0.01. Parentheses refer to robust standard error. Source: analysed by authors

Table 7: Determinants of Debts in Rural and Agricultural Households.

	Urban and Rural Households		*Rural Agriculture Households*	
	Dependent Variable is Debts	*Dependent Variable is Total Wealth*	*Dependent Variable is Debts*	*Dependent Variable is Total Wealth*
	(1)	(2)	(3)	(4)
Household size	0.054724***	-0.06249***	0.040435*	-0.00312
	(0.0070422)	(0.0135186)	(0.0209611)	(0.0381897)
Household head age	0.000512	0.00283	0.00088	0.000939
	(0.0007338)	(0.0025537)	(0.0016856)	(0.0038364)
Education level	0.184855***	0.061727	0.187963***	0.296855**
	(0.0168787)	(0.0421511)	(0.0573149)	(0.1400436)
Female-headed household	-0.00795	-0.05251	-0.03273	0.056107
	(0.0184549)	(0.0380652)	(0.056413)	(0.132329)
Household live in rural	-0.11118***	-0.02136		
	(0.0211906)	(0.0468423)		
Agriculture employment	0.091799*	0.046072		
	(0.0531997)	(0.1182899)		
Constant	-1.04203***	3.129158***	-1.11309***	2.530242***
	(0.0782619)	(0.192594)	(0.2058321)	(0.419006)

Note: *$p<0.1$, **$p<0.05$, ***$p<0.01$. Parentheses refer to robust standard error. Source: analysed by authors

We find that household size has a positive and significant contribution to debts. Additional household members reflect higher expenditures needed to maintain the standard of living, resulting in the need to purchase costs financed by debts. Education has a positive and significant contribution to debts. Households with higher education are likelier to participate in the debt market than households with lower education. Some scholars argued that this condition might be caused by their ability to collect and filter more information [33] and their higher chance to repay their debts due to higher income [21, 34]. On the other hand, lower-education households are less likely to borrow money as they face more obstacles than higher-education households, like limited access to formal lenders [35] and not attractive to legal lenders [21].

Household head age has a positive but insignificant contribution to debts because the age of household needs will become more complex at a mature age. The number of households, education level, and health influence mature workers' high demand for debt more than youth workers [36]. The female-headed household has a negative and insignificant contribution to debts reflecting their resilience to utilise knowledge and

resources, therefore bringing them to try to take advantage of these conditions to meet primary needs [37, 38]. Some researchers found that women are more responsible for financial budgeting and managing daily financial problems [39, 40] and tend to prioritise bills, debt installments, food, and child-related expenses other than other aspects [41].

When we expand the analysis into urban and rural households, two additional variables are significant to debts: household live in rural and household has agriculture employment sector. Living in rural areas negatively and significantly contributes to debts. This condition might be caused by the fact that, unlike urban families that rely on purchased goods, rural households can depend on self-sufficiency, like food commodities, enabling them to cut expenditures and reduce the probability of borrowing money [45, 46]. This might also be related to lower costs and a lower need for lifestyle; hence, any increase in income will significantly enable rural households to be more self-sufficient and reduce financial dependency on others in the form of household debts. On the other hand, compared to urban families, rural households have a lower probability of accessing debts due to limited access to the banking sector, a preference to borrow money from informal lenders, and lower living costs [3, 42].

Agricultural employment has a positive and significant contribution to household debts. The reason is that debts among agricultural workers are used for farming processes that need a relatively high cost initially. Debts are also used to increase their capability for agricultural-related activities like buying inputs, helping in processing, and selling crops [43, 44].

Considering the importance of variables of household size, education, households living in rural areas, and agriculture employment, policies related to managing household debts can be achieved as below.

First, considering rural households with lower debts compared to those who live in the urban area, policymakers should prioritise increasing financial literacy among rural households and widening access to the financial institution in the rural area to increase their income and have a low reliance on debts. This recommendation is also supported by a report from Otoritas Jasa Keuangan [1] showing that households in rural areas have higher financial literacy than in urban areas but have lower financial inclusion than those in urban (Table 8).

Second, prioritising Family Planning Programme to create small but financially strong households because it can reduce high reliance on debts due to households' inability to pay increasing expenditures due to additional household members. Third, there is a need for government support in the agriculture sector to help families reduce the high initial cost of the agricultural process. The support can be in price control,

Table 8: Financial Inclusion and Financial Literacy by Region, 2019.

Region	*Financial Inclusion*	*Financial Literacy*
Urban	83,60%	34,53%
Rural	68,49%	41,41%

Source: Otoritas Jasa Keuangan [1]

subsidies (for fertilisers, seeds, and agricultural equipment), and increasing commodities competitiveness through investment and widening market access. Fourth, increasing the need for food self-sufficiency can help rural households have minimum debts despite low incomes.

5. Conclusions

This research focuses on household debts among rural and agriculture-based employment households compared to other household types; debts among them are among the highest. Efforts to increase income can significantly reduce households' debts, but only for the middle and upper classes. Hence, the increase in income among the poorest rural agriculture-based households is essential to allow them to have lower debts and a higher standard of living, e.g., through empowering rural households with better financial literacy and marketing strategies to promote their products.

This research is not free from limitations. The estimation of household debts should consider the types of debts, either productive (which may lead to an increase in income) or non-productive (with no impact on income). Hence, future researchers should be able to distinguish those types of debts to find more accurate information on household debts.

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Appendix

Table A.1 shows the total wealth, debts, and net wealth in Java and Outside Java Island rural areas. Rural areas in Java have lower total wealth, debts, and net wealth than outside Java.

TABLE 9: Total Wealth, Debts, and Net Wealth in Rural Areas in Java and Outside Java Island.

	Variable	*Mean*	*Std. Dev.*
Rural Java	Total wealth	151,000,000	239,000,000
	Debts	5,101,862	27,100,000
	Net wealth	146,000,000	234,000,000
Rural Outside Java	Total wealth	184,000,000	280,000,000
	Debts	9,824,626	43,100,000
	Net wealth	174,000,000	271,000,000

Figure A.1 shows the t-test to explore the difference between total wealth, debts, and net wealth in urban and rural areas. We can see that the group means are significantly different as the p-value in the Pr(|T| > |t|) row (under Ha: diff != 0) is less than 0.05 (i.e., based on a 2-tailed significance level). Looking at the Mean column, people living in rural areas had lower debts than those living in urban areas.

```
Two-sample t test with equal variances

   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
 1.urban |   6,142     5432567    304223.6    2.38e+07    4836183    6028952
 2.rural |   8,341     3496477      196295    1.79e+07    3111690    3881264
---------+--------------------------------------------------------------------
combined |  14,483     4317541      171716    2.07e+07    3980955    4654126
---------+--------------------------------------------------------------------
    diff |             1936091    347099.7                1255731    2616450
------------------------------------------------------------------------------
    diff = mean(1.urban) - mean(2.rural)                          t =   5.5779
Ho: diff = 0                                     degrees of freedom =    14481

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 1.0000         Pr(|T| > |t|) = 0.0000          Pr(T > t) = 0.0000
```

Figure 1: t-test for Urban and Rural Households.

Figure A.2 shows the t-test to explore the difference between total wealth, debts, and net wealth in rural Java Island and outside Java. We can see that the group means are significantly different as the p-value in the Pr(|T| > |t|) row (under Ha: diff != 0) is less than 0.05 (i.e., based on a 2-tailed significance level). Looking at the Mean column, we

can see that people living in rural areas in Java had lower debts than those living in rural areas outside Java.

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
0	4,141	4428018	310676.2	2.00e+07	3818926	5037110
1	4,200	2578021	240324.8	1.56e+07	2106858	3049185
combined	8,341	3496477	196295	1.79e+07	3111690	3881264
diff		1849997	392100.3		1081383	2618611

diff = mean(0) - mean(1) t = 4.7182
Ho: diff = 0 degrees of freedom = 8339

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

Figure 2: t-test for Rural Households in Java Island and Outside Java.