Rural-Urban Income Comparison-A Case from Cambodia

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A B S T R A C T

The paper presents the comparison of earnings of rural and urban inhabitants in Cambodia, based on the Cambodia Socio-Economic Survey 2009 – 2021. The research selected three types of incomes between urban and rural inhabitants namely employment, disposal incomes, and self-employment incomes. To test whether or not their incomes are different, the research employed the two independent-sample t-test using SPSS Statistics 27.0 to test hypotheses related to employment of urban and rural inhabitants, self-employment incomes between urban and rural inhabitants, and disposal incomes between urban and rural inhabitants. The result of the research showed that there is no statistically significant different of employment between urban and rural inhabitants($p=.703$); no statistically significant different of self-employment incomes between urban and rural inhabitants ($p=1$); and no statistically significant different of disposal incomes between urban and rural inhabitants ($p=0.60$).

Keywords: Poverty Reduction, Self-Employment Incomes, and Disposal Incomes.

1. Introduction

Cambodia is a low-middle income country that has differences of economic development levels between rural and urban areas. Throughout Cambodia it has been had remarkable economic growth over the last ten years, and the nation has made significant strides in reducing poverty [18]. Even though there has been significant progress in the past to reduce poverty, poverty is still widespread in Cambodia, especially in rural regions [15]. However, Cambodia's economic growth and poverty reduction have improved, but a wealth gap persists, especially in rural areas, exacerbated by the COVID-19 pandemic [19] [17]. In 2017, the agricultural sector accounted for approximately 19.1% of the country's GDP. Although the agricultural share of GDP has been declining, the sector itself is still experiencing growth [11]. Agriculture has a significant role in reducing poverty in Cambodia, decreasing the poverty rate from 50% in 2007 to 9.4% in 2017. Agriculture played a significant role in reducing poverty in Cambodia, decreasing it from 50% in 2007 to 9.4% in 2017. Employment in non-agricultural sectors, especially among male farmers, increased their yearly earnings [17]. However, incomes of rural and urban households generated from different sources. These include employment, self-employment such as agriculture and non-agriculture, owner occupied house, and property income. The study aims to explore rural and urban income differences. These include self-employment incomes, disposal and non-disposal incomes.

1.1 Research Objectives and Hypotheses

   1) To explore the different levels of employment income between rural and urban inhabitants in Cambodia

Ho: There is no statistically significant difference of salaries among rural and urban inhabitants

   2) To explore the difference of self-employment incomes among rural and urban inhabitants in Cambodia

Ho: there is no statistically significant difference of self-employment incomes among rural and urban inhabitants in Cambodia

   3) To explore the difference of disposal incomes among rural and urban inhabitants in Cambodia

Ho: there is no statistically significant difference of disposal incomes among rural and urban inhabitants in Cambodia.

2. Review of the Literature

Policy makers, scholars, and individuals agree that having an income is essential to have access to the resources needed to maintain one's standard of living [10-11]. The standard of living is the possession of durable commodities, such as television, and housing feature, such as the availability of power [13]. A study, on possibilities of increasing the standard of living of the population of the regions in socio-economic development conducted by [7].

indicated that the population's standard of living is defined in the economic literature as the extent to which people's material and spiritual requirements are met. A more thorough meeting of the population's wants and requests for both material and non-material advantages is the foundation for raising the standard of living and quality of life in our nation [4].

2.1 Household Income

Micro and Small Enterprises (MSEs) aided in the creation of jobs, economic expansion, and revenue for the neighborhood [2] [3]. MSEs sometimes are considered a self-employment job. Due to its ease of entrance, self-employment equalizes inequality by giving people income opportunities; it also fosters a competitive climate among self-employed people, thereby increasing inequality [20]. A study on gender disparity in livelihood diversification among rural households in Osogbo agricultural development program zone of Osun State, Nigeria using; multiple regression and descriptive data by Akintunde [2] indicated that prior to livelihood diversification, the average annual income of male and female household heads was N195,200 ± 4,135 and N220,203 ± 5,300, respectively. Following livelihood diversification, the average annual income for male and female household heads was N206,195 ± 6,540 and N275,105 ± 4,100, respectively. Approximately 45-50% of farming households engage in various income diversification strategies [1]. Sultana [16] revealed that "socio-economic status and access to formal financial markets play a positive role in fostering income diversification". Rural households with higher education levels and greater diversification ability are likely to have more diverse income sources [9].

2.2 Self-employment income

Self-employed workers in rural areas tend to earn lower incomes compared to their urban counterparts, despite working longer hours [5] [14]. In Angola and Brazil, a large share of rural self-employed workers (46% and 65% respectively) earns hourly incomes below the second quintile of the national distribution of labor income [6]. The rural-urban gap in self-employment income can be partly explained by differences in human capital and occupational structures between rural and urban workers. In Angola, about 20 percentage points of the 42% lower average income of rural self-employed workers is due to their lower education levels and different occupations compared to urban self-employed [6]. Across Europe, the search results show that workers in rural areas are more likely to be self-employed than those in urban areas, despite the more challenging working conditions and lower earnings in rural self-employment [8]. This suggests self-employment may serve as an alternative to salaried employment in rural areas with limited job opportunities. The rural-urban disparities in self-employment income appear to vary across different welfare state regimes in Europe, with the results indicating differences in the conditional correlations between self-employment, rural location, and earnings [8]

3. Methodology

3.1 Data source

The research examines three types of incomes among urban and rural residents: employment, disposable incomes, and self-employment incomes. It utilizes national data collected by the National Institute of Statistics, Ministry of Planning, Cambodia, spanning from 2009 to 2021 as shown in **Table 1** below. Data for the year 2018 is unavailable due to the absence of reliable sources.

Table 1 – Table of Employment income, Self-employment income, and Disposal income between Urban and Rural from 2009-2021

Items (*in Thousand KHM Riel*)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Employment income (Urban)	381	434	443	552	576	750	873	1,034	1,150	0	1,490	1,490	2,439
Employment income (Rural)	167	202	241	309	403	518	631	742	913	0	943	943	889
Self-Employment income (Urban)	664	1,012	689	904	1,454	1,024	1,225	1,298	1,212	0	811	811	979
Self-Employment income (Rural)	382	476	465	474	474	580	599	661	748	0	696	696	878
Disposal Income (Urban)	1,089	1,468	1,158	1,493	2,103	1,858	2,922	2,446	2,482	0	2,546	2,546	2,180
Disposal Income (Rural)	554	676	713	813	928	1,155	1,319	1,507	1,749	0	1,862	1,862	1,497

Source: National Institute of Statistics [5].

Descriptive statistics presented in **Table 2** provide an overview of the incomes from employment, self-employment, and disposable incomes for a sample of 26 observations. The analysis highlights the following key including: Salary Income, Self-Employment Income and Disposable Income. The mean salary income is 569.08 with a standard deviation of 496.001, indicating substantial variability in salary incomes among the households. The minimum recorded salary income is 0, while the maximum is 2439, suggesting significant disparities in salary earnings within the sample. More, the average self-employment income is 929.46, with a standard deviation of 359.693. This category also shows notable variation in earnings. The minimum and maximum self-employment incomes are 0 and 1454, respectively, reflecting a wide range of self-employment income levels among the households. Finally, the

mean disposable income is 1421.69, with a higher standard deviation of 807.483, indicating considerable differences in the disposable incomes of the households. The disposable income ranges from 0 to 2922, underscoring the variability in the overall economic welfare of the sample population.

Table 2 - Descriptive Statistics

Descriptive	N	Mean	Std. Deviation	Minimum	Maximum
Salary	26	569.08	496.001	0	2439
Self-Employment	26	929.46	359.693	0	1454
Disposal	26	1421.69	807.483	0	2922

3.2 Data Collection and Analysis

In this study, we test the null hypotheses regarding incomes from employment, self-employment, and disposable incomes between rural and urban households using national data collected by the National Institute of Statistics, Ministry of Planning, Cambodia. The dataset spans from 2009 to 2021, excluding 2018 due to the lack of reliable data for that year. Our analysis aims to identify significant differences in these income categories between rural and urban areas. To test the hypotheses, we use the following formula to calculate the test statistic t:

Test statistic: $\qquad (X_1 - X_2)/sp(\sqrt{1/n_1 + 1/n_2})$

Where X_1 and X_2 are the sample means, n_1 and n_2 are the sample sizes, and where S_p is calculated as:

$$S_p = \sqrt{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2/(n_1 + n_2 - 2)}$$

where S_1^2 and S_2^2 are the sample variances. If the p-value that corresponds to the test statistic t with $(n_1 + n_{2-1})$) degrees of freedom is less than the chosen significance level (common choices are 0.10, 0.05, and 0.01) then we can reject the null hypothesis [5].

4. Result

4.1 Non-disposal Income (Salary) between rural and urban inhabitants

Ho: There is no statistically significant difference of salaries among rural and urban inhabitant: In the analysis presented in **Table 3**, both versions of the test yield nearly identical outcomes. Therefore, we will focus on the results from the first row. The test statistic (t) is calculated to be 0.386, with 24 degrees of freedom (df). The two-tailed p-value associated with this t-value is 0.703. The mean difference between the two-sample means is 76.462, with a standard error of the mean difference being 198. The 95% confidence interval for the true difference between the two-population means is also provided. Given that the p-value (0.703) is not less than the significance level of 0.05, we do not have sufficient evidence to accept the hypothesis. Consequently, we reject the hypothesis, concluding that there is no statistically significant difference in the mean incomes between rural and urban households.

Table 3 - Non-disposal Incomes (Salary) between rural and urban households

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Salary	**Equal variances assumed**	.813	.376	.386	24	.703	76.462	197.945	-332.077	485.000
	Equal variances not assumed			.386	18.250	.704	76.462	197.945	-338.997	491.920

4.2 Self-employment Income between rural and urban inhabitants

Ho: there is no statistically significant difference of self-employment incomes among rural and urban households in Cambodia: In the results shown in **Table 4**, both versions of the test produce almost identical findings. Therefore, we will consider the results from the first row. The test statistic (t) is 0.000, with 24 degrees of freedom (df). The two-tailed p-value corresponding to this t-value is 1. The mean difference between the two-sample means is 0.000, with a standard error of the mean difference being 144. Additionally, the 95% confidence interval for the true difference between the

two-population means is reported. Since the p-value (1) is not less than the significance level of 0.05, we lack sufficient evidence to accept the hypothesis. Thus, we reject the hypothesis, concluding that there is no statistically significant difference in the mean self-employment incomes between rural and urban households.

Table 4 - Self-employment incomes of rural and urban households

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Self-Employment	Equal variances assumed	.000	1.000	.000	24	1.000	.000	143.993	-297.186	297.186
	Equal variances not assumed			.000	24.000	1.000	.000	143.993	-297.186	297.186

4.3 Disposal Incomes of rural and urban households

Ho: there is no statistically significant difference of disposal incomes among rural and urban inhabitants in Cambodia: Table 5 shows that, the two versions of the test produce nearly identical findings, so we will focus on the results from the first row. The test statistic (t) is calculated to be 1.97, with 24 degrees of freedom (df). The two-tailed p-value associated with this t-value is 0.06. The mean difference between the two-sample means is 592, with a standard error of the mean difference being 300. Additionally, the 95% confidence interval for the true difference between the two-population means is reported. Given that the p-value (0.060) is not less than the significance level of 0.05, we lack sufficient evidence to accept the hypothesis. Therefore, we reject the hypothesis, concluding that there is no statistically significant difference in the mean disposable incomes between rural and urban households.

Table 5: Disposal Incomes of Rural and Urban Households

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Disposal	Equal variances assumed	3.183	.087	1.974	24	.060	591.846	299.828	-26.968	1210.660
	Equal variances not assumed			1.974	20.046	.062	591.846	299.828	-33.492	1217.184

5. Conclusion

According the results of the study, we can conclude that the incomes earned from different sources of rural and urban households are not statistically significant different. National Institute of Statistics Ministry of Planning, in its report of Cambodia Socio-Economic Survey 2021, indicated that the urban self-employment incomes per month is US$280 and the rural self-employment incomes per month is USD265. From this figure, the disparity of income between rural households and urban households are not significant different.

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