The minimum wage change effect to the household saving in Thailand in 2013

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ABSTRACT

This study investigates the correlation between an increase in the minimum wage and savings within low-income households. Utilizing data from the 2013 Household Socio-economic Survey (SES) conducted by the National Statistical Office (NSO), the research focuses primarily on the household head. Through econometric analysis, a positive and statistically significant relationship is identified between the difference in minimum wage between 2011 and 2013 and the average monthly per capita income within the region, and household savings. Additionally, the study reveals that changes in minimum wage during the years 2011 and 2013 influenced the 2013 minimum wage change. Notably, positive outcomes are observed for household characteristics such as marital status and location, with married household heads residing in municipal areas exhibiting a favorable impact on savings. Unexpectedly, findings also indicate that households with children are more inclined to save money compared to those without children, and contrary to assumptions, a higher education level of the household head results in a smaller percentage of savings. Given the positive correlation between minimum wage and low-income household savings, policy interventions aimed at assisting low-income households in saving money could be explored by the government.

Keywords: household saving, minimum wage, regression

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Introduction

During the general election in July 2011, the Pheu Thai Party won the election by announcing the minimum wage policy, increasing by 300 baht across the entire country (Durongkaveroj, 2022). Blue-collar employees, such as those who work in manufacturing, construction, warehousing, agriculture, and low-income households, are the Pheu Thai Party's target voters, particularly in the North and Northeast regions of Thailand. Minimum wage in Thailand began in 1973 when the ministry of Interior announced for the first time a minimum wage for four provinces (Paitoonpong, Akkarakul, & Sukaruji, 2005; Durongkaveroj, 2022), namely Bangkok, Samut Prakan, Nonthaburi, and Pathum Thani, according to the national labor research center (Hansri, 2015); Thammasat University Research and Consultancy Institute (2004). Government involvement after winning the election on April 1, 2012, means the minimum wage policy will be implemented in the Bangkok Metropolitan Region, Phuket, and the entire country on November 20th, 2012.

The Fair Labor Standards Act of 1938, the U.S. Congress first established a minimum wage. This policy changes the minimum wage in each province of Thailand from different minimum wages to a single minimum wage of 300 baht for every province in Thailand, according to Lathapipat and Poggi (2016), called “From many to one minimum wage effect in Thailand.” Phayao, for example, had the lowest minimum wage in Thailand at the time, around 159 baht per day, an increase of 88.68 percent. Bangkok had the lowest minimum wage change around 39.53 percent, and the national-level average was increased by 71.83 percent.

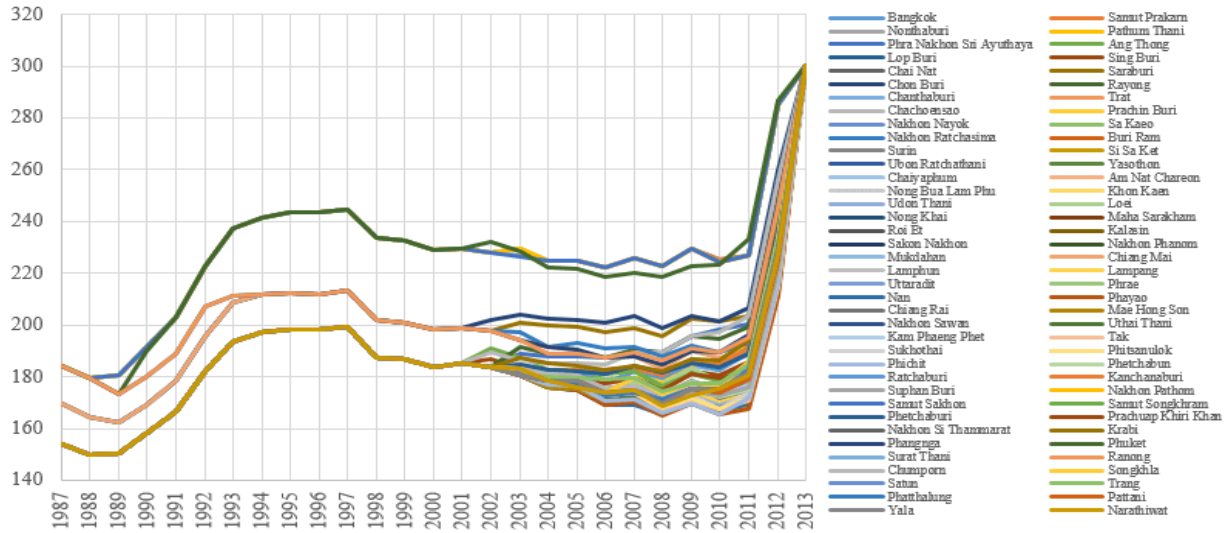

Figure 1: From many to one minimum wage change in Thailand between 2011 and 2013 (Lathapipat & Poggi, 2016)

In this study, we will examine how changes in the minimum wage affect the savings of low-income households, using a cross-sectional dataset from the Household Socio-economic Survey 2013 provided by the National Statistical Office. In this sample set, there are 42,738 households (National Statistical Office of Thailand, 2020). The Household Socio-economic survey defines savings as "the excess of income over expenditure on necessary items for daily life," as well as defined by Alamgir (1976) as "the excess of current income over current consumption expenditure." In 2011, according to Vansuriya (2023), the average household savings were 6,254 baht. In 2012, this increased to 6,437 baht, or 2.93 percent, in 2013. According to Hansri (2015), Thai agricultural households' savings, representing households in which the average monthly income per person is less than 15,000 baht, are divided into four distinct categories. The first group has an income of less than 5,000 baht, with approximately 73.36 percent; the second group has an income of 5,001-10,000 baht, with approximately 71.72 percent; the third group has an income of 10,001-15,000 baht, with only 3.13 percent; and the fourth group has an income of more than 15,000 baht, with approximately 3.76 percent (see in figure 2).

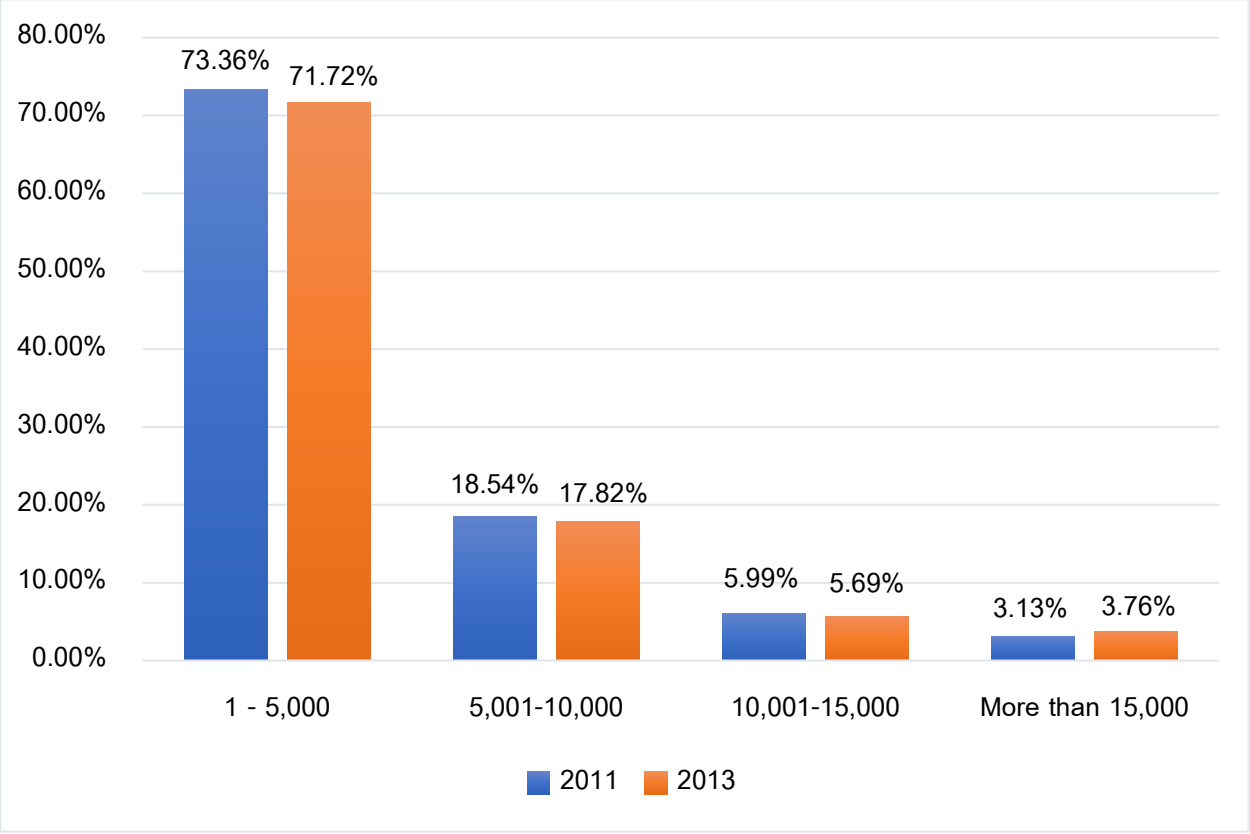

Figure 2 The average agricultural household saving in 2011 and 2013

(Hansri, 2015)

The objective of this study is to measure the relationship between the minimum wage increase and its effect on saving in low-income households. We predict that the minimum wage change coefficient will have a positive relationship with household savings as dependent variables. According to Katona (1949), those whose incomes increase will not increase their consumption proportionally and will therefore save the largest amounts. The scope of this study utilizes ordinary least square (OLS) regression analysis, with reference to Ceritoğlu (2013), who used OLS regression in analyzing income risk and household saving. For this topic, the aim is to study the effect of minimum wage change in 2011 and 2013 on low-income household savings.

The definition of a low-income household is based on the age of the household head being between 18 and 60 years old, their education level being below or equal to that of compulsory education, and their average monthly income per capita at or below the 40th percentile of the sample of household survey. The relationship between low-income household saving and minimum wage change in 2011 and 2013 using SES data is the main contribution of this paper.

The second section of this paper presents a literature review of saving and minimum wage in developing countries and specifically in Thailand. The third section outlines the methodology used. The fourth section presents the econometric results, and the fifth and final sections contain the discussion and conclusion.

Literature reviews

According to Aidoo-Mensah (2018), Keynesian saving theory and the non-Keynesian saving theory explain the saving and income relationships among households. Keynesian saving theories claim that disposable income (income after taxes) is the factor that determines saving, implying a positive relationship between disposable income and saving. The non-Keynesian theory, such as the permanent income hypothesis according to Carroll (2001), establishes a relationship between household consumption and its anticipated long-term average income. The expected long-term income is seen as the amount of permanent income that can be securely spent by the household. To protect against future income declines, a household will save only if its current income exceeds its expected permanent income.

According to Ceritoğlu (2013), the effect of income risk on household savings was measured using household Budget surveys from 2003 to 2009 collected by the Turkish Statistical Institute (TURKSTAT) under the precautionary saving hypothesis. The results show a positive relationship between permanent income and household savings. Following Guariglia and Kim (2003), who measured wage uncertainty to test the precautionary saving hypothesis as income risk on households saving in Russia, using the Russian Longitudinal Monitoring Survey from 1994, 1995, 1996, and 1998. The results show that households in Russia support the precautionary saving and have strategies to secure employment to prevent income risk on household saving

Aaronson et al. (2012) found that as the minimum wage increases, expenditures on durable goods also increase. This paper demonstrates that households receiving minimum wage prior to a minimum wage increase experience an increase in consumption, a rise in debt due to the purchase of durable goods, and a need to borrow money.

In the case of Thailand, previous research on minimum wage and low-income households by Durongkaveroj (2017) is notable. This paper utilizes data from the Household Socio-Economic Survey in 2013 collected by the National Statistical Office (NSO) and divides groups of households by the poverty line established by Thailand's National Economic and Social Development Board (NESDB), defining households with consumption expenditure below 2,572 baht per month as poor households and those above as non-poor households. This paper addresses two research questions: firstly, whether the poor benefit positively or negatively from the minimum wage adjustment, and secondly, whether most of the poor's increased income is spent on food. The findings indicate that a significant increase in the minimum wage has no statistically significant effect on employment. Interestingly, the ratio of food expenditure to the minimum wage increase is not high. However, the results suggest a significant increase in poor household expenditure, particularly on non-consumption goods and services, with no statistically significant increase in debt repayment.

Carpio, Messina, & Sanz-de-Galdeano (2018) reveal that increases in minimum wages notably influence the likelihood of employment in sectors not covered by these adjustments, particularly among individuals with elementary education backgrounds. However, this impact is negligible among other segments of the labor force. Leckcivilize (2015) points out that the minimum wage's ability to diminish overall wage inequality in Thailand is hindered by high rates of non-compliance and inadequate law enforcement, particularly prevalent within the informal economy. The majority of research on minimum wage policies in developing nations presents findings that endorse their efficacy in mitigating wage disparities.

Methodology

In this study, we utilize the Household Socio-economic Survey (SES) collected by The National Statistical Office (NSO) between 2013. This survey is conducted annually using a questionnaire to collect information on household members and expenditures. The objective of this survey is to collect data about the economics and social aspects of households, including a summary of household information, housing characteristics, expenditure on goods and services, expenditure on beverages and tobacco, and income during the past 12 months.

The focus of this paper is on the minimum wage for low-income households. The sample consists of individuals aged 18 to 60 who are employed and of working age, as determined by the head of the household. Excluded from the sample size in SES are housewives, students, children, and the elderly, as well as those who

are unable to work due to illness or disability, are retired, or cannot identify their occupation type. Within the scope of the sample, the education level of the household head is equivalent to or lower than the minimum level required by legislation. In Thailand, students are required to attend school for nine years, starting with elementary school years 1 to 6 (Prathom 1 to 6) and lower secondary school grades 7 to 9 or, in Thai, Matthayom 1 to 3 (Office of the Education Council, 2017). This includes 6 years of elementary school and 3 years of lower secondary education. According to Sani et al. (2018), low-income households are comprised of three groups: the top 20%, the middle 40%, and the bottom 40%. In this sample set, we select the bottom 40th percentile of average monthly total income per capita below or equal to 5,952 baht for low-income households.

The dependent variable is household saving. According to the National Statistical Office of Thailand (2020), household saving is defined as the excess of income over expenditure on necessary items for daily life. The remaining and unspent income constitutes saving. Therefore, we define household saving as the average monthly total income per household minus the average monthly total expenditures per household.

As independent variables, we have the difference in minimum wage between 2011 and 2013, and as a second explanatory variable, we have the income per capita as measured by the average monthly total income of household members. The household characteristics categories include the number of children under the age of 15 in the household as dummy variables, with a value of zero if the household head does not have children and a value of one if the household head does have children. The marital status of the head of the household is represented as dummy variables: if the head of the household is married, it is assigned a value of one; otherwise, it is assigned a value of zero, including single, divorced, separated, and marriage but unknown status. If the head is married, the value is one. Education of the household head being under compulsory education or lower than secondary year 10 (Matthayom 3) equals zero, while a group of households with a higher education level than compulsory education equals one. The area where the household lives is categorized as urban if it is in a municipal area (equals zero) and as non-urban if it is outside an urban area (equals one). The region where the household lives in Thailand is divided into five regions: Bangkok, Central, North, Northeast, and South (See Table1).

Table 1 Descriptive variables

Variables	Description
Difference in minimum wage	The difference minimum wage between 2011 and 2013
Per capita income	Per capita average monthly income
Having children or not	Children under 15 years
No child	= 0 if household no child (base group)
1-8 Children	= 1 if household has children
Marital status	
Otherwise	= 0 if household head is Never married, Widowed, Divorced, Separated and Married but unknown status (base group)
Marriage	= 1 if household head is marriage
Education	
Compulsory education	= 0 if household head is under or graudaute compulsory education (base group)
Higher than compulsory education	= 1 if household head is graduate higher than compulsory education
Area	
Municipal areas	= 0 if household live in municipal area (base group)
Non-Municipal areas	= 1 if household live in non-municipal area
Region	
Bangkok	Base group = 0
Central	= 1 if household live in central region
North	= 1 if household live in north region
Northeast	= 1 if household live in northeast region
South	= 1 if household live in south region

As the previous research on household saving, the equation on measures the saving using.

$$S_h = \alpha_0 + \beta Y_h^p + \lambda U_h + \sum_{K=1}^{k} v_k Z_h + U_h$$

According to Cerito**ğ**lu (2013) The variables of S_h is household saving, h is household level. Y_h^p is the estimation of the permanent component of the household head's income, for the second variables U_h is the approximation of the household head's labor income risk and Z_h is household characteristics.

Therefore, the model are written as:

$$lnS_{h2013} = \beta_0 + \beta_1 \Delta MW_j + \beta_2 PC\ HH\ inc + \beta_3\ children + \beta_4\ Marital\ status + \beta_5\ Edu\ of\ HH + \beta_6 Area + \beta_7\ central + \beta_8\ North + \beta_9\ north\ east + \beta_{10}\ south + \varepsilon_h$$

The dependent variable (lnS_{h2013}) is the natural log of household saving in 2013, based on the difference between the average monthly total income and the average monthly total expenditures. The natural log of this variable is applied to ensure its distribution is normal. (See figure 5). h , which is low-income household level. The independent variables are ΔMW_j which represents the difference between the minimum wage in 2011 and 2013 and j, which represents the province of the household (See appendix 1). PC HH inc is the average monthly income per capita. Children are dummy variable for whether a household has children or not. Marital status dummy variable indicates whether a household is married or non-marriage. Edu of HH is a dummy variable indicating whether the household head's education is less than or equal to the compulsory level and greater than the compulsory level. Area in which a household lives as dummy variables are municipal areas and non-municipal areas. The final variable is the region, which is divided into five categories: central, north, northeast, and south, with Bangkok serving as the base and ε_h is error term.

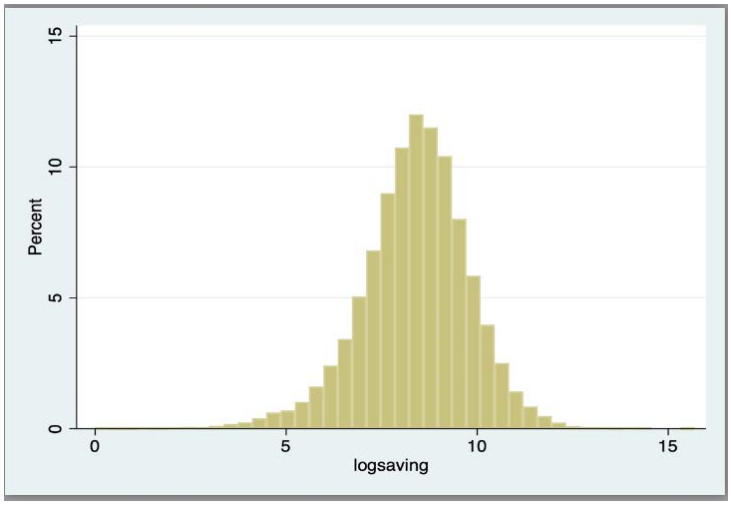

Figure 5: Histogram of saving

Results

Table 2. Descriptive statistics of household

Descriptive Statistics				
Variables	Household saving >0 (%)	Median	Household saving >0 (%) and per capita income <=5952	Median
Having children or not	**72.37%**	**2470**	**55.19%**	**378**
No child (0)	75.05%	2573	51.39%	74
Children(1-8)	68.68%	2300.5	57.44%	629
Marital status	**72.37%**	**2470**	**55.19%**	**378**
Marriage	73.74%	1815	54.33%	219
Otherwise	71.89%	2824.5	55.38%	439
Education of household	**72.45%**	**2560.5**	**54.71%**	**366**
Compulsory education	69.15%	1848	55.09%	386.5
Higher than compulsory education	78.77%	4545	52.22%	156.5
Area	**72.37%**	**2470**	**55.19%**	**378**
Non-Municipal areas	69.23%	2034	54.01%	319
Municipal areas	74.33%	2802	56.30%	428
Region	**72.37%**	**2470**	**55.19%**	**378**
Bangkok	75.28%	4808	42.62%	-1915
Central	76.20%	2760	56.42%	463
North	69.37%	2492	63.22%	835
Northeast	64.40%	1637.5	48.96%	-86
South	72.08%	2674	54.60%	400.5

According to Table 2, a household without children has a more positive household savings rate of 75.05% compared to a household with more than one child, which has a positive household savings rate of 68.68%. When the household head is married, approximately 2% more positive savings are observed compared to when the household head is not married. Additionally, a household with a head under compulsory education has a positive household savings rate of 69.15%, whereas a household with a head with higher education under compulsory education has a positive household savings rate of 78.77%. In municipal areas, 74.33% of households have positive savings, while only 69.23% of households in non-municipal areas exhibit

positive savings. The Central region boasts the highest savings rate at 76.20%, while the Northeast region has the lowest at 64.40%. Bangkok, North, and South regions have respective positive savings rates of 75.28%, 69.37%, and 72.08% (See Figure 3).

For the category of low-income households, with an average per capita monthly income less than or equal to the 40th percentile (5952 baht per month), approximately 6% more is saved by families with children compared to those without children. Moreover, households with a married head exhibit only slightly less positive savings than those without a married head. Approximately 55.09% more households with a head under compulsory education have positive savings compared to households with a head with a higher education level. Regarding the area, households living in municipal areas save more income than those residing in non-municipal areas. It is observed that low-income households in the North have the highest savings rate, at 63.22%, while those in Bangkok have the lowest rate, at 42.62%. The Central, Northeast, and Southern regions have respective savings rates of 56.42%, 48.96%, and 54.60% (See Figure 4).

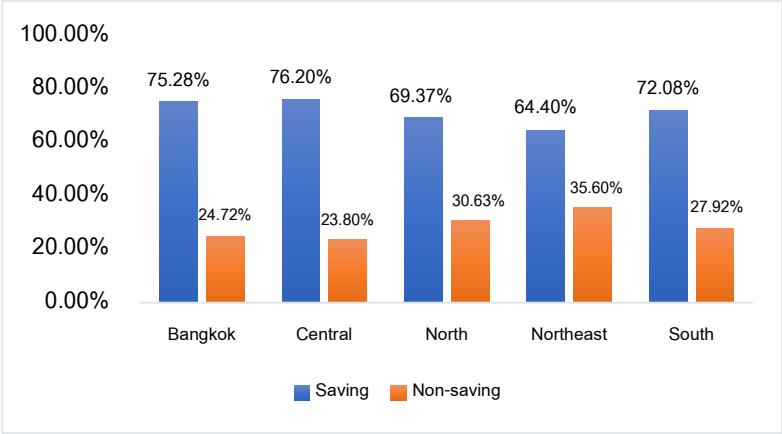

Figure 3: Regional household saving in Thailand 2013 (NSO, 2013)

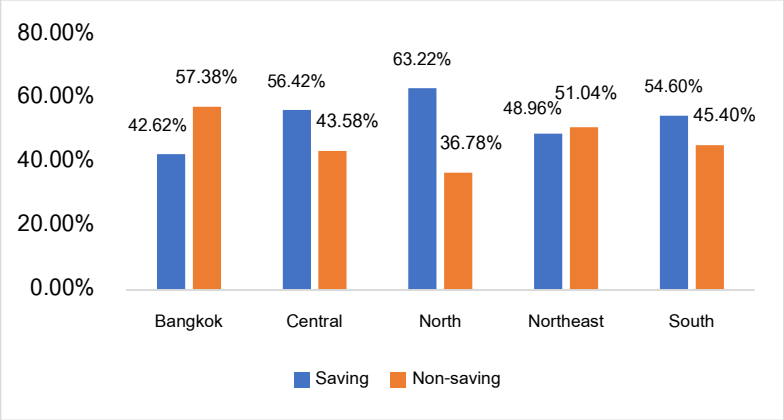

Figure 4: Regional low-income household savings in Thailand in 2013 (NSO, 2013)

Table 3: result of regression (OLS)

Variables	lnsaving
Difference of minimum wage	0.00709**
	(0.00179)
Average monthly total income per capita	0.00042**
	(0.000014)
Having children or not	0.61693**
	(0.0332318)
Marital status	0.32987**
	(0.0409294)
Education level	-0.18938**
	(0.0460207)
Area	0.09558*
	(0.0294074)
Region	
Bangkok (based)	
Central	-0.14961
	(0.141417)
North	-0.04910
	(0.1555212)
Northeast	0.01468
	(0.1534045)
South	0.00723
	(0.1467756)
constant	4.2236***
	(0.2213526)
Number of Observation	5,501
R-squared	0.1768
Robust standard errors in parentheses	
** p<0.01, * p<0.05,	

The econometric result indicates a statistically significant impact on the savings rate of low-income households resulting from the change in the minimum wage that occurred between 2011 and 2013. For every 1 baht change in the minimum wage, low-income households experience an increase in savings of 0.7 percent. Additionally, for every 1 baht change in the per capita average income, low-income households see an increase in savings of 0.042 percent, as stated by Ceritoğlu (2013). The relationship between permanent income and household saving is positive, as is the relationship between income growth and saving.

This study also reveals that households with children can save 61% more than households without children, corroborating the findings of Kelley (1973), who observed that families with one or two children tend to increase their savings, while families with more than three children tend to decrease their savings.

Marital status shows a positive relationship with household saving, with more than 33% of non-married households exhibiting higher savings, according to a study by Grinstein-Weiss, Zhan, & Sherraden (2006). Married households have a greater impact on reducing poverty compared to non-married couples.

Contrary to expectations, households with a head having higher education than compulsory education save 18.93% less than households with a head having a degree below or equal to compulsory education, similar to the findings of Rha et al. (2006), who observed that households with high school graduates tend to save more money than those with college and graduate degrees.

Regarding the area of non-municipal households, rural households are less likely to save compared to municipal households, with only 9.5% of municipal households saving, as pointed out by Duflo and Banerjee (2011). Poor households in rural areas face additional costs, such as transportation fees, to deposit money at financial institutions, as there are fewer financial institutions in rural areas compared to urban areas. Moreover, the security for saving money at home is not assured in rural areas, leading some impoverished households to save at a negative saving rate, relying on middlemen, but incurring additional costs for this convenience. The region where the household's head lives is statistically insignificant.

Discussion

The purpose of this study is to investigate how an increase in the national minimum wage might impact the propensity of households with low incomes to save money for the future. The findings suggest that adjustments to the minimum wage and increases in the average monthly total income per capita have a significant positive effect on low-income households with minimum wage-earning household heads. According to Ceritoğlu (2013), changes in household income are positively correlated with household savings and income risk, mirroring similar findings observed in Turkey. However, this study is limited by the proxy used for household saving, as household saving is defined as the average monthly total income minus average monthly total expenditures per household. Household-reported income may be less than actual income due to households' reluctance to disclose their true income and other sources of income, resulting in lower estimated savings.

Additionally, the SES survey only provides quantitative information without qualitative insights. For future studies on low-income households, qualitative interview techniques such as in-depth interviews could be employed to gather data on their savings behavior and financial practices following changes in the minimum wage.

Policy Implementation

Authors suggest the following explanations should be considered on the implementation. The implications for Thailand's policies, as revealed in this study, are varied. Firstly, it suggests the need for periodic adjustments to the minimum wage, ensuring it keeps pace with the cost of living and encourages saving among low-income households. Additionally, implementing supplementary income support initiatives like cash transfers or subsidies could further boost disposable income and promote saving habits. Prioritizing the enhancement of financial literacy and access to formal financial services would empower individuals with the necessary knowledge and resources for effective saving. To overcome data limitations and guide evidence-based policymaking, robust monitoring and evaluation mechanisms are essential. Collaboration with the research community could facilitate comprehensive studies on the interplay between minimum wage policies, income fluctuations, and saving behaviors. Strengthening social safety nets and labor market regulations is crucial to reducing financial vulnerability and fostering stability for low-income workers. Adopting a holistic approach that addresses income generation, saving behavior, and broader socioeconomic factors is vital for enhancing the financial well-being of Thailand's most vulnerable populations.

Conclusion

This study examines the relationship between an increase in the minimum wage and savings among low-income households. The household socio-economic survey (SES) conducted in 2013 by the National Statistical Office (NSO) provided the data for this study. This dataset, which primarily reflects household savings, mainly focuses on the household head. The econometric study revealed a positive and statistically significant relationship between the difference in the minimum wage between 2011 and 2013 and the average monthly per capita income in that region with household savings. Furthermore, the study found that the minimum wage changes in 2011 and 2013 had an impact on the 2013 minimum wage change. The results were positive for household characteristics such as marital status and location, indicating that if the household head is married and lives in a municipal area, there is a positive effect on savings.

Unexpected results were also observed for household characteristics; for instance, families with children were found to be more likely to save money than households without children. Similarly, contrary to expectations, the education level of the household head was found to have a contrasting effect on savings, with a higher level of education than compulsory education resulting in a smaller percentage of savings.

As a consequence of the positive relationship between the minimum wage and low-income household savings, the government could develop policies aimed at assisting low-income households in saving money.

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