

The Solutions between Personal Income and Household Debt Problem in Thailand

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Abstract

Due to the numerous effects of household debt, low personal income, current spending behaviours, and rising consumer living standards, the Thai economy's capacity to survive depends in part on credit markets. Policymakers and other pertinent stakeholders are proactive and have a concurrent awareness of the household debt and personal income of customers. The purpose of this research is to highlight the relationship between average personal income and household debt in many regions of Thailand, including the Central region and Bangkok, the Northern, the Northeastern, and the Southern regions. A four-quadrant chart or importance performance analysis matrix (IPA) was utilised to describe the perception of key attribute interpretation. According to the results, the provinces with the highest risk of debt include two in the Southern area, nine in the Northern, twelve in the Northeastern, and six in the Central region and Bangkok. In terms of preventing household debt and financial risk to households, the result of the study is beneficial for the concurrent development of debt and income policies as well as for future patterns of household spending behaviour, preventing economic crises, and raising personal income in all regions of Thailand.

Keywords: Personal Income, Household Debt, Importance Performance Analysis (IPA), Thailand

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แนวทางการแก้ปัญหาระหว่างรายได้ส่วนบุคคลกับ ปัญหาหนี้ครัวเรือนในประเทศไทย

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บทคัดย่อ

เนื่องจากผลกระทบหลายประการที่เกิดจากหนี้ครัวเรือน รายได้ส่วนบุคคลที่ลดลง พฤติกรรมการใช้จ่ายในปัจจุบัน และมาตรฐานการครองชีพของผู้บริโภคที่เพิ่มขึ้น ความสามารถในการอยู่รอดของเศรษฐกิจไทยส่วนหนึ่งขึ้นอยู่กับตลาดสินเชื่อ ผู้กำหนดนโยบายและผู้มีส่วนได้ส่วนเสียที่เกี่ยวข้องต้องมีความกระตือรือร้นและตระหนักถึงปัญหาหนี้ครัวเรือนและรายได้ส่วนบุคคลของลูกค้านำไปพร้อม ๆ กัน การวิจัยนี้มีวัตถุประสงค์เพื่อเน้นความสัมพันธ์ระหว่างรายได้ส่วนบุคคลโดยเฉลี่ยกับหนี้ครัวเรือนในหลายภูมิภาคของประเทศไทย ซึ่งประกอบไปด้วยภาคกลางและกรุงเทพฯ ภาคเหนือ ภาคตะวันออก ภาคตะวันออกเฉียงเหนือ และภาคใต้ การวิจัยในครั้งนี้ใช้แผนภูมิสี่ควอดแรนต์หรือการวิเคราะห์ประสิทธิภาพที่สำคัญเมทริกซ์ (IPA) เครื่องมือนี้ถูกนำมาใช้เพื่ออธิบายการรับรู้การตีความคุณลักษณะที่สำคัญ จากผลการวิจัยพบว่าจังหวัดที่มีความเสี่ยงต่อการเป็นหนี้สูงสุด ได้แก่ ภาคใต้ 2 แห่ง ภาคเหนือ 9 แห่ง ภาคตะวันออก 12 แห่ง และภาคกลางและกรุงเทพฯ 6 แห่ง ในด้านการป้องกันหนี้ครัวเรือนและความเสี่ยงทางการเงินของครัวเรือน ผลการวิจัยที่ได้จะเป็นประโยชน์ต่อการพัฒนานโยบายหนี้และรายได้ไปพร้อม ๆ กัน รวมถึงรูปแบบพฤติกรรมค่าใช้จ่ายภาคครัวเรือนในอนาคต อีกทั้งยังการป้องกันวิกฤติเศรษฐกิจ และการเพิ่มรายได้ส่วนบุคคลซึ่งขึ้นอยู่กับแต่ละภูมิภาคของประเทศไทย

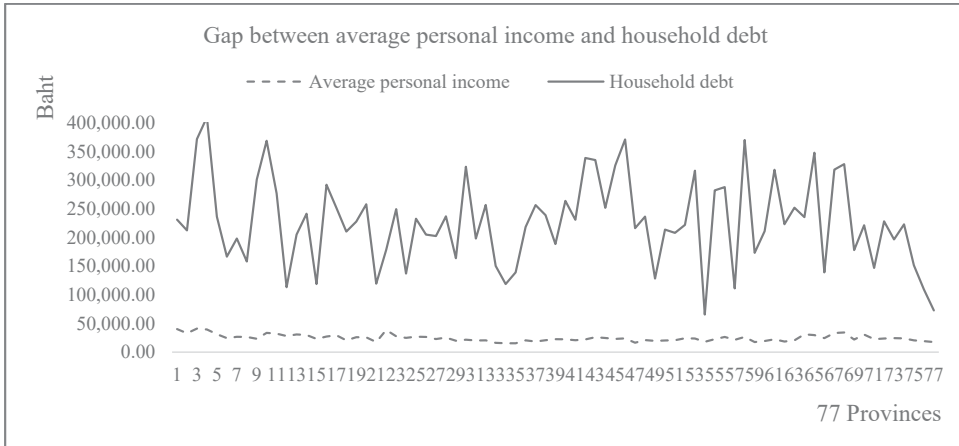
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1. Introduction

Household debt is defined as all liabilities of households that occur when household income cannot adequately support the expense of necessary household consumption. Rising household debt can be beneficial for welfare to the desire of household consumption need to smooth their lifetimes and to purchase durable goods such as houses or cars (Modigliani & Brumberg, 1954). For the economy as a whole, rising household debt is a major concern of economic policymakers. As household debt in an economy keeps rising without limit, a point will be reached when large-scale defaults on loans occur and a financial crisis both household and economy will be considered unavoidable. Thailand is experiencing a period of economic resilience to a high level of household debt. Because of this, there are various factors behind the swelling of household debt. The prolonged economic slowdown caused by the COVID-19 pandemic, low-income growth, high cost of living, and easy access to credit are regarded by policymakers as the key entities engaged in the financial sector.

In Thailand, household debt has risen steadily over the past two decades. The problem of inequality in Thai households has become a major contradiction in Thai society and worsened after the spread of COVID-19. In 2021, the average personal income was approximately 8 times lower than household debt. Figure 1 shows the high gap between average personal income and household debt in Thailand. In 2021, the average personal income in Thailand was highest in the Central Region and Bangkok, which amounted to approximately monthly 29,000 Thai Baht. Bangkok is the main urban hub in Thailand, with the highest population density compared to other regions in Thailand. Meanwhile, the average personal income in different regions in Thailand consisted of the Northern, Northeastern, and Southern was monthly 20, 21, and 25,000 Thai Baht, respectively (see figure 3). As average income inequality has widened in Thailand, what is the driving force behind the relatively decent economic growth? The study of the relationships between income inequality and household debt involving consumption behaviour has theoretical and practical significance.

Figure 1: shows the gap between average personal income and household debt



The study of the relationships between income inequality and household debt involving consumption behaviour has theoretical and practical significance. Theoretically, both life cycle and absolute income involve the relationship between income and consumption behaviour. Practically, due to the fact that income inequality in Thailand is becoming increasingly serious, it is necessary to pay more attention to the sustainability of consumption, especially when it involves household debt. Policymakers must consider income inequality as an important factor influencing debt, focusing on evaluating the relationships between income inequality, household debt, and consumption behaviour at the same time.

Due to the various problems happening at once, policymakers should act as a bridge to reduce the gap between average personal income and household debt. Therefore, in terms of theoretical significance and practical pertinence, it is of great importance to analyse the main cause and gap between average personal income and household debt in different regions in Thailand in order to determine that policymakers use categorical prioritisation to alter policies under the consumption behaviour by using region background (Kohlscheen et al., (2021).

Household debt is now an issue of concern for the sustainability of Thailand's economy, as the debt has continued to rise steadily to unprecedented levels. Meanwhile, a low average personal income has widened in many regions in Thailand. This concern should be taken seriously, particularly when considering the household debt and average income statistics of

Thai people classified by region. The statistics suggest that the household debt and average income in Thailand has remained a serious problem that must be solved by specific policy. The Bank of Thailand (BOT) acknowledges the importance of sustainably addressing Thailand's household debt problems and recognises that it should be addressed by utilising targeted measures to achieve the intended results. If concerns regarding household debt are left unresolved, the conduct of policies to foster macroeconomic and financial stability will become more challenging. This poses a significant challenge for the government, as government agencies should have implemented various measures to assist borrowers, such as the Bank for Agriculture and Agricultural Cooperatives (BAAC)'s debt moratorium for retail borrowers and increased loans used for occupational purposes. The Government Savings Bank's debt moratorium period is used for the borrower who is not obligated to make payments and also offered interest repayment options to better align with the debtor's current situation.

Therefore, it is important to resolve Thailand's household debt problems so that it does not become an impediment to achieving monetary policy objectives of maintaining price stability, supporting sustainable economic growth, and preserving financial stability. BOT and policymakers should have issued the directional measures on sustainable solutions to Thailand's household debt problems as part of policy implementation under the new Thai financial landscape. Meanwhile, the household sector is regarded as one of the key entities engaged in the financial sector. If households are free of over-indebtedness and able to manage their debt in a sustainable manner, these in turn will enhance economic and financial stability in the long run (Bank of Thailand, 2023).

This paper aims to analyse the frequency distribution of average personal income and household debt in Thailand. In addition, it also points to the related interpretation between average personal income and household debt in different regions, namely the Central region, Bangkok Northern, Northeastern, and Southern Thailand. For this point, this study demonstrates the gap between average personal income and household debt that may be master a perspective and evaluating an economic policy setting in order to support sustainable economic growth to reduce the gap and to prevent a household debt crisis. The result is beneficial not only for debt policy development but also for providing future households' consumption behaviour and pattern in terms of preventing both the country's debt crisis and its household financial risk.

2. Literature review

The provision of the financial sector for dealing with problems around household debt and personal income in Thailand is significant in terms of the impact on both micro and macro finance schemes. Personal incomes affecting consumption and debt defaults are the main factors through which risk from micro and macro finance schemes can be transmitted to the economy. According to the theory, an increase in consumption leads to an increase in expenditure by credit, which results in an increase in household debt for those whose income has direct effects on the economy. Because of this, talented policymakers with a sense of public duty should be supported to deliver more meaningful outcomes to citizens (Bank of Thailand, 2023).

2.1 Household's debt and income

The increasing household debt is a combination of the disposable income, consumption pattern and investment preferences. However, it is not only current income that affects households' consumption towards household debt increase; it also involves future income expectations (Ando & Modigliani, 1963). Households should adjust their current consumption on necessities relative to their income and will engage in borrowing to smooth out their lifetime consumption.

From this reason, household debt theory examines the reasons behind, implications of, and responses to the rising of household debt levels. This field integrates insights from macroeconomics, microeconomics, and behavioural economics. Friedman (1957) posits that people make consumption decisions based on their expectations of permanent income rather than current income. Developed by Modigliani and Brumberg (1954), this theory suggests that individuals plan their consumption and savings behaviour over their lifetime. They borrow when their income is low (typically in youth), save during their peak earning years (during strong growth rate), and dissave during retirement.

When the economy has strong growth rates and lower unemployment, people can expect to be more optimistic about their future income and economic conditions. Thus, more consumers will be willing to spend using debt or personal credit (Von Mises, 2013). Households' current ability to use their creditworthiness is a condition of their income. Income, therefore, is one of the most important economic variables affecting a consumer's ability, willingness, and

ultimately, need to access credit. In this case, the ease to consume using credit is an important economic variable distinction, especially on some types of debts such as personal debt, student debt, and agricultural debt. The solutions must respond well to the characteristics and root causes of debt problems on each phase of the debt journey, and the requirement to prevent negative economic impacts over the longer term. Dabelle (2004) argues that increased household indebtedness, in itself, is not likely to be the cause of negative economic impacts. In that respect, he stresses that the increased debt cost servicing in the debt journey relating to current personal income and different types of debt exposure can be an unfavourable macroeconomic.

However, Shi and Hendrick (2020) suggests that the policymaker, through both monetary and fiscal policy, provides a more accurate analysis and a more appropriate understanding of the institutional debt composition at the fundamental area and local sector towards types of household debt and average personal income, especially for the local area where there is various specialised household debt in different regions. In some regions of the country, the risk of a debt crisis and economic instability increases significantly as household debt levels rise. The gaps (household debt minus average personal income) of the lower and middle personal income households are much wider than the gaps of higher personal income. Policymakers need to understand credit market growth in order to properly guide households regarding debt across regions. For low average income households especially, policymakers need to perform analysis on the impact of household debt on consumption growth and also boost economic growth at the same time.

According to one point of view, rising household debt levels lead to an expansion of consumption due to helping stimulate the economy. Increased competition among lenders, including banks and other financial institutions, also leads to an expansion of consumption and sale by using credit because lower borrowing costs result in easier access to credit facilities, causing higher consumption (Prinsloo, 2002). In addition, high levels of lending could worsen a country's economic performance by making the banking sector vulnerable in the event of any negative shocks to the economy (Buch & Drages, 2018). Nevertheless, high debt-holding among households of high-income groups is less concerning, as this group tends to borrow for the purpose of acquiring income-generating assets such as properties and financial assets, which in turn helps them to cover the debt service. Moreover, high-income households tend to have higher debt holding because they can afford to repay the loans.

At the micro level, very few studies have examined the simultaneous gap between households' indebtedness and average personal income, especially in terms of consumption behaviour in developing countries. Hence, researchers have pointed out information about the gap in households' debt and average personal income by separating each region in Thailand. The advantage of this point is that the findings are stable and strong enough to describe the phenomenon of households' indebtedness and consumption behaviour and patterns in different regions of Thailand. Moreover, the results have also paid more attention to the role of households' characteristics, such as income groups, type of debt, gender of the household head, education level, and location, as the authentic determinants of households' consumption pattern known as type of expenditure and indebtedness. Baker (2015) suggests that households' characteristics will have varying impacts on any change on the horizon, and this brings with it both intriguing possibilities and cause for concern. Changes in consumption patterns have a substantial effect on employment and ultimately their society, and households' characteristics such as gender, geographical area and income groups. All of them would give a different response to decisions on consumption and indebtedness. Belabed et al. (2018) analysed the relationship between income gap and household debt according to the household's expenditure pattern. Those with a low income level reduced their savings and maintained their household's consumption to try to keep up with the consumption pattern of those with a high income level, resulting in an increase in households' expenditure using credit and debt expansion of both middle- and lower-income households. Bahadir et al. (2020) pointed out that the worsening of income inequality would lead to an increase in households' consumption by using credit, which would result in a greater impact of credit shock on consumption and further expansion of income inequality, ultimately, including problems with nonperforming loans (NPLs).

2.2 Thailand's household debt problems

Household debt at the macroeconomic level encompasses the collective impact of individual household debts on the broader economy. Several theories and concepts address how household debt can lead to systemic economic issues. There are some key points and theories related to household debt problems at the macro level. Eggertsson and Krugman (2012) pointed that high household debt can be addressed and limited by the effectiveness of monetary and fiscal policies such as limits on loan-to-value ratios and debt-to-income ratios. It can help prevent excessive household debt accumulation. Policies aimed at restructuring or

providing relief for household debt can help mitigate the negative economic impact of high debt levels. These can include mortgage modifications, principal reductions, and bankruptcy reforms.

In Thailand, the household debt and consumption are an economic unit vital in driving the country's economy, because they function simultaneously as both the owner of production inputs and the consumer. Household debt can help households smooth their consumption across their lifetime. However, when households are highly indebted, the consumption can be distorted. High households' debt impacts the monetary transmission mechanism in both positive and negative situations. If high household debt provides a positive impact, then it implies that the monetary policy can foster macroeconomic and financial stability in various areas. On the other hand, in terms of the negative impact of monetary policy, high household debt can make the economy more vulnerable to disruptions if there is a high level of household debt. Furthermore, rising household debt would also impede future economic growth as well as increasing the likelihood and severity of future economic crises (Chamornchan, 2019).

However, Thailand at present is facing the problem of a substantial rise in household debt. Households' borrowing can have positive effects on the economy if the borrower has adequate skills and knowledge to make use of the borrowed funds for the future income earning of debt payment. Thailand's household debt currently accounts for 86.6% of the country's nominal Gross Domestic Products (GDP) in 2023 and is above average for a country in the upper-middle income range. The data reached a high of 90.8% in March 2021, that is the highest in the region, and a record low of 40.6% in March 2003. At the household debt level, the high indebtedness among low personal income level is particularly worrying. Such a high level of household debt could be harmful and will risk the Thailand economy in several ways. In understanding the risk associated with household leverage, this is as important as keeping track of NPL and delinquency indicators, which are heavily influenced by cyclical economy effects.

Regarding the relationship between average income and household debt resulting from consumption pattern, both consumption and household debt default are the main channels through which risk from high household debt can be transmitted to the economy. However, household consumption is still an economic unit important in driving the country's economic development, because of its functioning simultaneously as both the private sectors of produc-

tion and the consumer behaviour, especially using credit consumption. In practice, Thailand at present is facing the problem of a substantial rise in household debt, because credit consumption can be favourable and/or dangerous for the country's development. Credit consumption can have positive effects on the economy if the consumer has adequate skills and knowledge to make appropriate use of the expenditure plan for future income earning (Maneejuk et al., 2021). Moreover, Jumpanoi and Wanasilp (2022) pointed out that, although borrowing can increase households' consumption and help raise GDP, in the short run, credit consumption plays a positive role to increase sales, production, profits and employment. However, in the long run, future household consumption may actually decrease when part of a household's future income must be set aside for loan repayment and other cost obligations.

Considering the household debt statistics of Thai people classified by the borrowing objectives, Thai borrowers primarily used loans for consumption purposes. The predominance of consumption loans reflects the high proportion of household debt in the personal loan, such as credit cards, and auto loan sectors, which are considered as short-term loans for the use of future income for current consumption. Short-term loans are one of the most important factors to consider when choosing a personal loan due to the repayment period. If people are choosing a longer-term loan, it makes financial sense for people to have a monthly budget despite the accrued interest over time. A long-term loan is a type of credit reimbursed by a borrower to a lender over an extended period, ranging from 3-30 years. Some instances of long-term loans include car loans, housing loans, personal loans and education loans. Generally, banks and other financial institutions offer varying types of secured long-term loans to address the needs of the consumer. In addition, long-term household loans are also availed from financial institutions to meet crucial household business requirements or personal needs. Such requirements include the purchase of machinery or property to operate on the household's business instruments.

The statistics shown suggest that household debt in Thailand has remained a serious problem and must be solved because household debt has a tendency to continually rise. In addition, the growth rate of household debt is higher than the growth rate of the economy. For this reason, the growth rate of household debt could become a serious factor that would restrain spending of households in order to ensure sustainable economic development in the future. In addition, high household debt levels can be harmful to humans' quality of life and can cause some people to fall into the debt trap, especially those in the low and mid-average income

groups. Both low and mid-average income groups will likely curb spending on luxury or durable goods, but they have relatively limited loan repayment ability and are more vulnerable to adverse economic shocks compared to higher income groups in society. There is also a high chance that a macroeconomic shock of some kind will be less likely to be withstood, and high household debt could subject the economy to a problem that may be especially vulnerable to non-performing loans (NPLs). The resolution of NPLs that have reached systemic levels is complex and costly. Resolution policies need to be tailored to the characteristics of a country's NPL problem. At the same time, resolution policies are also activated in the context of other policies that are relevant to a country's economic conditions, including consumption patterns of household. To stimulate and solve problems in the economy, Thailand's government has been implementing policies, such as reducing personal income inequality, corporate loans, regional debt policies' projects, tax relief, and debt restructuring (Hean et al., 2021)

2.3 Debt solution

Looking at the economic content of Keynesian policies defines the topic as one in the history of ideas. The innovation was explained in this way as an intellectual mechanism and policy prescription. The economic ideas of post-war Keynesianism are actually confirmed to establish a constitution around the main objective of achieving full economic development by using both fiscal and monetary policy to set the balance of payments and support counter-cyclical demand management (Hall, 2020). At times of high household debt, to improve the effectiveness of the monetary policy, one intellectual mechanism suggestion is that interest rates on new loans will be higher, that is, inducing some to borrow less. However, this can decrease the welfare of the whole economy and make households more exposed to interest rate shocks (Rubio, 2011 and Debelle, 2004). The best implication for BOT is to control the household debt to be at the manageable level. A shock to the interest rate can decrease inflation immediately only when the household debt is low. For this reason, households with high debt may hesitate to create more household debts and start more consumption again when the central bank decreases the interest rate policy. In terms of new loans, households with high debt and new consumption credit may have reached the borrowing constraints set by Thai commercial banks (Chamornchan, 2019).

The best monetary policy of implication for BOT is to control household debt at a manageable level. Some papers found that the interest rate has a weaker impact on household consumption during high debt periods. Chamornchan (2019) pointed out that the government's household promotion to increase spending can cause more indebtedness for both households and individuals. Hence, to control household debt, it is necessary to coordinate both the fiscal and monetary policymakers and the government's spending promotions. Because of this, policymakers do not use a formal method of political analysis. They tend to make decisions based on their capacity to analyse massive data sets of debt dimensions of determinations and also predict future impacts to design effective strategies for appropriately managing debt control policies. Amornlerdphanich (2008) pointed out that the determinants of household debt burdens in Northern Thailand are debt-generation buying behaviour of households consisting of marital status, education level, age of household head, household income, and household asset value as key factors. In addition, Lerskullawat (2020) investigated the determinants of household debt in Thailand during the period from 2009 to 2017, and the result was that both social factors and economic factors play an important role in total household debt. The main influences in terms of social factors were education, marriage, and young population, while economic factors consisted of household income, inflation rate, and household consumption pattern of expenditure.

To confirm the economic factors determined by household debt, Chichaibelu and Waibel (2018) analysed the determinants of household indebtedness in Thailand and Vietnam. The results emphasised that lower average income, household size, and education, especially at lower education levels, are significant determinants of household indebtedness in both Thailand and Vietnam. Clearly, differences in socio-demographic characteristics have been regarded as the main determination behind the varying levels of household debt in different areas. According to this reporting in 2021, the Northeastern region has reached the highest level of household debt in Thailand, followed by the Northern and Central regions and Bangkok, respectively (see figure 4). Policymakers and other stakeholders might have useful knowledge, and this main determination of household debt to shape and alter the impact in order to develop suitable policies in a particular area plays a role in informing the policymaking process. Both policymakers and other stakeholders need to also understand that credit market growth, if not properly guided, may lead to lower happiness among consumers. While access to credit is an important component for improving consumer living standards, any policies for developing credit markets still need to consider this sociopsychological factor.

Another important factor affecting household debt is personal income. Previous studies on Thailand have revealed that low-income people are likely to fall into heavy indebtedness. Debt vulnerabilities among low-income people have increased substantially in recent years. Muthitacharoen et al. (2015) found that low personal income can lead to increased borrowing because of responses to consumption patterns. Similarly, Lerskullawat (2020) emphasised that there is a negative relationship between household income and household debt. Low-income individuals and households use a variety of debt products, including mortgages, education loans, car leasing, and credit cards in order to meet consumption patterns and demands. Overall, low-income individuals and households are placed in vulnerable financial situations when the amount of debt is too high. Ultimately, household obligations created by previous purchases of those goods and services or by other means have become a significant burden in the households' finance constraint. For this reason, households' future consumption spending will be impacted not only because there is less demand for both important and luxury goods and services, but also because of increasing financial limitations and problems.

3. Research objectives

The purpose of this research is to highlight the related interpretation between average personal income and household debt by region of Thailand, including the Central region and Bangkok, the Northern, the Northeastern, and the Southern regions. These outcomes are truly beneficial for policymakers as they can be used in order to control household debt at an acceptable level, prevent economic crises, and raise personal income in all areas of Thailand.

4. Methodology

The methodology of this article was divided into two stages: the first was aimed at identifying the measures of a specific data set by using descriptive statistics to provide information about a data set. The second stage intended to describe the perception of key attribute interpretation by using the importance–performance analysis matrix (IPA) or four-quadrant chart.

The importance–performance analysis matrix (IPA), four-quadrant chart or business matrix is a matrix-based approach which is focused on customer perception of key attributes in order to clearly understand risk interpretation. IPA is also a simple and useful managing tool that has been widely used to analyse organisations and determine their weak and strong points

in relation to the business setting. Dinh (2024) uses the IPA model to examine how consumers are now behaving toward behaviour impacts and how their decisions to use cashless payment in Ho Chi Minh City, Vietnam. Moreover, this tool has been applied in different areas of industries including government policy development. The main application of this model is to identify organisations' objectives and to solve the management problems of each quadrant attribute (Skok W et al., 2001). The four-quadrant chart would be a great way to visualise my data, time series data, as the key attributes in the problem evaluation that should be solved. The data obtained from the National Statistical Office is described as an IPA matrix by four quadrant partitions. Based on the data obtained, a plot will be presented for a four-quadrant matrix that describes the relationship of each attribute (variable) from the weak (Quadrant 1) and strong points (Quadrant 4). This matrix can indicate which attributes are suitable and well positioned to create an appropriate policy in Thailand.

In summary, weak (Quadrant 1) and strong (Quadrant 4) attributes are plotted against each other. Figure 2 shows the IPA interpretation framework. The researcher employed secondary statistics, Thailand's household debt and average personal income of 77 provinces in Thailand in 2021, from the National Statistical Office.

The formular used to calculate the four quadrants is as follows:

$$X_R = \frac{\sum_{i=1}^k X_i}{k}$$

$$Y_R = \frac{\sum_{i=1}^k Y_i}{k}$$

Where:

The horizontal (X-axis) represents the average personal income level and the vertical (Y-axis) represents the household debt level. The results of the analysis of importance and performance are shown in the IPA interpretation for average personal income and household debt at Figure 2.

Figure 2: shows IPA interpretation for average personal income and household debt.

Household debt	High	Quadrant 1 Low average personal income High household debt	Quadrant 2 High average personal income High household debt
	Low	Quadrant 3 Low average personal income Low household debt	Quadrant 4 High average personal income Low household debt
		Average personal income	
		Low	High

Quadrant 1 Weak; attributes in this area suggest that average personal income is low while household debt level is high. This quadrant is considered to be at the highest risk of household debt level.

Quadrant 2 Both average personal income and household debt level of attributes in this area are high.

Quadrant 3 Both average personal income and household debt level of attributes in this area are low.

Quadrant 4 Strong; this area contains attributes of low household debt level while average personal income is high. This quadrant represents the lowest risk of household debt level.

5. Results

Descriptive statistics are used to describe the basic features of the data in a study. One of the most common ways to describe a single variable is with a frequency distribution. The distribution is a summary of the frequency of individual values or ranges of values for attributes (variables) are reported in Table 1 – 2.

Table 1: Average personal income

Lower bin	Upper bin	Frequency (n = 77)	Cumulative frequency	Percentage (%)	Cumulative percent
15,000.00	20,000.00	14	14	18.18%	18.18%
20,001.00	24,667.00	32	46	41.56%	59.74%
24,668.00	30,000.00	18	64	23.38%	83.12%
30,001.00	35,000.00	9	73	11.69%	94.81%
35,001.00	45,000.00	4	77	5.19%	100.00%
Mean	24,666.33				
Minimum	15,495.95				
Maximum	41,129.42				
Std. Dev.	5,762.32				
Skewness	0.93975123				
Kurtosis	0.745122151				

Source: Author's own calculation

In table 1, the mean for the personal income variable is 24,666.33 Thai baht, indicating that the average (or central) personal income of 77 provinces in Thailand is 24,666.33 ($\approx 24,667$) Thai baht. This indicates that 59.74% (46 provinces) of personal income in Thailand is lower than 24,667 Thai baht per month (lower average). There are only four provinces (5.19%) holding average personal income between 35,001 and 45,000 Thai baht.

Skewness assesses the extent to which a variable's distribution is symmetrical. Within the recommended guidelines, a skewness value between -1 and +1 is considered excellent, but a value between -2 and +2 is generally considered acceptable. Values beyond -2 and +2 are considered indicative of substantial nonnormality (Hair et al., 2019).

Kurtosis is a measure of whether the distribution has peaked too much. if the kurtosis is greater than +2, the distribution has peaked too much. Likewise, a kurtosis of less than -2 indicates a distribution that is too flat. When both skewness and kurtosis are close to zero, the pattern of responses is considered a normal distribution (Hair et al., 2019).

Table 2: Household debt per household

Lower bin	Upper bin	Frequency (n = 77)	Cumulative frequency	Percentage (%)	Cumulative percent
45,000.00	122,500.00	11	11	14.29%	14.29%
122,501.00	202,947.00	29	40	37.66%	51.95%
202,948.00	277,500.00	22	62	28.57%	80.52%
277,501.00	355,000.00	14	76	18.18%	98.70%
355,001.00	432,000.00	1	77	1.30%	100.00%
Mean	202,946.94				
Minimum	47,602.03				
Maximum	370,530.90				
Std. Dev.	73,389.73				
Skewness	0.175838983				
Kurtosis	-0.414176447				

Source: Author's own calculation

From table 2, the mean for the household debt per household variable is 202,946.94 Thai baht and the standard deviation is 73,389.73. Interestingly, almost 50% (48.05%, 37 provinces, 22+14+1) were holding household debt higher than average household debt in Thailand. The values of skewness and kurtosis are within the recommended guidelines by Hair et al. (2019), that is, neither less than -1 nor more than +1, and neither less than -2 nor more than +2, respectively. This implies that non-normal distribution within the sample is not a concern (Hair et al., 2019).

Figure 3: shows average personal income of 4 regions and country's average

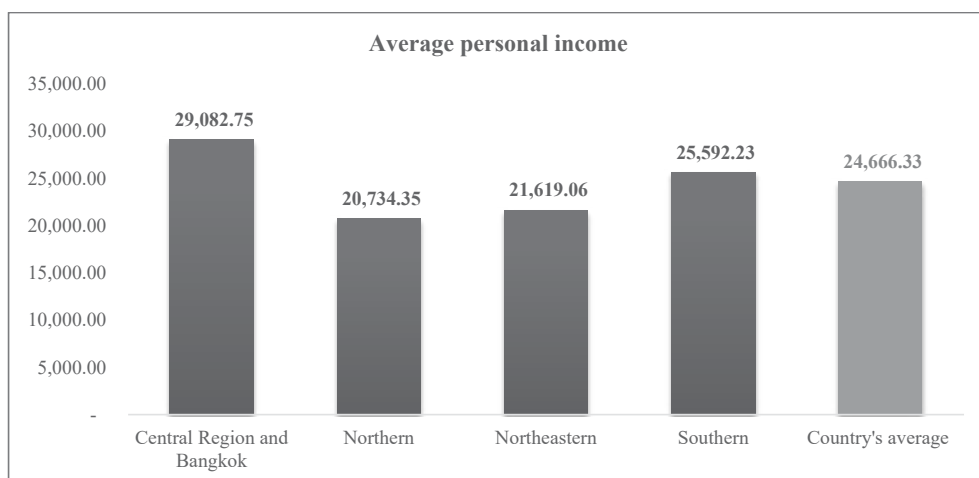
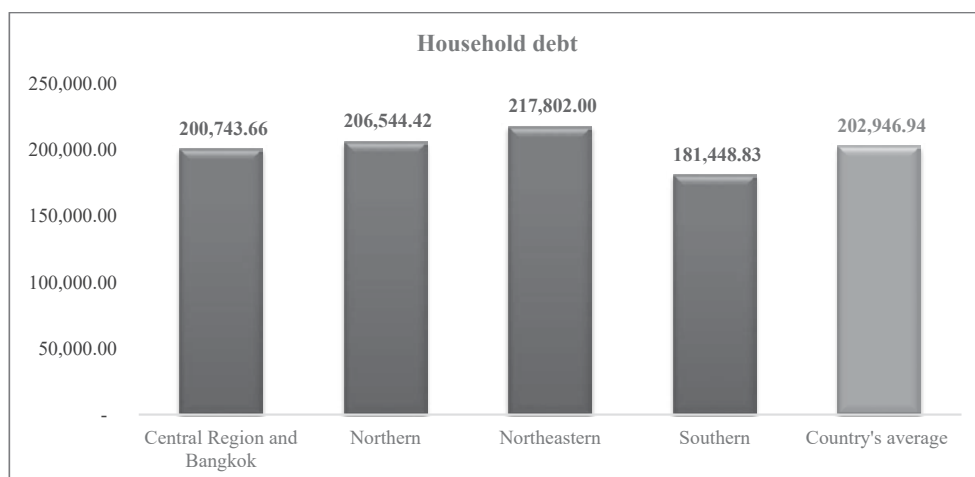


Figure 4: shows household debt of 4 regions and country's average



The column graph of figure 3 provides data of the average personal income of the population living in four different regions and the country's average income of Thailand. Overall, the country's average income in Thailand in 2021 was 24,666.33 Thai baht. The lowest was found in the Northeastern and Northern regions (21,619.06 and 20,734.35 Thai baht, respectively), while the average for the country was higher in Bangkok and the Central and Southern regions.

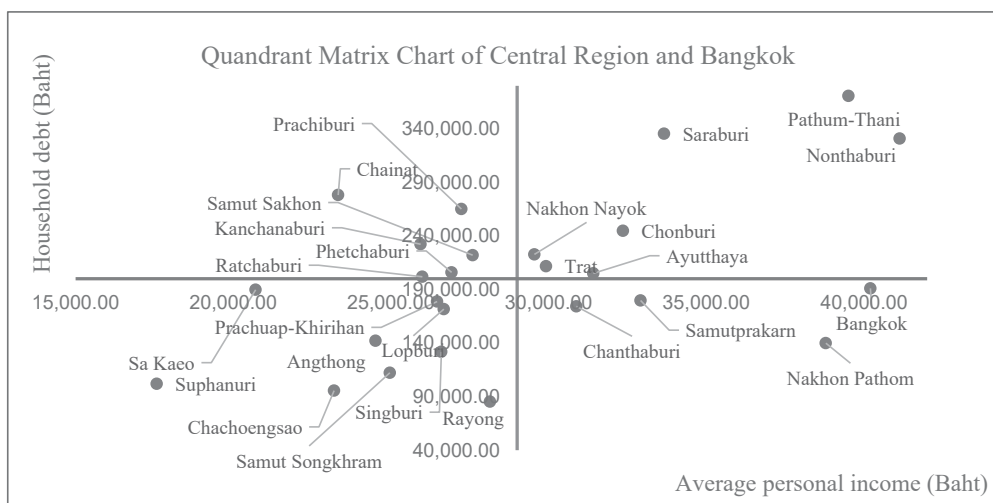
As data is presented from figure 4, the column graph shows the average household debt of populations living in four different regions and the country's average household debt of Thailand in 2021.

The country's average household debt was 202,946.94 Thai baht; however, the largest household debt levels were found in the Northeastern and Northern regions (217,802.00 and 206,544.42 Thai baht, respectively) as shown in the column graph. The regions with the lowest levels of household debt were the Central region, Bangkok, and the Southern region, with corresponding amounts of 200,743.66 and 181,448.83 Thai baht.

As is clear from the illustration, the highest risk of the gap between average personal income and household debt were the populations that lived in Northeastern and Northern regions in Thailand, respectively. Policymakers can also use this illustration in terms of the gap between average personal income and household debt in different regions to manipulate government action for preventing household debt and economic crisis, including emergency actions and consumer finance reforms.

Furthermore, based on the data collection and average personal income and household debt gap, an importance performance analysis matrix (IPA) has been used to manifest the key attributes in economic impact (household debt and average personal income) in order to clearly understand the method of interpretation and to determine its weak and strong points affecting an economic policy setting. IPA can be made in four quadrants (see figures 5-8). The horizontal axis shows the average personal income results, while the vertical axis shows the level of household debt. The model examined the four regions of central and Bangkok, Northern, Northeastern, and Southern (total 77 provinces) Thailand in 2021. The nonlinear relationship analysis between average personal income and household debt may illustrated a perspective considered at the risk level for policymakers developing an economic policy setting. Garver (2003) and Matzler et al. (2003) used the IPA grid to classify both low and high importance of the attributes into key performance. The four quadrants matrix chart of each attribute and region was used to plot the nonlinear relationship analysis of attributes shown in figures 5-8 below.

Figure 5: shows IPA analysis between average personal income and household debt of the Central region and Bangkok



From the IPA matrix calculation results, figure 5 shows IPA analysis between average personal income and household debt of Central region and Bangkok. The difference between the average personal income and the household debt regarding the importance and quadrant presentation of each province is obtained. The calculation interpretation can be seen in figure 2. Using the quadrant presentation, we can see that there are six provinces in quadrant 1. This quadrant is thought to have the biggest danger of debt for households. The provinces that make up this quadrant have low average personal incomes but high levels of household debt.

Focusing on quadrant 4, four provinces comprise this area, which has the lowest risk of household debt. This quadrant has a high average personal income level and a low level of household debt. With their high average personal earnings, these four provinces, Chanthaburi, Samutprakarn, Nakhon-Pathom, and Bangkok, are regarded as having the lowest rates of household debt in the area.

According to Figure 5, Pathum-Thani, which is located in Quadrant 2, has the highest amount of household debt in both this area and all of Thailand. But Pathum-Thani's people have relatively high personal incomes on average.

Figure 6: shows IPA analysis between average personal income and household debt of the Northern region

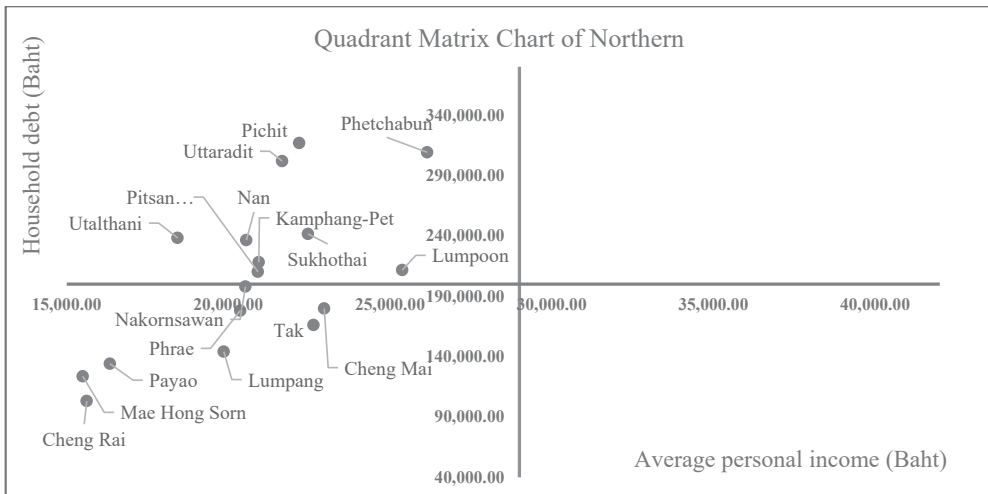
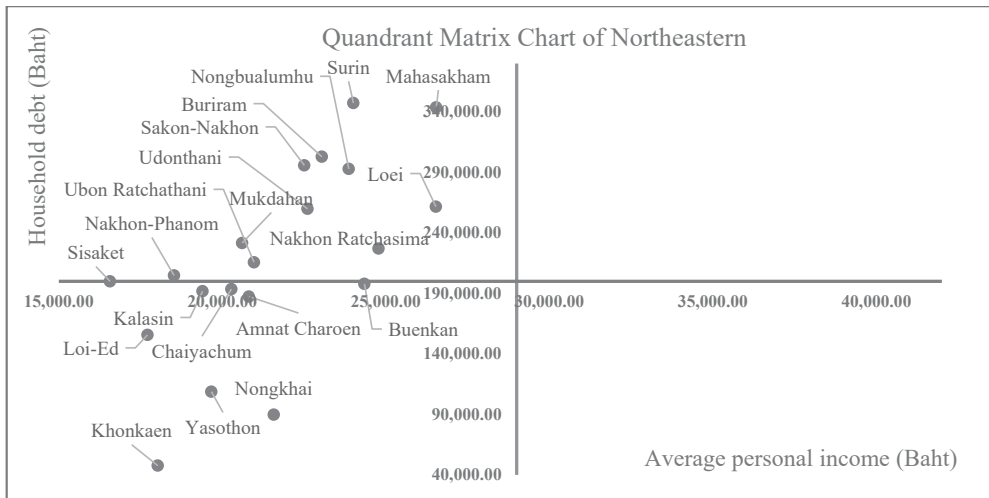


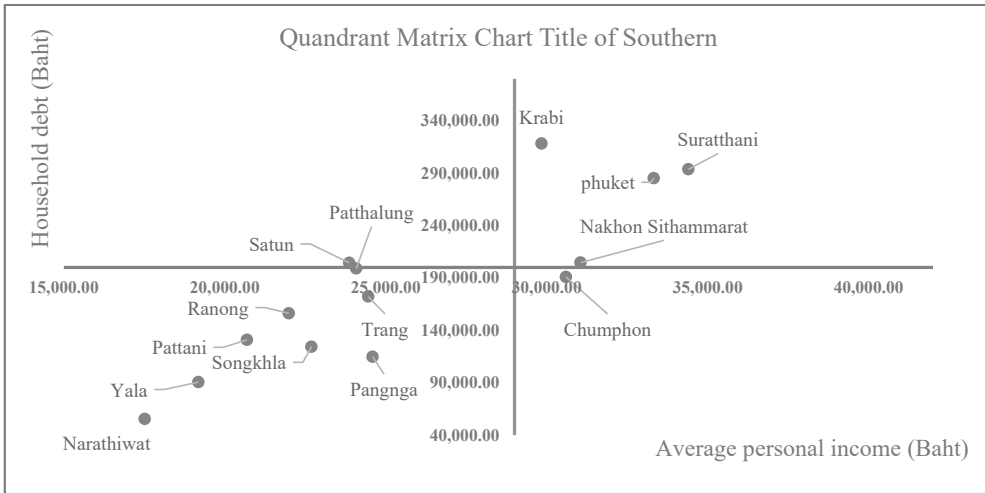
Figure 6 shows the IPA analysis of the Northern region. Quadrant one has nine provinces (total 17). There is a very high danger of household debt in all nine provinces. Specifically, these provinces are characterised by low average personal income and high levels of family debt. In this region, Pichit had the highest amount of household debt in 2021. In general, the majority of the provinces in the area are found in quadrant 1. This indicates that the average personal income of people in this region is low, while family debt levels in this region have been high.

Figure 7: shows IPA analysis between average personal income and household debt of Northeastern



Focusing on quadrant 1 of figure 7, this quadrant is made up of 12 provinces. Interestingly, there are more provinces in this quadrant in the Northeastern area than anywhere else. Out of the total 20 provinces in this region, 12 are found in this quadrant. To be more precise, Thailand's Northeastern area has the greatest number of provinces contained in quadrant 1 (and hence the largest risk of family debt). Surin has the second-highest household debt level in Thailand and the highest household debt level in this area.

Figure 8: shows IPA analysis between average personal income and household debt of South



From figure 8, based on quadrant 1, these provinces have low average personal incomes yet high levels of household debt. It's interesting to note that this quadrant has two provinces, Patthalung and Satun, out of a total of 14. Specifically, the provinces in this quadrant are the lowest in Thailand and are found in the Southern area. Looking at quadrant 4, this one has the lowest danger of debt for households. Chumphon is the only province in this region with a low level of household debt and a high average personal income.

6. Conclusion and discussion

From the study results, the provinces with the highest risk of debt are included in all regions of Thailand. There were two in the Southern region, nine in the Northern region, 12 in the Northeastern region and six in the Central region and Bangkok. Policies that would resolve this problem must be shaped by a variety of measures and factors. Households in the same region but with different levels of debt burden and personal income would be treated using different measures (Maneejuk et al., 2021). This is because households residing in the same region but with varying debt burdens and personal incomes would receive distinct treatment. A proactive effort of policymakers and other stakeholders to identify and reduce debt-related vulnerabilities by regions is a priority issue, especially for those at a low personal income level. In order to avert household debt and economic crises, policymakers should concentrate

on the highest risk of household debt level narrowing the disparity between average personal income and household debt in specific areas. They may do this by deploying regional resources, enhancing consumer debt reforms and bolstering debt management methods. Measures to reinforce the monetary and fiscal frameworks to especially improve in a particular area that contributes to stabilising the policy-making process should be implemented in addition to these efforts. Charoenchokethavee et al. (2022) recommended that policymakers and other stakeholders should focus on a particular area to the household debt problem for the stable and sustainable development of the region and country. When a high and sustained level of debt is apparent, the government should reduce the amount of debt production since excessive debt levels are likely to have a negative long-term impact on other basic economic factors (Teeralertpanich, 2023). Moreover, financial institutions should adopt a saving approach to introduce savings principles to the population to reduce the burden of household debt. The Ministry of Labour and related government agencies should have measures in place to reduce the causes leading to household debt, such as a policy that promotes increasing income to manage consumption behaviour of daily expenses. In addition, depending on the unique burden of each household, the Ministry of Finance should offer income efficiency methods or financial information management in terms of consumption management.

Furthermore, it is imperative that both monetary and fiscal policy should possess simultaneous coordination by understanding consumer satisfaction, living standards, and the evolving credit markets. BOT has many tools to track household debt levels and financial stability, including the capacity to promote a larger share of loans with variable interest rates. Fiscal policy is also required in order to assess household debt levels and ensure that they are not excessive on both a micro and macro level (Chamornchan, 2019). Crucially, the government must refrain from endorsing measures that increase family debt, particularly debt that is non-income producing.

Lastly, families with varying income levels may have varied detrimental effects from debt holdings on happiness. In general, individuals with low incomes may be most impacted when taking on debt. Customers with different income levels may also experience varying effects on their well-being when it comes to particular debt categories.

6.1 Discussion

However, the Southern region and Bangkok apparently have the lowest vulnerability to poverty out of all the regions. Duangkaew (2023) emphasised that unemployment is the key factor affecting vulnerability to poverty in Thailand. Creating employment opportunities is crucial for economic growth and social stability. It provides individuals with income and the means to support themselves and their families, while also driving consumer spending and boosting local economies. In sum, policymakers must consider these factors while developing and implementing rules for the types of loan products and relevant financial sectors in order to control household debt at an acceptable level, prevent economic crises, and raise personal income in all areas of Thailand.

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