

Social Capital Accumulation and Macroeconomic Growth in Thailand: International and Provincial-level Comparisons

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Abstract

A country's economic activity is influenced by the total amount of "social capital" accumulated within that country. Although there are no statistics that directly measure the amount of social capital when attempting to quantitatively analyse its impact in Thailand, an internationally comparable index, the Social Capital Index (SCI) developed and published by SolAbility, enable us to understand the relative status of social capital accumulation across the country. Furthermore, understanding which regions in Thailand contribute to which components of social capital accumulation, and which regions need improvement in which components, will lead to more realistic and efficient policy recommendations.

This paper quantitatively evaluates the relationship between SCI and economic development status for Thailand as a whole. In the process, identifies the factors that impede the accumulation of social capital from boosting economic efficiency in Thailand are identified. The findings of this study are as follows. First, Thailand's social capital accumulation is not particularly high compared to its stage of economic development, but it potentially has a significant opportunity to accelerate its accumulation and improve the economic efficiency. Second, however, there are impeding factors that prevent social capital accumulation from effectively translating into economic efficiency, which include education and vocational training, the fixation of social stratification, and systems that prevent women from fully utilising their abilities.

A regional analysis by generating an index value from the Human Achievement Index (HAI) indicates that the northern and northeastern regions have a high but declining amount of social capital, while other regions are contributing to whole nation's social capital accumulation. Furthermore, in the northern and northeastern regions, individual members of society have become less interested in their families and communities, and their interest moves towards a smaller social unit.

Keywords: Social capital, Low-income earners, Economic growth, Human Achievement Index, Community.

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การสะสมทุนทางสังคมและการเติบโตทางเศรษฐกิจมหภาคในประเทศไทย: การเปรียบเทียบระดับนานาชาติและระดับจังหวัด

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บทคัดย่อ

กิจกรรมทางเศรษฐกิจของประเทศได้รับอิทธิพลมาจากปริมาณ “ทุนทางสังคม” ทั้งหมดที่สะสมในประเทศนั้น ๆ อย่างไรก็ดี ถึงแม้ว่าจะไม่มีสถิติที่ใช้วัดปริมาณทุนทางสังคมในการวิเคราะห์ผลกระทบต่อประเทศไทยได้โดยตรง แต่ดัชนีทุนทางสังคม (SCI) ที่ถูกพัฒนาและเผยแพร่โดย SolAbility เป็นดัชนีที่สามารถเปรียบเทียบได้ในระดับสากลซึ่งจะช่วยให้สามารถเข้าใจสถานะสัมพัทธ์ของการสะสมทุนทางสังคมทั่วประเทศ นอกจากนี้ การทำความเข้าใจว่าภูมิภาคใดในประเทศไทยมีส่วนสนับสนุนองค์ประกอบใดของการสะสมทุนทางสังคม และภูมิภาคใดจำเป็นต้องปรับปรุงองค์ประกอบใด จะนำไปสู่ข้อเสนอแนะเชิงนโยบายที่สมจริงและมีประสิทธิภาพมากขึ้น

บทความนี้ประเมินความสัมพันธ์เชิงปริมาณระหว่าง SCI และสถานะการพัฒนาเศรษฐกิจของประเทศไทยโดยรวม โดยระบุปัจจัยที่เป็นอุปสรรคต่อการสะสมทุนทางสังคมจากการเพิ่มประสิทธิภาพทางเศรษฐกิจของประเทศไทย ซึ่งผลการศึกษาพบว่า ประการแรก การสะสมทุนทางสังคมของประเทศไทยไม่ได้สูงมากนักเมื่อเทียบกับระยะการพัฒนาด้านเศรษฐกิจ แต่มีโอกาสำคัญที่จะเร่งการสะสมทุนทางสังคมและพัฒนาประสิทธิภาพทางเศรษฐกิจ ประการที่สอง มีปัจจัยที่เป็นอุปสรรคในการสะสมทุนทางสังคมที่ไม่สามารถพัฒนาเศรษฐกิจได้อย่างมีประสิทธิภาพ ได้แก่ การศึกษา และการฝึกอบรม การกำหนดชนชั้นทางสังคม และระบบที่ขัดขวางไม่ให้ผู้หญิงใช้ศักยภาพของตนเองได้อย่างเต็มที่

การวิเคราะห์ระดับภูมิภาคโดยการสร้างค่าดัชนีจากดัชนีความก้าวหน้าของคน (HAI) ซึ่งให้คะแนนภาคเหนือและภาคตะวันออกเฉียงเหนือมีทุนทางสังคมในระดับสูงแต่กำลังลดลง ในขณะที่ภูมิภาคอื่น ๆ มีส่วนช่วยในการสะสมทุนทางสังคมของประเทศ นอกจากนี้ ในภาคเหนือและภาคตะวันออกเฉียงเหนือ สมาชิกในสังคมมีความสนใจในครอบครัวและชุมชนน้อยลง และมุ่งไปสู่หน่วยสังคมที่เล็กลง

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1. Introduction

The economic activity of a country is influenced by the total amount of “social capital” accumulated by various social groups in that country. However, when trying to quantitatively analyse the magnitude of the impact, there is no statistics with a global consensus on the direct measurement of the “amount” of social capital accumulated. Meanwhile, SolAbility, a Swiss research institute, has developed and published the Social Capital Index (SCI), an internationally comparable index that can represent the state of social capital accumulation across the whole country. Thailand’s relative position in social capital accumulation can be captured in light of the world average figures and comparisons with other countries’ scores of the SCI.

Knowing the state of social capital accumulation in Thailand at the country level, an analysis of the state of social capital accumulation at regional levels and by components would lead to a more concrete discussion on necessary policies for promoting social capital accumulation that take into account regional characteristics and attributes. Although the SCI has a limitation of showing the relative accumulation of social capital across the whole country only, generating alternative index value representing the amount of social capital accumulation from the Human Achievement Index (HAI), published by the Thai government, would contribute to the region-level analysis. The components of the HAI show that it measures well-being of Thai people, although it was originally developed to measure the state of human development in Thailand by province. In other words, extraction of those components which are related to social capital from the components of HAI is possible, and an index compiling the extracted components can be utilized to analyze the state and issues of social capital accumulation of each province.

The aims of this paper are four-fold. First, it evaluates the relationship between the state of social capital accumulation at the whole country (national scores of the SCI) and the economic development stage. Second, it identifies the components that contribute to Thailand’s SCI score and to find economic and social problems that may prevent the favourable states of those components from being translated to the country’s economic growth. Third, it measures the current state and trend of region-level social capital accumulation by generating an original index derived from the HAI and overview the regional characteristics in social capital accumulation. And the fourth, it discusses possible policy options at both national and regional levels.

2. Precedent studies: measurement of social capital

Social capital is, according to Putnam (2001, p.19), the total amount of connection among individuals characterized by “social networks” and the “norms of reciprocity” and “trustworthiness” that arise from them, and the efficiency of the economy and society can be increased through active interaction of individuals. However, the total amount of social capital cannot be measured directly, although it is “capital”, because it does not exist as a material object, nor is it traded for money. For this reason, in reality, each researcher uses statistical figures that they think represent one aspect of social capital as an approximation of the total amount of social capital accumulated, or develops a composite index that represents the total amount of social capital (at the national or regional level).

There are two possible approaches to measurement. One is to identify the conditions necessary for the accumulation of social capital and grasp it from the degree of their fulfilment. And the other is to identify the picture of the economy and society at community- or national-level (i.e., social outcomes) that is realized when social capital is accumulated well, and collect and grasp the data related to them. Regarding the former, Putnam proposed specific alternative indicators, such as frequency of local group activities, voter turnout, rate of participation in volunteer activities, degree of involvement with friends and acquaintances, and trust in society. Depending on the research questions (i.e., depending on the aspect of social capital to be observed) of each scholar, obtainable data from these are used as an approximation of the total amount of social capital. Grootaert et al. (2004) provide examples of questions to be asked in a questionnaire survey to measure the total amount of social capital at the level of small groups such as communities, and propose choosing and using questions that are necessary in light of the purpose of the survey. In a study on Thailand, the World Bank (2006) quantitatively analyzed which aspects of social capital (trust and solidarity, groups and organizations, linkages and networks, cooperation and collective action, information sharing and communication, social cohesion, and empowerment) were affected by social activities through Thailand's Social Investment Fund, by capturing the change of influence paths among those aspects. Quantitative studies on social capital at the individual village level also exist, including Suzuki's (2022, 2024) studies on two rural villages in northeastern Thailand. He attempted to examine how the relationship between the process of residents forming small groups in the villages and the social development of the region changed after the coup in 2014 and the COVID-19 pandemic, using both the data obtained from his own survey results and interviews. Regarding the latter, Putnam pointed out that the effects of social capital accumulation can be seen in aspects including political commitment, educational achievement, public safety, economic development, and the health of residents. The data for these aspects are easy to obtain at the provincial or national level, which leads to an idea of grasping the amount of social capital accumulated at the national level by a composite index of these related indicators. The SCI is one such example. Other examples include Low and Kim's (2014) study that created their own social capital index for each survey area and demonstrated that there is a relationship between the index score and the recovery process from the 2011 flood disaster and the strength of resilience thereafter in Thailand.

The SCI is an index based on the idea that in countries where social capital is more accumulated, people are healthier, are more equally treated, have less crime, have more freedom in social activities, and are more satisfied with their lives. The SCI is a composite index by a total of 15 indicators by setting three indicators for each of aforementioned five themes (SolAbility 2024). Although there may be doubts about the validity of the SCI and the necessity and sufficiency of the measurement indicators, this study uses this index because it has been compiled annually since 2015 and internationally comparable for 191 countries (for the 2024 version).

3. SCI and the state of economic development in Thailand after mid-2010s

Relationship between economic development and social capital accumulation

The relationship between economic development and social capital accumulation is considered to vary depending on the economic development stages, as explained below. Taking this into consideration, a cubic or quartic function should be assumed for a regression of the SCI score (regressand) by the degree of economic development (regressors). In low-income countries, there is relatively little room for social participation and mutual help in the community due to poverty (then the shape of the function is unknown at this part). As the country's development stage moves from a low-income to lower middle-income country, the residents interact and cooperate more actively, which promotes social capital accumulation. Then, positive relationship should be assumed for the function at this part). The positive relationship will become more apparent as the country develops from lower-middle to upper-middle income country (upward slope of the function will become steeper). After then, as the economy develops to become high-income country, a public social security system is improved and replaces residents' mutual help, which results in deceleration of social capital accumulation and finally a decrease in social capital.

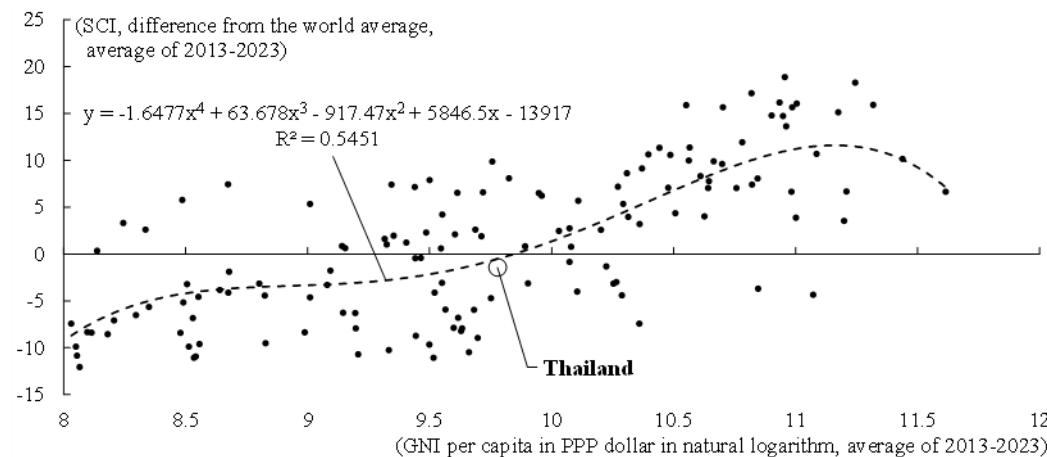
Table 1 is the results of OLS regression to specify the shape of the function that explains the SCI score by natural-logarithm of GNI per capita in purchasing power parity (PPP) dollars, both of which are the annual average figures of 2013 through 2023. PPP dollars is used here because the level of life satisfaction should be measured by the amount of goods. Both quartic (equations (1) and (3)) and cubic (equations (2) and (4)) functions are considered as candidates here. In equations (1) and (2), all available data are used. At the same time, for equations (3) and (4), only the data for countries at middle-income and high-income countries are used, because a main purpose of this study is to have policy recommendations for the accumulation of social capital for Thailand as an upper-middle income country. Table 1 tells that a quartic function should be assumed, because the estimate results (1) and (3) have p -values less than 0.05 for all coefficients (i.e. statistically significant). Here, I employ the result (3) because of the aforementioned research purpose and of smaller p -value for coefficient than those in (1), even though the R^2 is slightly lower than the estimate result (1). **Figure 1** is a scatter chart showing the result relationship between the GNI per capita and the SCI scores, based on the estimate result (3).

Table 1: Results of OLS regressions on the asymptotic line.

	(1) Quartic, all	(2) Cubic, all	(3) Quartic, MIC+	(4) Cubic, MIC+
Constant	-2,853.73 * (0.0181)	39.2065 (0.8311)	-13,916.97 * (0.0137)	671.1140 (0.2384)
$(\ln(\text{GNIpc}))^4$	-0.4360 * (0.0154)		-1.6477 ** (0.0095)	
$(\ln(\text{GNIpc}))^3$	15.9771 * (0.0153)	0.0192 (0.9364)	63.6780 * (0.0103)	-0.6887 (0.2759)
$(\ln(\text{GNIpc}))^2$	-216.413 * (0.0160)	0.6612 (0.9210)	-917.474 * (0.0113)	21.2499 (0.2484)
$\ln(\text{GNIpc})$	1,288.01 * (0.0171)	-12.2524 (0.8406)	5,846.50 * (0.0125)	-210.5115 (0.2364)
R^2	0.5796	0.5632	0.5451	0.5212
Adjusted- R^2	0.5687	0.5546	0.5313	0.5104
Number of observations	158	158	137	137

(Notes) 1. * and ** mean that the coefficients are statistically significant at 5% and 1%, respectively.
 2. “all” and “MIC+” mean “the data for all countries are used” and “the data for middle-income and high-income countries (countries with purchasing power parity of greater than 3,000 PPP dollars, which is roughly equivalent to 1,000 nominal US dollars) are used”, respectively.

(Source) Estimation by the Author

Figure 1: Relationship between GNI per capita (measured in international dollar) and SCI.

(Notes) The data for middle-income countries or countries at a higher development stage are used (specifically, countries with a logarithmic GDP per capita of 8 (approximately 3,000 PPP dollars and nominal 1,000US\$) or more).

(Data source) SolAbility’s website for SCI and World Bank Open Data for GDP per capita (last access on 18 August 2025).

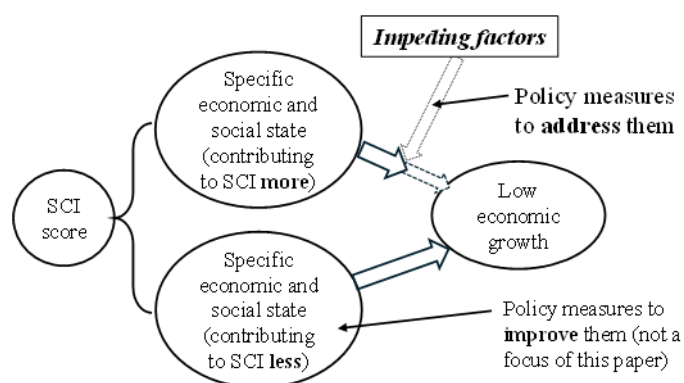
The interpretation of the asymptotic line drawn in Figure 1 is that the amount of social capital increases with economic development until GNI per capita reaches 70,830 PPP dollars (11.17 in natural logarithm, equivalent to 61,660 US dollars). More in detail, social capital accumulation decelerates as GNI per capita increases up to approximately 5,000 PPP dollars (8.5 in logarithm, equivalent to 2,000 US dollars) and becomes almost flat beyond that level of GNI per capita. The accumulation of social capital is then accelerated again when GNI per capita reaches approximately 13,360 PPP dollars (9.5 in logarithm, equivalent to about 6,190

US dollars) until 32,800 PPP dollars (10.40 in logarithm, equivalent to 20,250 US dollars). Then, the pace of accumulation gradually slows but continues up to 70,830 PPP dollars. For countries with a GNI per capita higher than this, social capital accumulation decreases with economic development. Thailand's GNI per capita was 22,930 PPP dollars in 2023. Figure 1 shows that Thailand is located marginally below the asymptotic line, meaning that its social capital accumulation can be assessed as not bad given its stage of economic development. Moreover, Thailand is in a position where it can accelerate social capital accumulation, which must be leading to a greater potential for economic development than other countries at different stage of economic development.

Low economic growth and social capital accumulation: What are problems to be addressed?

However, Thailand's economic growth rates have not been high for years. The average real GDP growth rate in the period between 2013 and 2023 was 1.9%. As far as social capital accumulation is concerned, its low growth rate can be attributed to either insufficient accumulation of social capital or insufficient penetration of the effects of social capital accumulation to its macroeconomy. The latter means that there are impeding factors that make the penetration of the effect of social capital accumulation into its economy and boost economic efficiency more difficult, as illustrated by **Figure 2**.

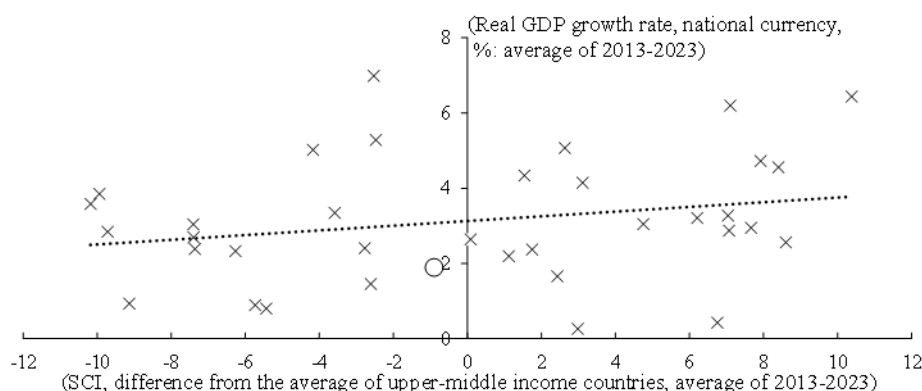
Figure 2: Factors impeding the spread of good economic and social conditions to the economy.



(Source) By the Author.

Figure 3 shows the relationship between real GDP growth rates (annual average of 2013 through 2023) and SCI score (difference from the average of upper-middle income countries) for upper-middle income countries. The observation with only the data for upper-middle income countries can eliminate to some extent the influence of economic development stage on social capital accumulation. In Figure 3, Thailand is located close to the vertical axis but lower than the asymptotic line, indicating that the country failed in sufficiently transmitting the accumulation of social capital into greater efficiency of its economic activities, resulting in lower growth during the period. Although it is limited within the scope of the SCI, finding and analysing those impeding factors would have a great research value.

Figure 3: Relationship between the SCI and actual real GDP growth rate (for upper-middle income countries).



(Note) All upper-middle income countries (based on World Bank's categorization for 2023) except three countries whose average average growth rate was negative.

(Data source) World Bank Open Data, April 2025 (last access on 18 August 2025) and SolAbility's website.

To find the impeding factors, I should first determine whether each consisting indicator of the SCI is showing good progress, and then discuss what are obstacles on translating good progress of those indicators into economic effectiveness. Note that, as SolAbility does not provide the information on which statistics were specifically used as each indicator, I must infer the progress and problems that Thailand has regarding each indicator. As a basis for understanding the progress and problems, the document published by the National Economic and Social Development Board (NESDC) in the formulation process of the thirteenth National Economic and Social Development Plan (NESDC 2021) and the data from United Nations' Sustainable Development Report (Sachs et al. 2025) give good clues. Table 2 summarizes my assessments on the situation of each theme in Thailand, based on the documents indicated above ("Yes" for the indicators that are considered to contribute to the increase in SCI and "No" for those otherwise) and I identified three themes; "health", "income equity" and "gender equality." Although good health would potentially make the economic activities more efficient in Thailand, something would be standing in the path from good health to economic efficiency. The same consideration could be applied to both income equity and gender equality. Note that "individual happiness" in Table 2 is excluded from this study because it is possible to discuss without limiting the scope of the reasons why Thailand's economic growth rate is low despite of high individual happiness.

(i) Good health condition but low economic performance: The concept of "human development" tells that its three main components (health, education and income) are mutually complementary. When people of a country have good health, they can participate fully in activities that develop their potential (education and employment) for a long period of time, which results in higher income. Considering the direct path from health to income (i.e., labour), there is no problem with quantity, taking into consideration that the unemployment rate in Thailand remains low. However, the path from health to education and vocational training may contain problems.

Table 2: Components indicators of SCI and their situations for Thailand

Themes	Indicators of the SCI	Contribution to SCI score	Assessment on the current situations in Thailand ➔ Possible impeding factors (if “Yes to the “Contribution to SCI score”)
Health	Health care availability / Child mortality / Family planning	Yes	- SDG achieved (Sachs <i>et al.</i> 2025) ➔ The quality of jobs available to healthy people (quality of and access to education and vocational training), mismatch in labour supply and demand in the new-graduate labour markets
Equity	Income equality	Yes	- Low and declining Gini coefficient ➔ Fixation of social stratification (especially among the poor, due to unequal access to education and vocational training), increase in informal-sector workers (NESDC 2023)
	Resource equality	No	- Creating opportunities through targeted social investments. - SMEs losing their potential in the face of competition (NESDC 2021)
	Gender equality	Yes	- Ratio of female-to-male mean years of education received: on track to achieve SDG target (Sachs <i>et al.</i> 2025) - Ratio of female-to-male labour participation rate: SDG achieved ➔ Insufficient participation of women in the decision-making process in private corporate sectors.
Crime	Crime is effectively controlled	No	An indicator of SDG16: Challenges remain, score stagnating. (Sachs <i>et al.</i> 2025)
Freedom	Press freedom	No	An indicator of SDG16: Score declining (Sachs <i>et al.</i> 2025: Original data from Reporters sans frontières)
	Human rights / Violent conflicts: Not available		
Satisfaction	Individual happiness	Yes	- Subjective well-being: SDG achieved ➔ (The scope is too wide to discuss)
	Suicide rate	No	The rate has been rising since 2017 and accelerated during the COVID-19 pandemic (NESDC's Social Outlook, Q1 and Q2 2021).
	Public service satisfaction	No	Financial unsustainability, economic losses due to regulations, government restrains development and are unresponsive to public demands (NESDC 2021)

(Note) The Author has interpreted and omitted expressions as appropriate. For the “Assessment on the current situation in Thailand” column, SolAbility has not disclosed the names of statistics and surveys used as individual indicators or their figures, so the Author has selected and used data that are readily referable.

(Source) By the Author. The list of indicators is from SolAbility (2024). Assessments are from the documents indicated in this table.

In rural communities and low-income groups in particular, there seems to be enough mutual help to send children to compulsory education, but it has been pointed out that the quality of education and the access to support schemes for children's schooling are low. Also, for higher education, there is a mismatch between the majors that students choose and the talents that companies are looking for. ADB (2018, p.281) points out that Thai university students chose social sciences, business and law (38.9%), humanities (9.7%), and education (9.3%), while the proportion of faculties in natural science (9.6%) and engineering and architecture (8.5%) was low.

(ii) Improvement of income equality but low economic productivity: Income inequality needs to be discussed in two aspects: level and trend. In terms of level, Thailand's income inequality measured by the Gini coefficient is 0.417 on an income basis and 0.335 on an expenditure basis as of 2023. It is relatively low among upper-middle income countries. Looking at the trend, the Gini coefficient showed a downward trend since 2000 (Gini coefficient was 0.428), falling to 0.348 in 2019, and 0.335 in 2023 (expenditure based).

On the other hand, the issue of fixation of social stratification over generations, a phenomenon that the income stratum of households does not change across generations, deserves attention as a possible factor associated with economic inefficiency. NESDC (2023) states that, citing Chongcharoentanawat (2019) who found that 53% of Thai people who were in the lowest income quintile in 2005 had not yet got out of this quintile as of 2011, it is difficult for the poor to move up to a higher income stratum in Thailand. In such a situation, even if the Gini coefficient improves, people born into poor households would give up enjoying the fruit of economic development and

abandon participation in economic and social activities (they become an idle production resource in the country's economy).

(iii) More equal treatment for female worker but low economic efficiency: There is no significant difference between men and women in terms of years of basic education or labour supply and demand. In addition, regarding the general concern that women's employment is likely to become unstable, such as by becoming informal sector workers as a means of adjusting the economy, the ratio of women to men in the informal sector has been almost the same in Thailand for some time. Besides, Egawa (2023) shows that in recent years, the transition of female informal workers to formal sector workers has been progressing at a faster pace than male.

On the other hand, a difference in employment status after completing higher education may matter. OECD (2023) points out that the ratio of women in senior and middle management positions in Thailand's private sector is low (32% of all managers as of 2021), although it has been improving. Guaranteeing a social situation where women can fully participate in the decision-making process of companies and organizations can mobilize diverse personalities into economic activities and lead to increased creativity in the economy.

4. Analysis on regional contributions to social capital accumulation in Thailand

As the SCI only provides figures at the national level, it cannot be used to analyze which regions of Thailand social capital has been accumulated most notably. Therefore, another index that can work as a proxy variable which measures social capital accumulation at regional levels is needed in order to conduct the analysis. Here, an original index is derived from the Human Achievement Index (HAI) developed by NESDC for regional-level analysis.

Idea to derive an index on regional social capital accumulation from the HAI

The original idea of the HAI was based on the Human Development Index (HDI) developed by the United Nations Development Programme (UNDP). Its measurement was therefore originally implemented by the UNDP Thailand office in cooperation with the NESDC as an ad-hoc study. Then, the NESDC has taken over this initiative and changed the indicators used in 2015 and has been calculating the index value annually.

The HDI consists of only four statistics for three aspects (GDP per capita, average years of schooling, expected years of schooling, and average life expectancy at birth) to measure people's ability to participate in economic and social activities. On the other hand, Thailand's HAI is a composite index consisting of a total of eight dimensions and thirty-two indicators are chosen to measure the progress of people's well-being, rather than human development. That is, the HAI contains both the aspects of human development and social capital in its indicators, together with other aspects of human well-being. Therefore, it is not a good idea to treat the HAI's regional index score itself as a proxy value for the state of social capital accumulation in the region. Nevertheless, if an original index that approximates the accumulation of social capital can be obtained from each component indicator or dimension of the HAI, this original index value can be used to discuss differences in the accumulation of social capital by region.

Now, consider how to utilize the eight dimensions and thirty-two consisting indicators of the HAI to construct an original proxy index measuring social capital accumulation. The construction of the proxy index is in line with the approach that measures the elements that increase social capital, considering the characteristics of the HAI. Then, there are two possible methods to do this: directly select individual indicators related to social capital from the thirty-two indicators that make up the HAI, or select related dimensions from the eight dimensions of the HAI.

Table 3: Components of the HAI that are considered to be related to social capital

Dimensions	Indicators / Statistics used	Candidates?		Dimensions	Indicators / Statistics used	Candidates?	
		Indicator	Dimension			Indicator	Dimension
1 Health	Low-weight newborns	2015-22		5 Housing and Living Environment	Households owning homes that are built with durable building materials	2015-23	
	Population of the hospitalized sick	2015-22	-		Percentage of renewable electricity in total electric energy use	2015-22	
	Population of persons with disabilities	2015-23			Complaints about pollution problems	2015-23	
	Number of suicides	2015-22			Population affected by disasters	2015-23	±
2 Education	Average years of education for people aged 15 and over	2015-23	+	6 Family and Community Life	Children and adolescents admitted to juvenile observation and protection centers	2015-23	
	High school enrollment and vocational education	2015-23	+		Percentage of single-person households	2015-23	
	Developmentally appropriate children aged 0-5	2015-23			Percentage of elderly people living alone	2015-23	±
	Scores of O-NET test at high-school level	2015-23			Number of reported crimes related to life, body, sex, and property	2015-23	-
3 Work and Life	Unemployment rate	2015-23	-	7 Transportation and tele-communication	Villages with main roads that can be used all year round	2015-23	
	Number of the underemployed	2015-23			Number of road fatalities	2015-23	
	Workers receiving social security benefits	2015-23			Number of people with mobile phones	2015-23	
	Proportion of work-related hazards or illnesses	2015-23			Number of people with access to the Internet	2015-23	
4 Economy	GDP per capita	2015-22	+	8 Participation	Number of people who voted for elections	2021-23	+
	Rate of unemployment	2015-23	-		Number of community organizations	2015-23	+
	Households with debt	2015-23			Households that are members of local groups/organizations	2015-23	+
	Inequality of expenditures	2015-23	-		Households that participate in public activities in the village	2015-23	+

(Note) Indicators with grey shading are either those which are not considered as components of social capital or those whose data are available for not all years from 2015 to 2023.

(Source) By the Author.

Table 3 shows the Author's judgements on whether each indicator and dimension of the HAI can be a component of social capital. Indicators related to social capital were marked in the "Indicator" column of Table 3 with a "+" (the indicator value contributes positively), "-" (negatively), or "+-" (debate is needed as to whether the indicator value should be considered positive or negative) signs. There are 14 indicators marked, and a check to see to what extent these indicators cover the indicators suggested in Grootaert et al. (2004) and the components defined by Putnam (1993, 2001) is necessary. The conclusion is that the set of selected indicators do not cover their suggestions sufficiently. Therefore, this approach should be rejected.

Then, what about dimension-based extraction? For this approach, a strong assumption is applied: the score for each dimension is taking into account the movements which are not directly measured by the component indicators. Since both the HDI and the HAI are calculated based on this assumption, dimension-based extraction can be considered as valid.

Then, examination is conducted as to whether each dimension of HAI is considered to be components of social capital implied by Putnam and the Grootaert *et al.* Based on the discussion so far, “transportation and telecommunications” and the human development-related dimensions (i.e., “health”, “education” and “economy.” Note that “work and life” is also excluded because this can be considered as measuring individuals’ income) should be excluded from the components of the original index. Then, there can be two possible candidates: “HAI3” which consists of three dimensions (“housing and living environment”, “family and community life”, and “participation”); and “participation” dimension of the HAI only. Note that the HAI3 is calculated as a simple average of the scores of each dimension that constitutes it, because there is no source or clue to know the weight for each dimension in the HAI or actual social capital accumulation. From the viewpoint of consistency of this study as a whole, it is important that the country’s index scores for social capital accumulation derived from the HAI should be correlated with the SCI. In calculating the correlation coefficient, data from one year later was used for the SCI, considering the duration until the states of the components of social capital affect the economy and society through their accumulation. The calculation results are shown in **Table 4**, indicating that HAI3 may be more correlated with the move of SolAbility’s SCI, although the number of available data is too small and a manner of mere comparison of correlation coefficient may still be casual.

Table 4: Calculation results of correlation between HAI3 or Participation and SCI

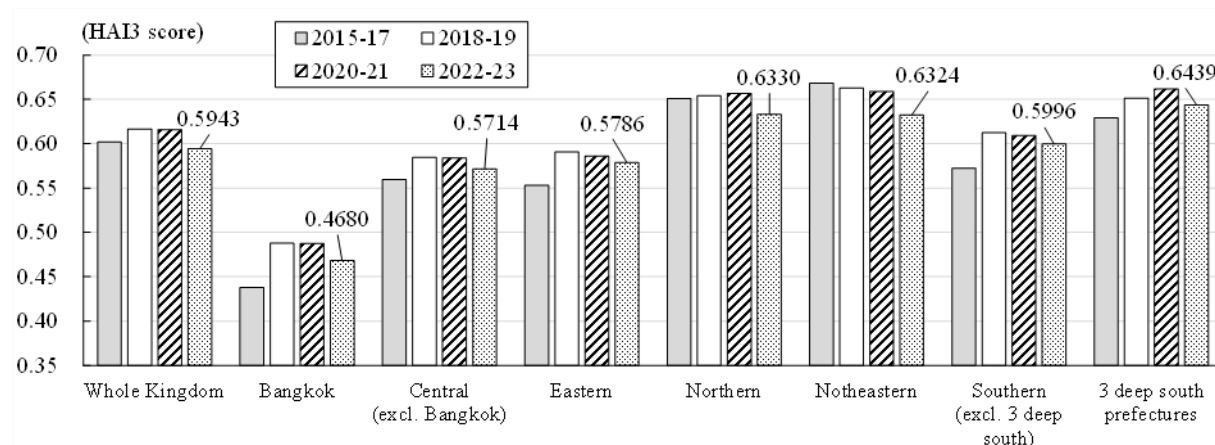
	Index value								R^2	
	2015	2016	2017	2018	2019	2020	2021	2022	R^2	Adjusted
SCI (1 year later)	34.5	34.5	38.5	44.9	45.6	49.4	49.2	44.7		
HAI3 total	0.6076	0.5944	0.6041	0.6179	0.6149	0.6182	0.6132	0.6022	0.5446	0.4686
Participation total	0.5436	0.5359	0.5565	0.5615	0.5620	0.5555	0.5456	0.5371	0.1725	0.0345

(Source) Estimation by the Author.

Analysis of HAI3 scores by region

Figure 4 shows an overview of the trends in HAI3 by region. To mitigate non-systemic annual fluctuations, the data are divided into four periods: the average for 2015-17, 2018-19, 2020-21, and 2022-23. The region of three deep-south provinces is for reference only, because the impact of the movement of a specific province on the index value is large.

The social capital accumulation is highest in the northern and northeastern regions, followed by the southern, eastern, and central regions, and extremely low in Bangkok. Looking at the changes over time, social capital was accumulated before COVID-19 in all regions, but only in the northeastern region, it decreased. Also, during the COVID-19 period (2020-21), social capital accumulation remained flat in most regions but decreased in the northeastern and southern regions. After pandemic (2022-23), all regions showed a decline in social capital accumulation.

Figure 4: Regional HAI3 score by region, 2015-2023.

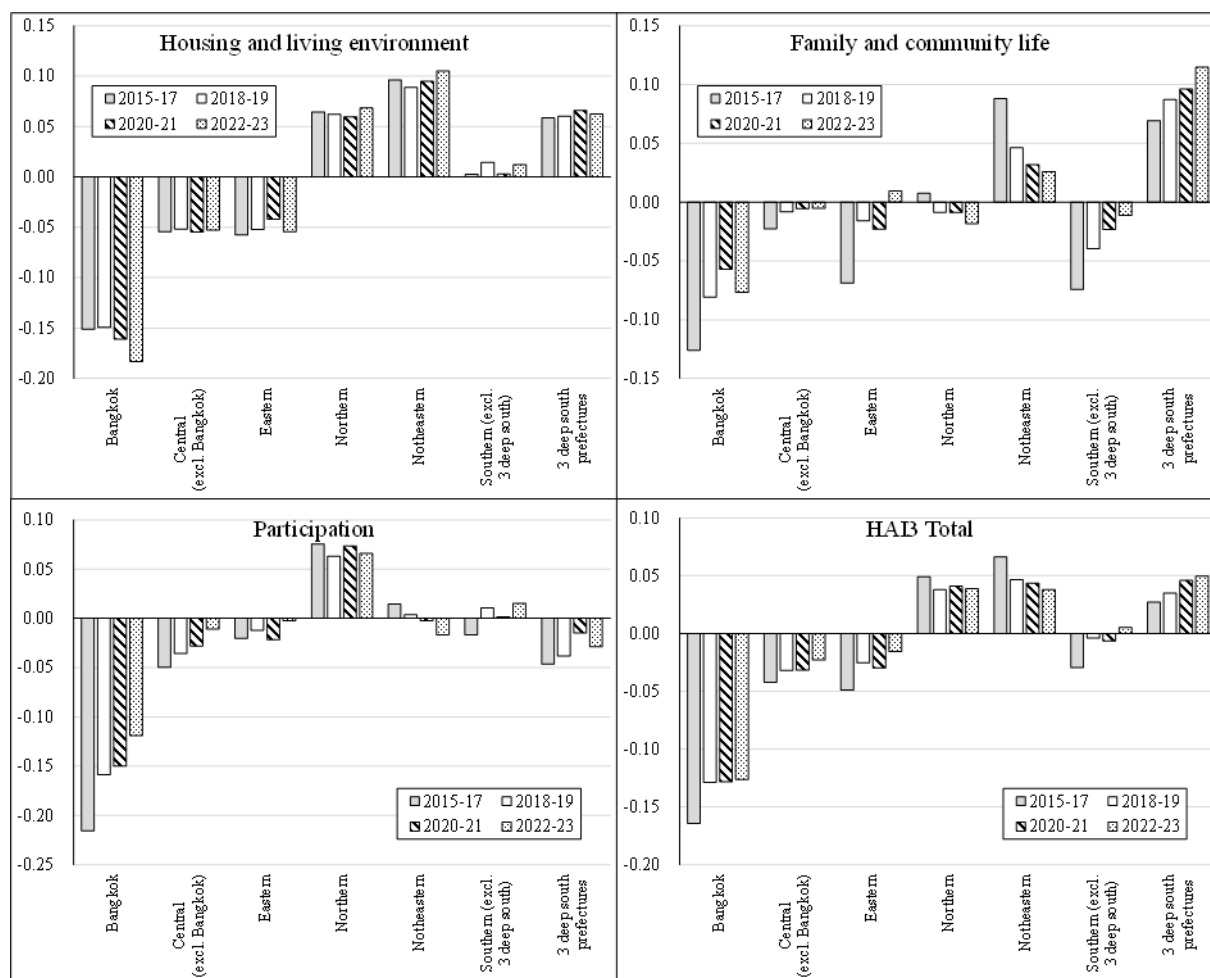
(Source) By the Author, calculated with the data from NESDC (2024).

Figure 5 shows the difference in the level from the national average for each region at each point in time for each of the three dimensions of HAI3. The scores of all three dimensions tended to be higher in regions with low income levels. Looking at the time trends (see “HAI3 Total” of Figure 5), narrowing regional disparities in social capital accumulation can be observed.

Further observations can be made for each dimension. Regarding “housing and living environment”, regional gap narrowed before COVID-19, but widened again in Bangkok, central and northeastern regions during the COVID-19 pandemic, with the deterioration being particularly notable in Bangkok. After the pandemic, regional disparity tended to be widened (except the central region). For the whole periods, regional gap had widened due to the widening of the gap between Bangkok and the northeastern (and southern) region.

Regarding “family and community life”, the trend toward narrowing regional disparities continued throughout the periods. Among the regions, only the northeastern region had a notably high score but it had decreased over time. In the post-COVID period, the figures for Bangkok and the northern region worsened, and in the northern region in particular, the figure was already below the national average before COVID-19. Regarding “participation”, only the northern region had a notably high score, and it was not high in the northeastern region. The regions with the scores lower than the national average (Bangkok, central, eastern) showed the increase in the score over time, which can be considered to contribute to social capital accumulation, while the pace of improvement stagnated during the COVID-19 pandemic (2020-21).

Figure 5: Scores of sectoral indices of HAI by region (difference from the national average).



(Note) As the HAI sectoral indices are calculated using the geometric mean of the scores for each indicator, the total of the histograms will not be zero.

(Data source) NESDC (2024).

Focusing on regional differences, the following can be found. First, in the regions where HAI3 increased significantly (i.e. Bangkok, central, eastern and southern regions. Figure 4), while the scores for “housing and living environment” did not change significantly, the scores for the other two dimensions (“family and community life” and “participation”) improved. The opposite is true for the northern and northeastern regions. However, in the northeastern region in particular, the relative decline in the index score was greater for “family and community life”, which was a major driver of social capital accumulation alongside “housing and living environment”. During the COVID-19 pandemic, the scores stagnated in all regions, but the regions having a decline in the score of “housing and living circumstances” saw an increase in “family and community life”, and vice versa (except the northern region). After the pandemic, all regions saw a decline in HAI3 score, but the decline in HAI3 score was greater in the northern and the northeastern regions.

Interestingly, the factors that contribute to the HAI3 the most were different between the northern and northeastern regions (the regions with HAI3 scores higher than the national average). In the northeastern region, “family and community life” contributed most, although

it continued to decline while “housing and living environment” increased slightly. This may reflect the fact that the main path of social capital accumulation is shifting from active involvement in the community to an interest in the surrounding environment through improving the comfort of one’s own life. In the northern region, the figures for “housing and living environment” and “participation” were high and stable over time, whereas the score for “family and community life” declined. On the other hand, an analysis of the extent of change by region shows that, in both the north and northeast regions, the scope of interest of individual members of society has not directed to local communities as before, and that this trend had not changed even during the COVID-19 pandemic. Looking at the characteristics of social capital in those regions, namely the places where social networks, norms of reciprocity and trustworthiness are manifested, it is possible that trustworthiness within communities and connections within people’s families are weakening and, instead, people in those regions become more aware of “housing and living environment”, or mutual aid in smaller group units.

In the eastern and southern regions, the score for “housing and living environment” was almost unchanged, while the scores for “family and community life” and “participation” increased. In these regions, in a social environment where social participation became more difficult during the COVID-19 pandemic, residents’ attention was directed more toward familiar groups, and it may be possible to say that they spent more time at home and in their surroundings more meaningfully (compared to other regions). This can also be discussed in relation to the factor mentioned in the previous section, that although social capital increased during the pandemic, this was not translated into economic activity. After the pandemic, “participation” regained in these regions, while the increase in the score of “family and community life” was maintained. These are considered to contribute to smaller decrease in HAI3 score than the national average.

5. Discussion for policy recommendations and limitations of the analysis

Discussion for policy recommendations that can be made from the analysis

From the analysis so far, the following “hampering factors” that prevent the accumulation of social capital from effectively translating into the efficiency of economic activity were identified; (i) poor quality education and vocational training and a mismatch between labour supply and demand; (ii) low-income earners’ reluctance against social participation due to the fixation of social stratification; and (iii) problems with the personnel system that prevents women from fully demonstrating their abilities. In addition, regional characteristics and problems in the accumulation of social capital include the following; (iv) the northern and northeastern regions’ contribution to social capital accumulation has become smaller, and (v) individual members of the societies in those regions are likely to become less interested in their families and local communities. Below, the discussion is focused on policies that address these issues and link social capital to the efficiency of economic activity, as well as measures to continue to promote the accumulation of social capital, particularly in the northern and northeastern regions.

Policies for improving social capital accumulation

(i) Regarding **quality education**, NESDC (2023, p.44) pointed out that the government should 1) eliminate the digital divide in education, 2) improve access to education with a focus on low-income households, and 3) develop policies to prevent regional disparities in education from widening again. Regarding 2) and 3), NESDC recommends policy measures that more directly support children from low-income households are important, such as for providing scholarships and improving the quality of education through instructor training. For higher education, the problem is that there is a mismatch between the faculties that students choose and the human resources required by the industry. However, the Thai government has not taken effective steps to alleviate the problem of mismatch. Even though social capital accumulation leads to greater number of university graduate, they will not be sufficiently active in the economy and society. The same can be said for vocational training.

(ii) Measures to address the **fixation of social stratification** at poorest income strata are similar to those in (i) above. The government introduced the State Welfare Card project in 2017 to provide supports for low-income earners' purchasing daily necessities. The fact that it targets 14.3 million people, accounting for 26% of the population aged 18 and over, implies that this project would not contribute to effectively eliminating the problem of the fixation of social stratification. The number of people in poverty was 3.43 million and the number of those who were at a risk of falling into poverty was 4.30 million (as of 2023). Taking this fact into consideration, the policy design with too many recipients results in too small amount of benefit per person. Same amount of benefit to 26% of population with low-income will maintain those in the lowest income group to be in the same (lowest) income decile group, failing in moving them to a higher income decile group. Besides, this program does not improve the employability of the target citizens. In the past, this project incorporated a temporary measure that increased the monthly support amount if a target person took vocational training. Such a "welfare to work" scheme should be implemented as a permanent measure. In addition, the income redistribution system is still insufficient in Thailand. The Standardized World Income Inequality Database provides Gini coefficients before and after income redistribution for 199 countries (Solt 2020; regarding the difference of two figures as the effect of the income redistribution policy), and the effect of redistribution policy for Thailand was -0.022 in 2021, smaller than Japan (-0.158) and China (-0.074). Furthermore, according to the World Bank (2021), 26% of low-income households were unable to access government consumption support-related programs conducted as a countermeasures against the influence of COVID-19, whereas the support measures have reached the middle-income earners well. As a result, the income gap between low- and middle-income earners has worsened, while the gap between the middle- and high-income earners has improved.

(iii) Regarding **women's participation in the decision-making process**, the problem with the gender gap in promotion to management positions is unchanged. In a situation where women cannot participate in the decision-making process, their abilities and talents are increasingly dormant in companies and industries, which will stifle the productivity growth of the Thai economy. Although it may be impossible for the government to directly intervene in individual private companies' personnel decision, the UN Women Regional Office for Asia and the Pacific (2022) proposed indirect promotion measures to improve gender equality in the private sector. The measure includes corporate accountability and disclosure regarding

gender equality in financial markets, and promoting female entrepreneurship in small and medium-sized enterprises and government procurement from companies that hire female talent. These approaches are close to ESG (Environment, Society and Governance) investment, and its recent rise may play a role in solving this problem as long as investors see much about the gender equality in the personnel promotion in the companies concerned.

(iv) Regarding **policy measures to address problems in terms of social capital accumulation in northern and northeastern regions**, it is necessary to guarantee that each region can develop various economic and social circumstances based on the regions' own discretion. To realize this, further decentralization is necessary, particularly in terms of fiscal autonomy. A quick look at the factors that are reducing social capital in Table 2 reveals that the accumulation of social capital itself is being hindered by a lack of economic structural reforms and administrative system reforms. Once the autonomy of local government is improved, the policy measures should be taken to improve "participation" and "families and local communities" in provinces in the northeastern regions by their own discretion. In order to improve the score of "participation", local organizations that work for communities should be strengthened financially and in terms of personnel retention. Local governments' assistance by giving subsidies to the activities and tax waiver for the households participating in activities for local communities are options on this matter. The issues on "families and local communities" is discussed below.

(v) Regarding the phenomenon that individual members of society are **less interested in their families and local communities**, this is a natural occurrence as the industrial core shifts from agriculture to other industries. On the other hand, the decline in this figure can be mitigated if each economic entity engages in higher-level industries without being overly isolated from their families and local communities (through the decreases in "percentage of single-person households" and "percentage of elderly people living alone", both of which are its component indicators). To this end, it is necessary to modernize and increase the added value of the agricultural sector, and promote industrial agglomeration in areas where people can commute from home. Modernization and high value-added agriculture policy are closely linked with the policy to improve access to education and vocational training opportunities and that to promote the provision of entrepreneurial and working capital to those with such skills. Promotion of industrial agglomeration in rural areas results in the creation of many regional cities. By implementing these policy measures in the northeastern region, where an improvement in "housing and living environment" has been seen, workers in the region become less necessary to go to metropolitan for the work in non-agricultural industries, and people's engagement with their families and local life will be able to increase once again. Such projects should be done in conjunction with efforts to improve access to education and vocational training opportunities in the northern region, where there has been an increase in "participation". In this regard, it is important to learn from the past failure of the special economic zones in border provinces (Border SEZs) construction projects that the Thai government envisioned in the mid-2010s. The failure was mainly due to insufficient fiscal decentralization and the lack of investment funds from the central government for infrastructure development.

Limitation of the study

Even though this study can contribute to policy discussions as above, it should be noted that there are limitations in analysis tools and methods, which may mitigate the persuasiveness of the recommendation. In particular, (1) discussions can be done regarding the appropriateness of employing the dimensions of the HAI to derive an index to measure regional accumulation of social capital (discussion on other possible data sources). Also, the appropriateness of choosing the three dimensions extracted from HAI, and the weight of each of three dimensions in generating a composite index (HAI3), can still be argued.

There are some limitations in the estimates. (2) The identification of the models was done through the overview of the scatter plot, taking a possible relationship between the variables into consideration. However, if strong policy recommendations are to be made, testing of robustness may become of greater importance. Besides, (3) I used the published data of SolAbility and the component indicators of the HAI only, in the light of data availability from a single source and annual publication. Depends on the research interest, it may become important to follow Grootaert *et al.* (2004) in selecting and finding the data, or creating new indicators in some cases, even if the study is a national or regional level analysis. (4) As for the interpretation of the estimates, available data are not enough and their fluctuations are too large to make solid comparison of the periods before and after COVID-19 if annual data is used, as explained before (although this problem will be smaller as time passes).

The results and policy recommendations of this study are made with these limitations, and there are some points that need to be improved in terms of their reliability. Nevertheless, this study will serve as an opportunity to throw a new stone into future social capital research.

6. Conclusion

This study attempted to first understand the state of Thailand's social capital accumulation in contrast to its economic development stage. The analysis showed that Thailand's social capital accumulation is not beyond the average but can be accelerated, which has the potential to positively contribute to Thailand's economic efficiency. In practice, however, Thailand's GDP growth rates have been low for a decade. There may be obstacles that prevent good social capital accumulation from translating into economic development. The obstacles are the lack of access to quality education and vocational training, fixation of social stratification over generation, and low proportion of women in managerial positions. In order to eliminate these obstacles, this study discussed the importance of improving the quality and accessibility of education and vocational training, provision of support measures that are more focused on the poor and low-income earners for easing the problem of fixation of social stratification, and taking measures to increase the proportion of women in senior and middle management positions through the promotion of ESG investment and the like.

In addition, the analysis on the recent situation regarding the accumulation of social capital by region shows that northern and northeastern regions contributed to social capital accumulation and the accumulation in Bangkok was low. However, the gap of the accumulation between regions had narrowed over time until 2022-23. The pace of the accumulation in northern and northeastern regions has slowed due to the decline of the score for "family and community

life". Possible causes of this decline include outdated industrial structure in the regions that urge former agricultural workers in the regions to move to metropolitan areas for work. To curb this decline and promote further accumulation of social capital, this study emphasized the importance of promoting fiscal decentralization, develop many regional cities, and upgrade industries in the region including the modernization and high value-added agriculture. On the other hand, the current cash benefits and support measures to reduce the burden of living expenses for low-income earners have not been effective so far in helping the poor escape from the fixation of social stratification. Improving employability through vocational training and other measures is also important in the regions.

From the findings coming from SCI and HAI3, the government measures to further increase social capital and eliminate obstacles ultimately come down to (administrative and) fiscal reforms and economic policies including economic structural reforms. That is, the necessary policy measures to take for smooth translation of social capital accumulation into economic efficiency are compatible with the necessary policy responses for the country to go beyond the so-called middle-income trap. There may be a general criticism that economic structural reforms destroy communities and societies, but this study discussed that, even if trustworthiness and solidarity within communities are fostered and people networks are formed, this does not lead to a better society unless economic structural reforms. Further reform efforts will be expected to be made so that the impediments identified through the analysis can be eliminated and a virtuous cycle of human relationships and economic and social development can be fully realized in Thailand.

Even though there are limitations in this study mentioned above, I expect this study to contribute to expanding the literature on social capital and economic development of middle-income countries in academic discussions. I also expect it to broaden policy discussions on social capital and economic and administrative reforms in the policymaking at both national and provincial levels. The study identifies necessary policy responses of the central and local governments to structural weaknesses that hinder the transformation of social capital into economic efficiency, together with the urgency of regionally differentiated and decentralized policy design for local communities of each region.

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