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The potentials and limitations, and specialization of regional cities in Thailand

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Abstract

This research article aimed to highlight the potentials and limitations, and the specialization of regional cities in Thailand. Multiple data collection techniques were applied: direct field observations, key informant interviews, a literature review, and data retrieval from the Internet. A geographic information system, descriptive statistics, and content analysis were utilized for data analysis. It was found that all regional cities had potential in the population aspect as the highest concentration of urban population in their individual regions, the center of non-farm sector production, and the educational center (except Songkhla with the outstanding role as the commercial and service center overshadowed by Hat Yai's influence). Limitations were also found in various social services (especially for public health) as well as in road network and urban structure (except Chiang Mai with its well-planned road network). It could thus be summarized from the present status that all regional cities were centers of human settlement and urbanization. In comparison to other regional cities, Chiang Mai's specialization was mostly in commerce and education. Khon Kaen was the industrial center and the growth center of the western Indochina Peninsula. Chonburi specialized in export-oriented manufacturing and international trade, enhanced by Mueang Pattaya—the hub of world-class tourism. If the role of Hat Yai were taken into account, Songkhla would be the border trading center of the central Malay Peninsula.

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Introduction

As a result of the previous 11 national socio-economic development plans, Thailand's development has continued to face severe unbalanced growth. The Bangkok Metropolitan Region (BMR, comprising Bangkok Metropolis and five neighboring provinces, namely Nonthaburi, Pathum Thani, Samut Prakan, Samut Sakhon, and Nakhon Pathom) has accommodated migrants from all over the country and absorbed major investments due to the industrial-led and urban-bias policies implemented for the past 50 years. In 2010, there were more than 7 million inhabitants registered in BMR which made the region the country's largest urban

agglomeration. Unlike other Southeast Asian countries that could balance the growth of urban areas effectively, Thailand's unbalanced urban system contains the largest urban agglomeration that is 24 times greater than Hat Yai urban area—the second largest city of the South (Central Intelligence Agency, 2012; Jongkroy & Thongbai, 2014).

Previous results from the research on "Patterns of the Spatial Distribution of Urbanized Areas in Thailand" noted that the unbalanced growth was influenced by the inefficiency and inconsistency of national policy implementation. Although the regional growth pole concept was highlighted in the 3rd National Plan, decentralizing growth to regions was unsuccessful. This research, therefore, aimed to identify the specialization of each regional city in Thailand that would contribute to the body of knowledge to support the formulation of appropriate national development strategies.

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Research Objectives

1. To assess the potentials and limitations in the development of regional cities in Thailand.
2. To analyze the specialization of regional cities in Thailand.

Scope of the Study

To conduct this research, three aspects of study scope were designated. In the spatial context, the study areas were based primarily on four regional cities: Chiang Mai (regional city of the North), Khon Kaen (one of two regional cities of the Northeast located in the central part of the region), Chonburi including Pattaya City (regional city of the East), and Songkhla including Hat Yai (regional city of the South). By content, the analysis of the potentials and limitations of the regional cities used to highlight the regional specialization covered four aspects: policy (the connection of the national policy to local development plan), basic infrastructure (connectivity, accessibility, and social service delivery), economic base (the proportion of gross provincial product by sectors and the analysis of location quotient), and population (distribution, density, growth, and proportion of urban population). Since this research was dynamic, its temporal scope aimed at changes from 1998 to the present: the data from field surveys were gathered during 2014–2015, while economic and population analysis utilized the data from 1998, 2003, 2008, and 2013 (only population data).

Literature Review

This research was developed under the concept that the country's regional city development policy that was one of the efforts of decentralization to create sustainable urban development (Lynch, 1981 as cited in Pacione, 2005, p. 619).

In other words, a growth pole, or regional growth center with investment in a special zone to stimulate regional economic development, could act as a center for hinterland development (De Blij & Muller, 2002) and should lead to the re-distribution of centrality and progress from the capital to major regional cities in the country.

Since 1961, Thailand's development strategy and target areas have constantly changed. Economic development of the capital and its environs resulted in persisting social, economic, and physical inequality. Thus, the urban system in Thailand remained unbalanced, as noted in the research entitled: "Patterns of the Spatial Distribution of Urbanized Areas in Thailand". It was stated that even if the primate city index or the ratio between the population in the primate city and the urban population in the second largest city decreased from 34.9-fold in 2003 to 23.9-fold in 2010, the primacy of the capital—Bangkok—clearly existed (Jongkroy & Thongbai, 2014). These observations culminated in the assumption that ineffective implementation of regional growth center development policy coupled with disruptive policies could result in an unbalanced urban system in Thailand, as illustrated in the conceptual framework (Figure 1).

Methodology

To achieve the main objectives, a mixed research methodology was applied. Collection of primary data on infrastructure (connectivity and accessibility, location of social services delivered in the study areas) and the attitude towards the connection of national policy to local development plans were carried out by direct field observations and interviews with key informants (the governor or the governor's representative). Secondary data on social, economic, population, and national policies were retrieved from documents and the Internet.

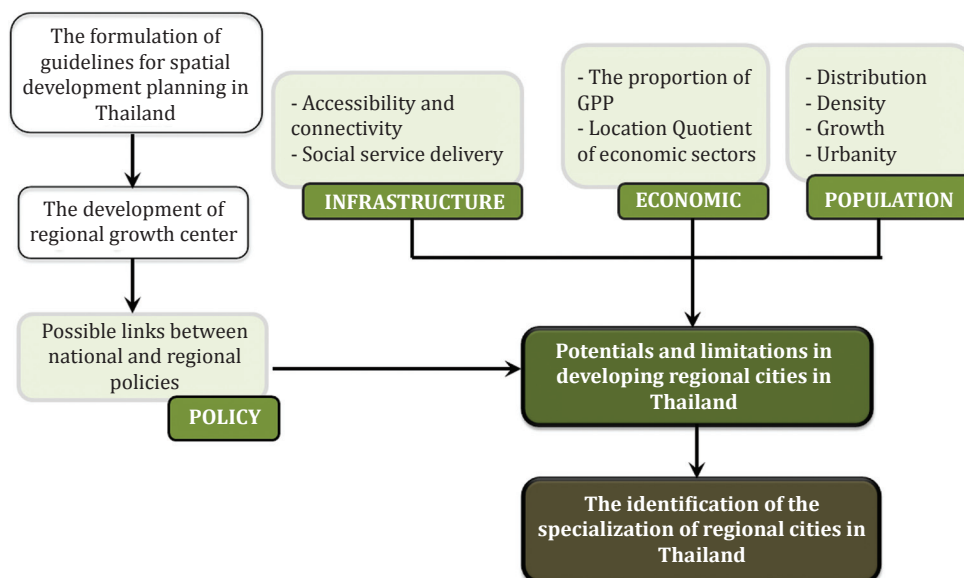


Figure 1 Research conceptual framework

The nearest neighbor index (NNI) was calculated using a geographic information system (GIS) command known as 'Average Nearest Neighbor' to indicate the pattern of spatial distribution of three types of social services: public health (hospitals), education (schools), and trading (convenience stores). The clustered pattern together with the availability of high-order social services reflected the high degree of centrality in social aspects. In addition, descriptive statistics and the location quotient (LQ) were used for population and economic base analysis. Finally, the GIS was used to integrate the spatial data on accessibility and connectivity and shown in maps, while content analysis was used to integrate the physical, population, and socio-economic data.

Results and Discussion

The results and discussions are presented in two parts: potentials and limitations of regional cities in Thailand, and the specialization of Thai regional cities which are summarized below.

Potentials and Limitations of Regional Cities in Thailand

The research findings on the potentials and limitations of regional cities in Thailand are summarized in two parts: the centrality of Thai regional cities, and the summary of the potentials and limitations of each regional city as follows.

The centrality of Thai regional cities: Nodes of policy, infrastructure, economy, and population

1. Policy

Reviews of planning guidelines and spatial development in all 11 national social-economic development plans (the National Plan) indicated the continuing over-emphasis of metropolitan area development. Regional center development was first outlined in the 4th National Plan. Five major urban centers were identified in the following 5th National Plan, consisting of Chiang Mai in the North, Khon Kaen and Nakhon Ratchasima in the Northeast, Chonburi in the East, and Songkhla-Hat Yai City in the South. However, decentralization into the various regions of Thailand was inconsistent. Spatial development target areas consistently changed from the 5th National Plan onwards, with the exception of the Eastern Seaboard that was carried through from the 5th to the 8th Plan. It was clear that the increase in spatial development target areas was necessary, but such an increase without maintaining the importance of growth centers invariably signified the government's lack of commitment in its decentralization effort.

2. Infrastructure: road networks and social service delivery

- *Road network:* Direct field observation together with map reading and satellite image interpretation indicated different levels of accessibility and connectivity of the road network in each regional center in Thailand, as shown in Figure 2.

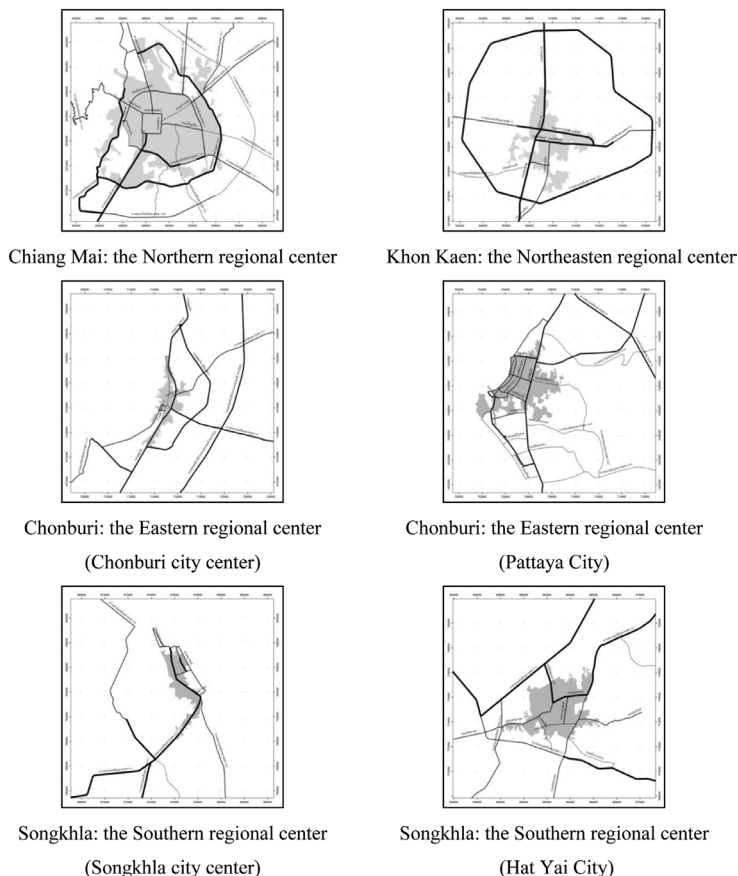


Figure 2 Main road networks around regional growth centers in Thailand

Figure 2 clearly shows that Chiang Mai was the regional center with the best infrastructure plans compared to the other regional cities. Its road network coverage had efficient linkages to the outer areas through ring roads connected to feeder roads in a radial pattern, coupled with the grid pattern of roads in the central area of Chiang Mai.

On the other hand, Khon Kaen had low accessibility to its central business district (CBD) and low connectivity with the surrounding provinces. Its problems stemmed from the fact that its road network had only one ring road that was located far from the city center. The missing inner ring road and the limited numbers of both primary and secondary roads to the CBD and the surrounding provinces further exacerbated the problem.

Despite its well-planned road network, Chonburi and Pattaya City—the world-famous tourist attraction—also had low accessibility to the respective CBDs due to narrow roads. Nevertheless, the services provided by the international airport, the internationally acclaimed deep sea port, and the relative location to the capital, all contributed to Chonburi's high level of connectivity.

Songkhla, with its twin city Hat Yai that has achieved higher centrality in almost every aspect, is a regional city with a very limited road network. Its deep sea port and relative location in relation to the neighboring country in the central Malay Peninsula plus the railway with international linkages

resulted in its moderately high connectivity. However, an unplanned road network lacking major intersections has led to an elongated settlement pattern signifying an inefficient urban system. Moreover, most of the roads are very narrow resulting in limited accessibility to central places in both Hat Yai and Songkhla City.

- *Social service delivery*: It was found from the analysis of NNI that all the regional cities had a rather high level of centrality in social aspects. Provinces with twin cities, namely Chonburi with Pattaya as a well-developed tourism business, and Songkhla with Hat Yai as the South's most important trading center, were in an advantageous position because their twin cities enhanced their role as the regional centers providing social services. While Pattaya enhanced Chonburi's level of commercial center, Hat Yai strengthened Songkhla's level of centrality in every aspect (Table 1).

3. Economy

Analyses of changes in the values of the gross provincial products (GPP) in four major production groups of each regional center indicated that Chiang Mai specialized in the "trading and service group". The city was the only regional center with lackluster "production sectors". Chiang Mai's most important economic sectors were hotels and restaurants, and transportation, in tune with its role as the tourism center mentioned above (Figure 3).

Table 1 Summary of the degree of centrality in Thailand's regional cities

Regional city	Degree of centrality in social aspects				Outstanding sector
	Health	Education	Trading	Overall	
Chiang Mai	Moderate	High	Moderate	Moderately high	Education
Khon Kaen	Moderate	High	Moderate	Moderately high	Education
Chonburi	Moderate	High	High	Moderately high	Education and trading
Songkhla	Moderate	Moderate	High	Moderately high	Trading

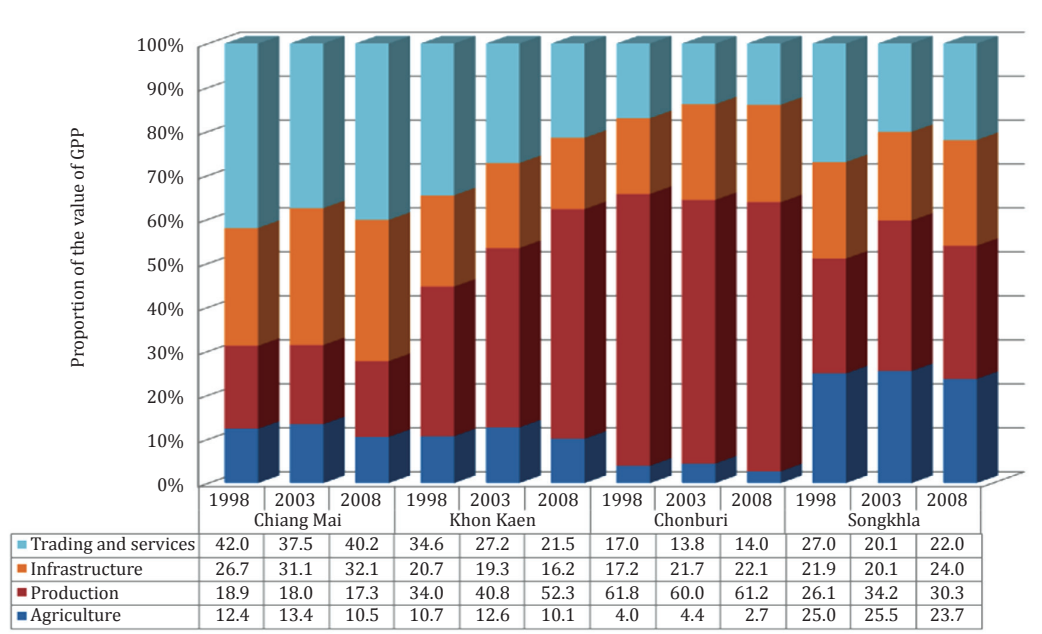


Figure 3 Proportion of gross provincial product in four major sectors

Figure 3 clearly illustrates the specialization of Khon Kaen and Chonburi in the “production sector” which had the highest proportion of GPP. Despite its insignificant construction and mining and quarrying sectors, the growth and productivity of Khon Kaen’s manufacturing sector was outstanding not only at the provincial level but also at the regional and the national levels.

Chonburi’s most outstanding sector was manufacturing, accounting for 58.9 percent of its GPP in 2008. Its specialization in manufacturing was so great that it could export its products (regional LQ value of 1.047 and national LQ value of 1.469). Manufactured goods that earned large amounts of revenue for Thailand included electrical, petrochemical, food, and metal and non-metal products.

All of Songkhla’s economic sectors were found to be the most balanced of all the regional cities. Analysis of its various sectors indicated that the most outstanding sector was construction.

4. Population and urbanization

As balanced population distribution is considered a significant characteristic of an efficient urban system, this research also highlighted the findings on population distribution in each region. If the Bangkok Metropolis and the Central region were set aside, it was found that the regional population distribution was rather balanced. The East’s largest city was 2.01 times larger than its second largest city while the primary city in the Northeast, the North, and the South was 1.42, 1.38, and 1.11 times larger, respectively. Chiang Mai—the North’s regional center—and Chonburi—the East’s regional center—were the largest cities in their respective regions. On the other hand, the largest cities in the Northeast and the South, in terms of population, were not their regional cities (Figure 4).

Among the four regional cities, Chonburi had the highest proportion of urban population in comparison to the other provinces in the East (29.1% of the East’s population), followed by Songkhla (15.2% of the South’s population), Chiang Mai (14.1% of the North’s population), and Khon Kaen (8.2% of the

Northeast’s population).

Chonburi was still the regional center with the highest level of urbanization because it had the highest proportion of urban population (68.2% of the total population with an urbanization index of 0.68; the United Nations classifies an urbanization index of over 0.40 as a highly urbanized area). At the same time, Songkhla, Chiang Mai, and Khon Kaen had smaller proportions of urban population (49.1%, 37.7%, and 26.5%, respectively). Furthermore, Chonburi’s average annual urban population growth of 9.22 percent (higher than that of the East) was an indicator of its urbanization.

Apart from Chonburi, Chiang Mai and Songkhla were two other regional cities experiencing urbanization (with a higher population growth rate than the regional average). However, their urbanization was lower than in Chonburi. Nevertheless, their urbanization levels could still be considered as high and relatively high, respectively.

Khon Kaen had the lowest level of urbanization, with an urbanization index of 0.27 which was considerably low in the United Nations’ criteria. Moreover, its population growth rate was also lower than the Northeast’s regional average. Thus, Khon Kaen possessed the weakest population aspect in comparison to the other regional cities.

Summary of the potentials and limitations of each regional city

For the past 30 years, regional city development in Thailand could not be pronounced a clear success. Although all the regional cities have continued to accommodate population growth in their own region, their development has been very slow due to the disruptive national policy that has constantly changed the development target areas. At present, these regional cities continue to grow. However, the current provincial development direction was linked to (or implemented through) the 9th and the 10th National Plans’ cluster development policy more than the regional center development concept *per se*. As a result, each regional center had potentials and limitations as follows.

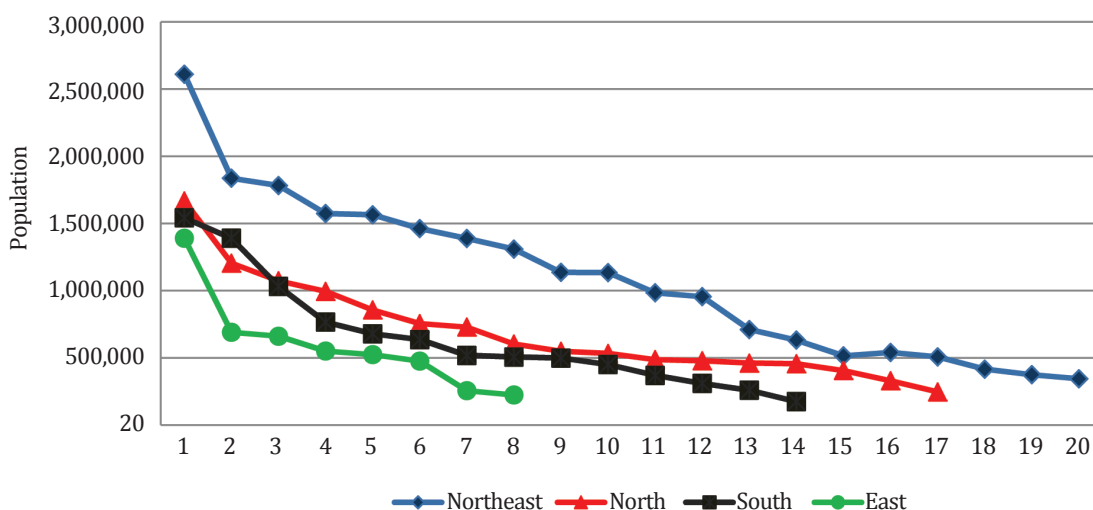


Figure 4 Ranking of provinces in each region of Thailand by population size

1. Regional city of the North: Chiang Mai

Chiang Mai was a regional center with potentials for sustainable growth despite its limitation as an old city with a central precinct full of historical sites and old, sparsely-populated settlements compared to other regional cities. Narrow roadways in the inner area were the major obstacle to a density increase but one-way traffic has partly eased the problem. Economically speaking, the sectors plagued with variable productivity that constituted Chiang Mai's weakness are manufacturing and mining and quarrying.

On the other hand, Chiang Mai's potential as a regional center was based on its strength in various positive tourism business development factors. They included natural or eco-tourism and cultural or lifestyle tourism that have drawn heavily on the mild climate and beautiful scenery together with its long history and unique local culture. Moreover, Chiang Mai also had infrastructural potential due to its road network coverage leading to the best accessibility to the inner area as well as connectivity to the outer area in comparison to other regional cities. The strongest production sectors, as a result, were trading and services, especially hotels and restaurants and transportation sectors.

2. Regional city of the Northeast: Khon Kaen Province

Amongst the four regional cities, Khon Kaen had the slowest growth despite several advantages. Its central location within the Northeast coupled with its relative location with easy access to neighboring countries in the central Indochinese Peninsula resulted in numerous international-level spatial development projects in the province. Khon Kaen's outstanding manufacturing sector created huge GPP, especially the paper and paper product industry, the food and beverage industry, electricity, and transport. Even though the textile and garment industries did not contribute as much, they were major employers in Khon Kaen.

The outstanding characteristic of Khon Kaen's economic system was the fact that manufacturing was the sole sector that dominated all other economic sectors and was on an upward trend in every time period studied. At the same time, the infrastructure sector was Khon Kaen's specialization as indicated by its LQ in comparison to other provinces in the Northeast, with much lower infrastructure investment. Nevertheless, the proportion of investment value in infrastructure was found to be low with a downward trend that could seriously affect the province's manufacturing sector sustainability in the future. Furthermore, production in the trade and services, with a high proportion of revenue that has been in decline, indicates that more attention should be given.

Another major weakness of Khon Kaen was its low accessibility and connectivity due to an old unattractive airport with highly problematic floor space design and the road network that needed urgent development. Its strong-center strategy network with no circular roads, narrow roads with an inadequate radial road network and only one ring road that was constructed too far away from the city center all contributed to the failure in easing traffic congestion of the inner city.

3. Regional city of the East: Chonburi

Chonburi was the regional center with the production

sector group that was the most distinctive, accounting for 61 percent of the GPP in the latest year. Furthermore, Chonburi is the regional center located nearest to Bangkok Metropolis, the country's largest market, plus its large deep sea port connecting to the outside world, has led to the strongest clustering of production sectors of the four regional cities. Such distinction resulted from the long-continuing spatial development policy at the national level that aimed to develop the Eastern Seaboard.

The electricity industry was Chonburi's top revenue earner, accounting for one-third of provincial revenue from the manufacturing sector, followed by the petrochemical, metal and non-metal, food, and plastic industries. At the same time, labor-intensive industries included the electricity, food, metal, and plastic industries. Expansion in the manufacturing industry coupled with the opportunity to develop the production and tourism industries attracted immigrants from all over the country. As a result, Chonburi had become the regional city with the highest level of urbanization, the fastest growth rate, and the highest average provincial population density.

Despite Chonburi's close proximity to the Bangkok Metropolis, its complete urban development would be difficult to achieve because of the capital's dominance. Another weakness was its unbalanced economic system, compared to the other regional cities, resulting from its designated role as the center of the Eastern Seaboard manufacturing and service industry development that has left the agricultural sector very weak and so it has had to depend upon imports from nearby provinces. Although Chonburi has invested more than other Eastern provinces in infrastructure, this investment was smaller as a proportion than the investment in its other production sector groups. Moreover, its outstanding manufacturing development above all other sectors with very little investment in infrastructure might lead to future decline in manufacturing development that has been the province's leading sector.

4. Regional city of the South: Songkhla

Songkhla's advantage was in its relative location to the prosperous southern neighbor that is more stable than its northern neighbor. Furthermore, its international airport and deep sea port enhanced its opportunity to diversify its economic development. It could be argued that Hat Yai City was like the South's capital supporting its economy and had grown in tandem with Songkhla City with a large number of tourists who came to shop. Economic development opportunity resulted in a moderately high level of urbanization in Songkhla province with the highest population density amongst the four regional cities due largely to the high population density and economic activities in Hat Yai City. When compared to the other regional cities, Songkhla could be said to have the most balanced economic system. From previous years, investments in major production sectors—production, trading, agriculture, and infrastructure--were almost comparable.

All things considered, the problem of unrest in the three southern border provinces has caused violence that has spread to the southern part of Songkhla especially in Singhanakorn district, or the bombings in the airport and in Hat Yai's CBD

as well as criminal activities have frequently disrupted Songkhla's economy. Weak urban structure both in Songkhla City and in Hat Yai City especially the road network that has lacked proper management has caused serious traffic congestion in Hat Yai City and even in Songkhla City with much less activity and a lower population density than in any of the other CBDs under study. Traffic congestion was particularly acute during rush hours because of the road network with neither planned primary or secondary roads nor ring roads to ease congestion on the main roads.

Specialization of Thai Regional Cities

Specialization of regional cities in Thailand was determined based on the analysis of the potentials and limitations of each regional city mentioned above, from the National Economic and Social Development's publication on 'Thailand's Management of Regional and Spatial Development' (Kmonwatananisa, 2008; Lu & Deng, 2011). The specialization can be summarized as follows.

Specialization of Chiang Mai:

The distinctive role of Chiang Mai resulted from its world-famous tourist destination with a good mix of natural tourism, lifestyle tourism, and cultural tourism. Chiang Mai has become the regional city with a major role in trading and services to accommodate various tourism activities. Moreover, analysis of centrality in terms of infrastructure indicated that Chiang Mai was also a regional educational center.

Specialization of Khon Kaen Province:

In the Northeast, Khon Kaen was the center of manufacturing, especially paper and paper products, food and beverages, electricity, and transportation, as well as textile and garments. Khon Kaen was a social service center for education resulting from being the site of the nationally famous Khon Kaen University. Furthermore, if its transportation could be developed into an effective network, then Khon Kaen could very well serve as a growth pole for the Mekong sub-region connecting neighboring countries in the upper Indochinese Peninsula.

Specialization of Chonburi Province:

Amongst the regional cities in Thailand, Chonburi could be said to be an important center not only at the regional level but also the national level for manufacturing and its export-oriented production base. Pattaya's fame as a tourist destination also enhanced Chonburi's role as a world-famous sun-sea-sand tourism center. Analysis of the level of centrality for infrastructure service found that Chonburi was a regional educational center with famous educational institutions. The long-continued tourism business growth in Pattaya has made Chonburi the trading and service center as well.

Specialization of Songkhla Province:

Songkhla was clearly the southern regional city enhanced by Hat Yai—its twin city. Songkhla had successfully integrated the manufacturing of fishery and marine animal processing with its role as a financial service center and border trading

area connected with ASEAN neighboring countries in the Malay Peninsula. Such roles as the center for trading, financial intermediation, and tourism services were in harmony with its role analyzed from its level of centrality in infrastructure. The analysis found that Songkhla (supported by Hat Yai) was an outstanding trading center that was different from the other regional cities under study. Whereas the other regional cities were outstanding as educational centers (being the site for nationally famous higher education institutions in each province's central area), the level of Songkhla's centrality as an educational center was only moderate.

Conclusion

The research results, in harmony with the research objectives, could be summarized from the content analysis and descriptive statistics of the data gathered from the literature survey, satellite image interpretation, direct field observation, and in-depth interviews of key informants, as follows.

Potentials and limitations of Thai regional cities

Evaluation of the potentials and limitations in regional city development was divided into three aspects: infrastructure, economy, and population. It was found that regional cities of the Northeast, the East, and the South all had development limitations due to their infrastructural weakness in accommodating urbanization and in portraying the role of Thailand's regional cities. At the same time, the North's regional city had the infrastructure that could facilitate a high level of connectivity with many one-way traffic enforcements but its narrow roadways without any clearance on either side to accommodate future expansion resulted in moderate accessibility to its central place.

From the socio-economic aspect, it was found that each regional city had the potential of population clustering at the highest proportion in each region coupled with being the center for non-agricultural production. However, their development target was rather general with no specificity. Most of the regional cities under study had potential and specialization in manufacturing production. Nonetheless, only Chiang Mai had specialization and potential in tourism-related trading and service development. Even so, Chiang Mai, Khon Kaen, and Chonburi had potential to become the educational center for their respective region as well. Spatial development direction to support these socio-economic activities still lacked the continuity of the target area within Thailand's regional development.

Specialization of Thai Regional Cities

Summarizing from the current status, it was found that all regional cities were centers that could accommodate the population and urbanization. Each regional city had either a similar or different roles of a center, as follows.

Chiang Mai was the trading and service center geared for various tourism activities at the national and the international levels. It was also a regional educational center.

Khon Kaen was the growth pole of the central Indochinese Peninsula as well as the regional manufacturing and educational centers.

Chonburi was the center for national, export-oriented manufacturing and international trade. It was also a world-class tourism center and a regional educational center.

Songkhla was the center of border trading and financial services as well as the growth pole of the Malay Peninsula.

Recommendations

The research results clearly pointed out the lack of connection between national policy and the local development plan that has led to regional cities with no specialization or unique role. Their development, therefore, was deprived of specific direction. To address this situation, national agencies should pay more serious and continuing attention to linking national policy with the provincial and the local policies. Furthermore, twin cities should be identified to enhance the role of centrality and to decrease the congestion of activities. Development of public health services should be expedited. The road network should also be upgraded to increase accessibility and connectivity with other provinces in the same region as well as with neighboring countries in the Indochinese Peninsula and in the Malay Peninsula.

Conflict of Interest

There is no conflict of interest.

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