CHAPTER I
INTRODUCTION

1.1 Rationale of the Research

1.1.1 Background

Public transportation enables people to travel across different areas, whether for tourism, work, or personal errands. Additionally, it creates job opportunities within communities, enhancing income and overall well-being for local populations. As a result, public transportation plays a crucial role in driving the nation's travel and tourism industries. Among land-based public transportation systems, rail transport is the most cost-effective option. In developed countries, rail systems are promoted as the primary mode of intercity transportation (Buehler & Pucher, 2011; Chen, Shen, Wang, & Yang, 2017; Pagliara, Hayashi, & Ram, 2022) due to their high safety standards, low travel costs, convenience, and punctuality (Lee, Yen, & Chou, 2016) compared to other transportation. Furthermore, rail transport is considered a sustainable mode of travel (Dong, Ma, & Broach, 2016; Tang & Lo, 2008).

1.1.2 Context of Railway Route Inequality in Thailand

However, considering Thailand's current situation, the country is still classified as a developing nation. As a result, advancing logistics infrastructure projects particularly rail transport systems that connect all regions domestically and internationally has become a key priority. This initiative has been established as a core policy for the future, with Thailand aiming to position itself as a regional transportation hub, linking ASEAN countries to China, which is rapidly expanding in all aspects (Thai Civil Rights and Investigative Journalism, 2024). Despite these ambitions, inequality remains a critical and unresolved issue in Thailand. According to the CS Global Wealth Report in 2018, Thailand ranked as the third most unequal country in the world and had the highest level of disparity among its population (Credit Suisse, 2018). This inequality is evident in various aspects, including living standards and access to public transportation. One of the most pressing challenges is the lack of a comprehensive railway system that adequately serves the population. Recent statistics on intercity rail transport indicate that Thailand's railway stations serve only 47 out of 77 provinces,

covering just 61.04% of the country (State Railway of Thailand, 2022). Additionally, 30 provinces remain without railway access. On a district level, even provinces with rail connections do not always provide full coverage. Thailand has a total of 928 districts (Department of Environmental Quality Promotion, 2015), yet there are only 442 railway stations nationwide (Data Innovation and Governance Institute, 2023), covering just 48% of all districts. This limited access creates significant disparities in railway availability, particularly for residents in underserved areas. The effects of this inequality are reflected in declining railway passenger numbers. According to the State Railway of Thailand, passenger volumes dropped by 88.8% in 2021, with an average of only 138,169 passengers per day (Department of Rail Transport, 2021). The primary reason for this decline is the inaccessibility of railway routes, as many stations are located far from residential areas, further exacerbating transportation inequality among the population.

1.1.3 Belt and Road Initiative

The Belt and Road Initiative (BRI) is a global cooperation policy led by China (Ohashi, 2018) that has gained significant attention worldwide. Under the ASEAN Connectivity framework, member countries aim to enhance links with China, believing that such integration will generate multifaceted benefits across the economy, tourism, society, and culture, especially since China is now the world's largest market, second only to the U.S. consumer goods market (Schulhof, Van Vuuren, & Kirchherr, 2022). A key infrastructure project under the BRI is the China–Laos high-speed railway, which connects Vientiane, the capital of Laos, with Kunming, the capital of China's Yunnan province. Covering a total distance of 1,035 kilometers, the railway was officially inaugurated on December 3, 2021, and operates at a maximum speed of 160 kilometers per hour for passenger transport (Thai Public Broadcasting Service, 2022). Today, this railway route is becoming increasingly popular among tourists worldwide.

As an ASEAN member, Thailand holds significant potential and advantages in connecting this railway route. One key advantage is its geographical location, sharing an 1,810-kilometer border with Laos. According to trade data from the Ministry of Commerce in 2020, cross-border trade between Thailand and Laos accounted for 99.2% of Thailand's total border trade, the highest among all neighboring countries. Additionally, Thailand led in transit trade with China, with a total trade value of 341,180.69 million baht (Ministry of Commerce, 2020). Tourism is another crucial driver of Thailand's economy. The UNWTO Tourism Highlights report

in 2019 ranked Thailand as the 7th most visited tourist destination globally, attracting 40 million international tourists, thanks to its renowned attractions (The nation, 2022). Furthermore, Thailand ranked 4th in tourism revenue and experienced a 3% growth in the tourism sector. Data from the Ministry of Tourism and Sports in 2019 also indicated that Chinese tourists formed the largest group of visitors to Thailand, making up 28% of total international arrivals (Tourism Council of Thailand, 2023). With adequate preparation, Thailand could capitalize on the opportunities presented by the China-Laos high-speed railway in various sectors (Punyaratabandhu & Swaspitchayaskun, 2018). In trade, Thailand could boost its exports, as Thai products are known for their quality, while China's strong purchasing power presents a favorable market. High-speed rail transportation could also significantly reduce both transit time and shipping costs (Vickerman, 2018). In the service and tourism sectors, the railway is expected to facilitate easier travel for Chinese and Laotian tourists to Thailand. Moreover, foreign investment could also see a positive impact. China has increasingly relocated production bases to Thailand, a trend that, if sustained, could create more employment opportunities and reduce income inequality by spreading investments across various regions in the country (Bank of Thailand, 2021).

Based on the sources and their significance, this study will consider both the current perspectives arising from the existing inequalities in Thailand across all dimensions and the perceived benefits of the BRI policy. This approach will enable Thailand to better prepare for and respond to future changes more effectively, ultimately contributing to a more equitable society. Furthermore, the key findings from this study can assist stakeholders involved in the country's development and agencies related to the railway transport system. They can apply the resulting policies to create new strategies and plans to improve access to the railway transport system for the Thai population, enhancing the effectiveness of the country's development and maximizing benefits for Thailand's future growth.

1.2 Purposes of the Research

1) To develop a model for analyzing accessibility to railway stations in Thailand by applying Geographic Information Systems (GIS).

2) To develop a model for measuring the factors influencing inequality in access to intercity railway transport systems in Thailand by applying Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA).

3) To develop a model of the relationship between factors affecting the BRI policy, including the perception of benefits and the intention to use the China-Laos high-speed railway service in Thailand by applying Structural Equation Modeling (SEM).

1.3 Scopes of the Research

The study area is Thailand, covering four regions: The North, Northeast, East, and South, along the current railway routes. For the first objective, the study area will focus on a case study in Nakhon Ratchasima Province to examine spatial inequality. For the second objective, the study area will consider 33 railway stations across all regions of Thailand in order to explore the factors influencing inequality based on the perspectives of railway users. For the third objective, the study will examine 7 border checkpoints along the Thailand–Lao PDR border, located along the route of the China–Laos high-speed railway, to investigate the factors influencing Thai people's perception of the benefits of the China–Laos high-speed railway. Moreover, For the scope of data in this research, both primary and secondary data will be utilized, with the following details:

1) Primary data

- Data from questionnaire on Factors Influencing Inequality in Access to Railways in Thailand (COA No. 100/2565)

- Data from questionnaire on Factors Affecting Attitudes Toward the Perceived Benefits of the Belt and Road Initiative (BRI) Policy Among People in Thailand (COE No. 7/2567)

2) Secondary data

- Statistical data on the number of passengers traveling from both the origin and destination stations in Nakhon Ratchasima Province from 2012 to 2022, under State Railway of Thailand.

- Data on freight transport volume in Nakhon Ratchasima Province from 2012 to 2022, under State Railway of Thailand.

- Data on the frequency of railway services at the train stations in Nakhon Ratchasima Province, obtained from each station within the province.

- Data on the National Railway Development Plan and Regional Railway Development Plan, sourced from Thailand's 20-Year Transport System Development Strategy (2018-2038), under Ministry of Transport.

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1.4 Research Questions

This research has the following research questions:

1) The distribution of railway stations contributes to spatial inequality in access to railway services.

2) What factors can be used to measure the disparities among users of the intercity railway transport system.

3) What factors can be used to measure people's perceived benefits of the BRI policy.

4) What factors influence the relationship between the perceived benefits of the BRI policy and the intention to use the China-Laos high-speed railway

1.5 Contributions of the Research

The contributions of this research are as follows:

1) The presented results identify can help understand the spatial inequality situation in accessing railway stations in Thailand.

2) The presented results identify factors that measure disparities in access to the intercity railway transport system in Thailand.

3) The presented results identify factors influencing the Belt and Road Initiative (BRI), including perceptions of its benefits and the intention to use the China-Laos high-speed railway among the Thai population.

4) The research findings provide policy recommendations on how to reduce disparities among the population in Thailand.

5) The research findings provide policy recommendations on how to develop Thailand in alignment with the Belt and Road Initiative (BRI).

1.6 Organization of the Research

This research is consisting of 5 main chapters as follows:

Chapter 1: Introduction section includes the rationale and the importance of the research, purpose of the research, scope of the research, research questions, and contributions of the research.

Chapter 2: Assessment of Disparity in Accessing Railway Stations in Thailand: an Application Geographic Information System Network Analysis.

Chapter 3: Measurement Model for Determining the Disparity Factors of Intercity Railway Transportation.

Chapter 4: A Structural Equation Model of the Factors Affecting the Belt and Road Initiative (BRI) on the Perceived Benefits and Intention of Thai People to Use the China-Laos High-Speed Rail Service.

Chapter 5: Conclusion and recommendations. This section concludes the results from sections 2 – 4, and practical application of the research.

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