Lessons Learned of the Success of the Khon Kaen Smart City Model to Enhance Surat Thani Province into a Sustainable Smart City Development

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ABSTRACT

The objectives of this research were: 1) To analyze the current Smart City potential of Surat Thani Province. 2) Lessons learned from the success factors of the Khon Kaen Smart City. And 3) To propose a model for sustainable development to elevate Surat Thani Province into a Smart City. This research employs a Mixed Methods Research approach, combining quantitative research through surveys with a sample of 400 respondents from Surat Thani and 400 from Khon Kaen, utilizing descriptive statistics including frequency distribution, percentages, mean, and standard deviation. Factor analysis and structural equation modeling are applied for quantitative data analysis. Additionally, qualitative research is conducted through in-depth interviews with a purposively selected sample of 9 key informants.

The research results showed that 1) the potential of Smart City in Surat Thani today. There is a moderate picture included. Smart Living is the most valuable, followed by Smart Environment, Smart People, Smart Economy, Smart Governance, Smart Energy, and Smart Mobility respectively. 2) Take off the lessons, factors for the success of Khon Kaen Smart City found that the factors that led to the success of Khon Kaen Smart City include groups of Local private leaders, adding local roles, thinking processes, Government processes, and funding The results of the model's consistency examination with empirical data When adjusting the model, it was found that the model was consistent with empirical data. 3) The potential development model to upgrade Surat Thani to be a sustainable development Smart City. The result of mixing integrated research methods into the RBCLS Model contributes to the development of the potential to upgrade Surat Thani to a sustainable development Smart City.

Keywords: *Surat Thani Smart City; Urbanization; Lessons Learned; Sustainable Development*

INTRODUCTION

The city is not just a significant habitat for humans, but it is also a collective hub where people engage in various activities related to economics, politics, governance, professions, and social interactions. Social changes and prosperity have led human societies to exhibit increasingly urban characteristics, resulting in a trend of population migration from rural areas to capital and major cities. This phenomenon, as observed by the (Population and Society Research Institute at Mahidol University, n.d.) arises from economic inequality and disparities in accessing various services between urban and rural areas. Consequently, populations migrate in search of better opportunities in life. However, this migration comes with its share of negative consequences, including insufficient housing,

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overcrowding, air pollution, and social issues such as class divisions and the creation of pressure on existing infrastructure. The impact of these challenges has prompted comprehensive preparations for urban development, addressing various aspects to effectively manage and cope with the situation.

For Thailand, there is a development plan that aligns with the era of Thailand 4.0, with a focus on the development of infrastructure and innovation to bring about transformative changes in both economic and social aspects. This particularly involves the concept of a Smart City, which is a key objective of Thailand 4.0. The aim is to advance urbanization to keep pace with technological advancements, specifically by integrating technology for urban development. This approach includes strategies at the national level and various development plans to support and promote the use of technology as a driving force for the modern economy and society. It seeks to create capabilities to compete globally, fostering the development of smart cities to ensure Thailand's stability, prosperity, and sustainability in the future. (Damrongsak Jantotai, 2019). The development and management of cities have become increasingly complex, requiring more data-driven decision-making as populations grow and cities expand. Therefore, urban governance and development in the form of a Smart City are centered around adopting IT systems to assist in city management and development. This enables the quick and timely collection of data related to spatial aspects, demographics, and the utilization of various resources. Moreover, IT systems are employed to manage the infrastructure of the city and various public services efficiently. This is aimed at enhancing the accessibility of services for the public and improving the overall efficiency of city management. (Ekachai Sumalee, 2015). Additionally, driving the development of economic and digital social policies, with a focus on smart cities, is essential for creating opportunities and mechanisms to enhance economic growth at the regional level (Nipapan Jensantikul, 2020). The use of information and communication technology (ICT) is integral in propelling various processes and activities across both economic and social domains. This includes the governance of public affairs, education, public health, trade, business, and service sectors. The integration of ICT plays a key role in promoting development and improving the quality of life in all aspects (Chaiwat Phuakkhong and Kanjana Phuakkhong, 2022). Furthermore, leveraging modern and intelligent technology and innovation is employed to develop the urban environment, making it more livable, secure, and environmentally friendly. It can be asserted that a Smart City utilizes technology to facilitate efficient urban management and enhance public service delivery to the local population, thereby elevating the quality of life for residents in the area (Akarawin Sasanapitak, 2022).

Smart City development should be integrated with the economic and social conditions of the local context, considering the geographical and physical characteristics of the city. It aims to maintain the advantages and mitigate the disadvantages of the city, recognizing that being a Smart City does not necessarily mean embracing all technologies. If a city adopts too much technology and innovation, it may conflict with the traditional lifestyle of its residents. Therefore, an ideal Smart City should be adaptable to new environments, situations, and conditions, utilizing methods and technologies that align with the existing way of life and are environmentally friendly non-Arkaraprasertkul, 2022). Currently, the concept of Smart City is gaining increasing attention as a development strategy for cities, especially in various countries like Singapore, which has been recognized globally for its use of digital technology and for improving people's well-being (International Institute for Management Development, 2021). This involves aspects such as public health, safety, transportation, opportunities, and governance, utilizing digital technology in employment and community service development. The Internet of Things (IoT) is also employed through various projects and activities. For Thailand, driving Smart City development is a significant roadmap to distribute opportunities and prosperity, aiming to become an Innovation Hub that elevates the regional economy and society. Particularly, Khon Kaen province stands out as a province aligning with national development goals, focusing on significant urban development, and leading the way in Smart City development. It emphasizes genuine urban development with a unique approach, pushing for city development without changing existing regulations, and understanding the complexity and time required for such changes. This approach allows the private sector in the province to play a more significant role in local development with support from local authorities (Phattharaporn Hirunwong and Team, 2020). The collaborative and integrative efforts and other supporting factors drive Khon Kaen Smart City policy towards clear and practical implementation.

Surat Thani province, the primary hub of immense potential covering all dimensions, has been rapidly developing to emerge as a central focal point in various aspects of the southern region. Ranking as the sixth-largest province in the country, it boasts the largest area in a region abundant with natural resources and diverse environments.

Additionally, its strategic location in the middle of the region serves as a crucial focal point connecting the Gulf of Thailand to the east and the Andaman Sea to the west. Surat Thani has well-established infrastructure and convenient amenities, facilitating its role as a central hub for transportation and logistics, connecting to other provinces in the region. Furthermore, the province has experienced significant economic growth, ranking among the top contributors to the national income (Agenda, 2021). The province is globally renowned for its tourist attractions, including Koh Samui, Koh Phangan's Fullmoon Party, Koh Tao, and the city's conducive environment for living, education, commerce, accommodation, and entertainment. This attractiveness has led to an influx of people relocating and a rise in foreign and migrant labour each year. Consequently, the urban area of Surat Thani has expanded rapidly, particularly along transportation routes and neighbouring districts. The city has densified notably in the municipal area, and projections for 2026 anticipate continuous expansion, reaching into nearby communities and adjacent districts (Chalita Thoeisiri, 2017).

The expansion of Surat Thani City has started to impact the surrounding areas, leading to challenges in mass transportation, traffic congestion, pollution, flooding, and difficulties in accessing public services and utilities. These changes in the urban society have given rise to various issues that affect all aspects, prompting governmental, private, and other organizations in Surat Thani province to recognize the importance of addressing these problems. To tackle these challenges, discussions and consultations have been conducted to gather insights and formulate solutions. One proposed solution involves the adoption of Smart City concepts to manage the city effectively. In this regard, the Surat Thani Provincial Development Company has been established to contribute to the province's development. Collaborations with the Digital Economy Promotion Agency (DEPA) aim to propel Surat Thani towards becoming a Smart City, utilizing technology and innovation for urban development. However, the implementation of Surat Thani Smart City is currently lacking clear policies and well-defined development plans. Key areas such as suitable development models, efficient City Data Platforms (CDP) management, infrastructure investment planning, and budget allocations are yet to be determined. Efforts are underway to align Surat Thani's development with the national framework and various developmental plans. Strategic collaboration involving government agencies, local authorities, private sectors, businesses, and residents is crucial to meet the needs of the people. Furthermore, the development of Surat Thani as a Smart City should adhere to national strategies and various development plans, elevating the province to a Smart City in the future.

Therefore, the researchers conducted a study to analyze the Smart City potential of Surat Thani province at present. In doing so, they also recognized the importance of the Smart City model in Khon Kaen and aimed to extract lessons for the success of Khon Kaen Smart City. This served as a blueprint for developing Smart City initiatives in Surat Thani province. The rationale behind this approach lies in the similarities between Surat Thani and Khon Kaen in terms of physical characteristics, societal context, such as the size of the area, a population of over one million, economic size, income, as well as the convenience of infrastructure, transportation, and urbanization. Subsequently, the researchers proposed a development model to enhance the Smart City potential of Surat Thani, fostering sustainable growth and balanced development. This involves creating a harmonious relationship between social, economic, and environmental dimensions, along with values related to freedom and equality. The ultimate goal is to cultivate a society that coexists happily and equitably.

Research Objectives

1. To analyze the current Smart City potential of Surat Thani province.

2. To extract lessons from the success factors of Khon Kaen Smart City.

3. To propose a development model for elevating Surat Thani province to a sustainable Smart City.

LITERATURE REVIEW

Thailand 4.0 is a political concept or strategy proposed by the Thai government to foster sustainable economic development in an era where technology and innovation play crucial roles. The emphasis is on developing Smart

Cities that align with the Thailand 4.0 policy, aiming to transform both economic and social aspects by innovatively enhancing infrastructure.

The concept of Smart City involves intelligent development and planning in the context of a world undergoing climate change and limited resources. It focuses on developing cities using information and communication technology in conjunction with the physical infrastructure of the city efficiently and tailored to the economic, social, and cultural aspects. The goal is to create positive changes that lead to improved quality of life for urban residents, with a strong emphasis on citizen participation for adaptive learning and response to changing circumstances.

The concept of potential refers to the potential at both individual and organizational levels. It can be manifested through various activities and not only visibly demonstrated but also embedded and developed within an individual. This ability can significantly contribute to positive outcomes in various aspects, including knowledge, skills, critical thinking, and beliefs. Additionally, there are factors influencing potential, such as educational qualifications, mental abilities, motivation, values, and social integration.

The concept of success factors is crucial for application and support in organizational operations, involving systematic planning, responsibility, and collaboration with others. This includes tracking and evaluating performance to achieve the organization's vision and goals effectively.

The idea of extracting lessons is a vital process in development and improvement, allowing for the examination and review of experiences. It involves isolating and drawing important knowledge from past experiences to share with others involved, fostering knowledge and understanding, and providing opportunities for relevant individuals to express opinions, suggestions, and perspectives beneficial for the future.

The concept of sustainable development is a goal set by the United Nations with 17 sub-goals, known as the Sustainable Development Goals (SDGs). The aim is for countries, including Thailand, to work collaboratively to achieve sustainable social, economic, and environmental development by 2030.

Sopita chaiyakam and supawatanakorn wongthanavasu, (2022). stated that the characteristics of individuals that contribute to smart citizenship must involve participation in decision-making and actions for the benefit of the city or society. Involvement enables individuals to support and be involved in the development and life of the city. Additionally, citizens' knowledge regarding various aspects of the city or society, such as local and global history, political concepts, and current events impacting the city, is crucial. This includes accepting diversity, understanding and respecting cultural, religious, and diverse perspectives, as well as acknowledging and embracing differences. Acceptance of diversity helps create a social environment conducive to building a sustainable smart city. Furthermore, creative thinking is required to aid in considering and innovating solutions to complex problems, contributing to urban and societal development. Individuals need to possess the ability to learn new things, eagerness to acquire knowledge, and readiness to adapt to changes to cope with the various developments in society and technology. Additionally, citizens should be able to contribute to creating metrics and assessing the characteristics of a smart city, such as in areas of learning and adaptability, technological knowledge, creativity, health, benefits from smart city development, democracy, and the education system. Citizen participation is a significant factor in sustainable urban development.

RESEARCH METHODOLOGY

The research study employs a mixed methods research approach, combining both quantitative and qualitative research methods. The quantitative research involves the use of questionnaires as the primary data collection tool. Data is collected from a sample group within the municipality of Surat Thani, specifically in the Mueang district, totaling 400 individuals. Additionally, data is collected from a sample population within five municipalities in the Mueang district of Khon Kaen province, with a total of 400 individuals.

In parallel, qualitative research is conducted using in-depth interviews. The in-depth interview method is chosen to collect data from qualified individuals, experts, and scholars knowledgeable about driving Khon Kaen Smart City. One individual is interviewed to confirm the success factors of Khon Kaen Smart City. Furthermore, data is collected from a sample group of political figures involved in planning and policy-making for Smart Cities, private sector organizations, and individuals who are stakeholders in the development of Smart Cities. The sample comprises nine experts and scholars with expertise in Smart City. The purpose is to propose a development model to enhance the potential for upgrading Surat Thani province to a sustainable Smart City.

Research procedures 1) Analyze, and study principles, concepts, theories, and research related to the Smart City of Surat Thani Province And Khon Kaen Province 2) Create and develop tools to study the development of the potential to upgrade Surat Thani to Smart City 3) Collect data 4) Data analysis 5) Research findings Discuss the results and provide research recommendations. These research statistics include content analysis (Content Analysis), mean values (Mean), standard deviation (Standard Deviation), Confirmatory Analysis (CFA), Factor Extraction, and Structure Equation Model Analysis (Structural Equation Model: SEM) to get a form of capacity development to upgrade the province Surat Thani to be a sustainable Smart City.

RESULTS

1. Results of Data Analysis According to Research Objectives.

1.1 General Information of Survey Respondents.

General Information of Survey Respondents in Surat Thani Municipality, Mueang District, Surat Thani Province: A total of 400 respondents participated in the survey. In this round of data collection, it was observed that much of the sample was female, comprising 212 individuals, accounting for 53.0%. This percentage was higher than that of males. The age distribution of the respondents ranged from 20 to 30 years old, with 103 individuals, making up 25.8% of the total. Regarding the educational level, a significant portion of the respondents had completed a bachelor's degree or its equivalent, totaling 153 individuals or 38.3%. In terms of occupation, many of the respondents in Surat Thani Municipality, Mueang District, Surat Thani Province, were engaged in personal business or trade, with 114 individuals, constituting 28.4%. The average monthly income for most respondents fell within the range of 10,001 to 20,000 Baht, with 149 individuals, representing 37.3%.

1.2 The Current Analysis of the Smart City Potential in Surat Thani Province.

The results of the analysis show that Smart City potential in each dimension of Surat Thani province today There is a whole picture at a moderate level. With a total average () of 3.49, both when considered on a case-by-case basis The study found that at a high level 3 Consists of intelligent living. Smart Living has an average () equal to 3.91 environmental genius. Smart Environment has an average () of 3.74 and intelligent citizens. Smart People have an average () equal to 3.69 These are at a moderate level in 4 areas: intelligent economy. Smart Economy has an average () of 3.45 in intelligent government management. Smart Governance has an average () of 3.43 in intelligent energy. Smart Energy has an average () is 3.24, and finally, the intelligent connection Smart Mobility has an average () of 2.93.

1.3 Suggestions for Developing the Smart City Potential of Surat Thani Province.

From the qualitative analysis of open-ended questionnaire data, the findings indicate that there is still a lack of knowledge and understanding among the public regarding Smart City concepts for collaborative urban development. Relevant agencies should strive to enhance public awareness and engagement in various projects. Leaders or administrators involved in Smart City development need to be creative thinkers capable of applying information technology to develop city infrastructure appropriately and beneficially for the public. City management should be systematic, and transparent, and include the development of personnel through training and skill enhancement.

To effectively serve the public using technology, there is a need for government officials to have a good understanding of and ability to utilize technology. This should lead to improved internet access and technology availability, fostering learning, communication, and more sustainable employment opportunities throughout the region.

Furthermore, to address the current stress-related issues faced by the population, the government, whether at the national or local level, should collaborate to address and resolve local problems to ensure they do not adversely affect citizens. Additionally, expanding or establishing state-owned hospitals and clinics to provide comprehensive and equal healthcare services is crucial.

Recommendations for developing basic public infrastructure systems, such as waste management, water and electricity management, and efficient transportation systems, should be considered. Implementing an interconnected and efficient transportation system would reduce traffic issues and enhance commuting convenience. The government should also encourage the development of educational institutions in the area to enhance public knowledge and capabilities.

Lastly, ensuring the safety and security of citizens and their property using technology for monitoring and maintaining security is crucial. This includes not only the development of a secure living environment but also a focus on utilizing technology to track and ensure the safety of citizens and their belongings.

1.4 The Analysis Results: Extracting Lessons Learned Factors Toward the Success of Khon Kaen Smart City.

Khon Kaen Smart City emphasizes a policy that focuses on collaboration between local authorities and the private sector to develop the city according to the needs of the residents. This approach aims to efficiently drive city development and address societal, economic, and environmental challenges, creating sustainable balance within Khon Kaen. The city actively mobilizes funds and provides opportunities for local participation, which is crucial for the successful implementation of initiatives. For instance, the establishment of the Khon Kaen City Development Company Limited (KKTT) plays a significant role in developing the province's infrastructure and designing policies to guide urban development. This collaborative model involves both the public and private sectors. Additionally, the formation of Khon Kaen Transit System Company Limited (KKTS), a joint effort by five municipalities in the Khon Kaen city area, exemplifies a collaborative approach to spearheading the Smart City project. This includes the construction of mass transit systems and the development of urban infrastructure.

From the analysis of exploratory factor analysis, variable grouping, and naming of variable groups, it was found that there are a total of 20 factors (Q1 - 20Q) that drive the success of Khon Kaen Smart City. The suitability of the component analysis was verified through statistical testing using the Kaiser-Meyer-Olkin (KMO) measure, yielding a KMO value of 0.812, indicating the adequacy of the sample group used for the component analysis in this instance. Furthermore, the Bartlett's Test statistic was statistically significant at the 0.00 level, signifying that the correlation matrix is not an identity matrix. This indicates that the variables are interrelated and suitable for further analysis. After creating components with appropriate weights, 20 variables were selected for the initial exploratory factor analysis. The analysis yielded five components, namely Local Private Sector Leadership, Local Role Enhancement, Thinking Processes, Government Processes, and Fund Mobilization. Upon conducting confirmatory factor analysis on the success factors of Khon Kaen Smart City, it was found that the model aligns well with perceptual data, as evidenced by statistically significant values such as the Kaiser-Square statistic. The fit indices include a statistically significant Goodness of Fit Index (GFI = 0.99), an Adjusted Goodness of Fit Index (AGFI = 1.00), and a Root Mean Square Residual (RMR = 0.011). Additionally, the Root Mean Square Error of Approximation (RMSEA) was found to be 0.000. Overall, the model demonstrates a good fit with the perceptual data.

The results from the analysis of extracting lessons learned factors contributing to the success of Khon Kaen Smart City have been used as a model or a development guideline for transforming Surat Thani province into a Smart City. The identified success factors for Khon Kaen Smart City include the private sector leadership, enhancing the local role, thinking processes, government processes, and fund mobilization. These factors operate in a non-political

manner, fostering independence of thought and a common goal. They operate collaboratively, leveraging the triangle theory of pushing the mountain, aimed at enhancing efficiency in working towards a shared objective. Additionally, the use of the triangle theory has helped improve effectiveness by fostering collective learning among the people of Khon Kaen from all sectors. The key factors leading to success are characterized by inclusive cooperation from non-governmental organizations (NGOs), businesspeople, citizens, educational institutions, and various media outlets within the province. The collaboration between local private sector leaders and the government in urban development, supporting local transformation processes, and fostering learning and open-mindedness have resulted in a more livable society, driven by a grassroots transformational process that involves collective thinking and collaboration among the people of Khon Kaen.

1.5 The results of the analysis propose a development model to enhance the potential for elevating Surat Thani province into a sustainable Smart City. In summary, the findings are as follows.

To enhance the potential for elevating Surat Thani province into a sustainable Smart City, an assessment of the city's readiness is crucial. This involves presenting an action plan to improve the efficiency of city management and service delivery systems. Additionally, collaborative urban development should consider the readiness of the population, as well as assess the city's readiness, personnel readiness, and budget readiness. Gathering necessary data related to user behavior for processing is essential for decision-making in strategic planning for holistic development.
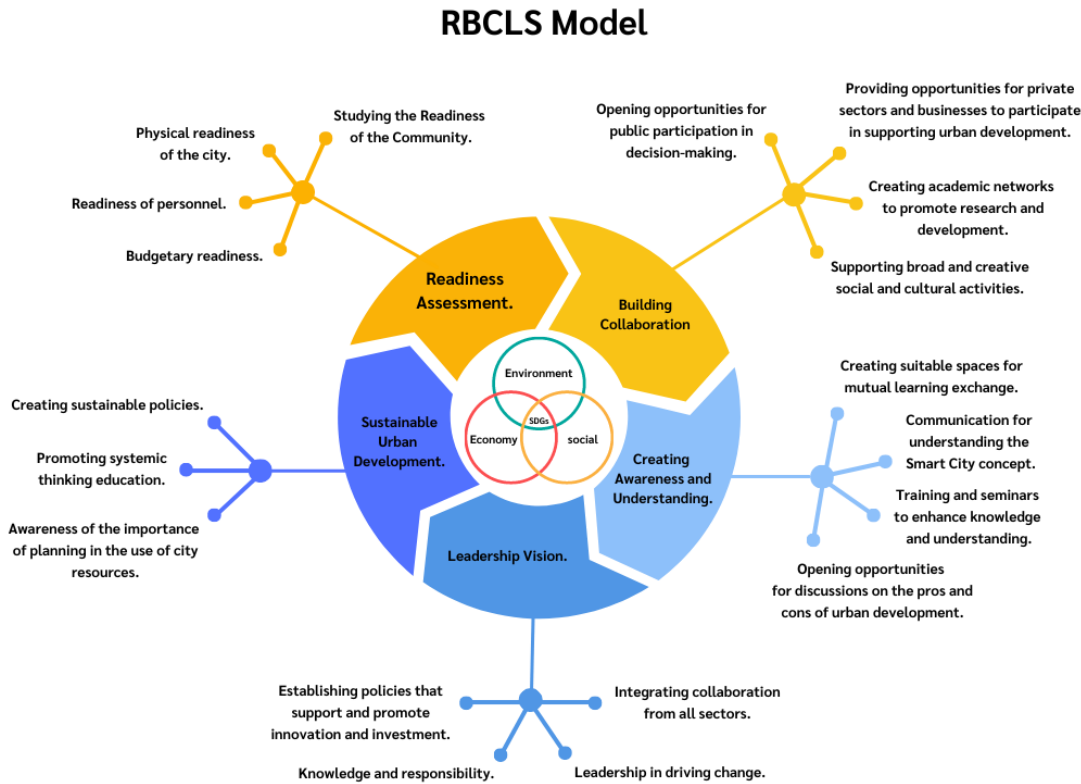
Moreover, the development towards making Surat Thani a Smart City requires the creation of collaborative working spaces between the public and private sectors, academic networks, local government organizations, and various institutions. This collaboration facilitates the exchange, sharing, and mobilization of ideas to develop potential in various dimensions. Creating a conducive environment for inclusive participation and cooperation in the learning process, including sharing experiences and knowledge, is essential for fostering an understanding of Smart City development concepts.

In the dimension of urban development, having visionary leadership is crucial for steering the city towards becoming a Smart City. Leaders should define a clear vision to formulate policies and guidelines for development. They should act as a driving force to mobilize resources and push for efficient implementation. In addition, leaders must be open to feedback and suggestions from the public, considering the diverse needs of the community to contribute to the development of a Smart City.

Furthermore, the sustainable development of Surat Thani into a Smart City should commence with the development of the community's potential, including citizens, youth, and personnel within organizations. This involves establishing a foundation for building awareness, fostering collaboration, and encouraging shared responsibility in the role of citizens in shaping the development agenda towards a Smart City. Concurrently, there is a need for advancements in communication, technology, and the internet, leading to innovative platforms that facilitate convenient professional development for the community.

1.6 The results from the Mixed Methods Research.

The results of integrating quantitative and qualitative research methods, researchers synthesized content related to the sustainable development of Surat Thani Province into a Smart City. A new knowledge framework emerged known as the RBCLS Model comprises five key components (1. R = Readiness Assessment) (2. B = Building Collaboration) (3. C = Creating Awareness and Understanding) (4. L = Leadership Vision) (5. S = Sustainable Urban Development). Additionally, these five components must work together as a mechanism to form a sustainable development model for elevating Surat Thani Province into a Smart City, as illustrated in Figure 1.

Picture 1: RBCLS Model, a form of capacity development to upgrade Surat Thani to a sustainable development Smart City.

From the RBCLS Model, a form of capacity development to upgrade Surat Thani to a sustainable development Smart City. This can be explained as follows;

1. Readiness Assessment.

1.1 Studying the Readiness of the Community; The readiness of the population is the foremost concern when embarking on the journey to become a Smart City. It is crucial to understand the level of needs and satisfaction of the citizens, encompassing their comprehension, interest, and readiness to adapt to citizen technology appropriately.

1.2 Physical readiness of the city; Conducting surveys and evaluating the readiness of infrastructure are vital steps in examining the feasibility of operations. Choosing a suitable city location that is free from natural disaster risks, such as flooding, landslides, and earthquakes, is essential. Moreover, optimizing land use based on the lifestyle of the population ensures the city's readiness to embrace sustainable development.

1.3 Readiness of personnel; Personnel must possess relevant knowledge and skills, such as urban planning, land management, infrastructure development, or technological expertise. Urban development may encounter various challenges and issues, necessitating personnel to collaborate, analyze problems, and communicate effectively while taking responsibility for their assigned tasks.

1.4 Budgetary readiness; Effective budget management is a pivotal aspect of developing a Smart City. Driving development requires clear budgets and funding sources to ensure that projects and related policies can be fully and sustainably implemented. Budget management should include mechanisms with individuals responsible for controlling investment plans and budgets, aiding in monitoring progress reports, and considering budget-related risks in managing other resources or infrastructure improvements for greater efficiency.

2. Building Collaboration.

2.1 Opening opportunities for public participation in decision-making; Providing opportunities for public participation in decision-making leads to the formulation of policies and projects that respond to the needs and satisfaction of the public. Involvement in urban development fosters confidence and transparency in governance systems, including monitoring the results of operations and policies leading to continuous improvements, adjustments, and the efficient development of the city.

2.2 Providing opportunities for private sectors and businesses to participate in supporting urban development; Creating opportunities for private enterprises to participate in supporting urban development towards becoming a Smart City is crucial. This stimulates the development of new technologies and innovations for societal progress. Additionally, the private sector's stability in resource and business management, such as natural resource management, human resources, or financial resources, enables rapid and efficient city growth. This collaboration can reduce the government's budget burden, resulting in sustainable economic and social growth for the Smart City.

2.3 Creating academic networks to promote research and development; Establishing academic networks to promote research and development can enhance innovation in urban development. Academic networks can study clear and appropriate indicators for measuring and evaluating outcomes and assessments over specified time frames. This knowledge contributes to formulating clear and transparent strategies, instilling trust, and accepting defined directions. However, relevant stakeholders should allocate sufficient and appropriate budgets for efficient implementation throughout the Smart City research and development period.

2.4 Supporting broad and creative social and cultural activities; Encouraging diverse and creative social and cultural activities stimulates inclusive participation from various groups. Granting everyone the right to participate in learning exchanges and decision-making that influences society supports and creates activities that bridge diverse groups through social networks, leading to the development of inclusive policies.

3. Creating Awareness and Understanding.

3.1 Communication for understanding the Smart City concept; For the general public to understand and participate, there should be communication, public relations, creating presentations, press releases or exhibitions. To disseminate information and stimulate interest, as well as having skilled personnel to help communicate using media such as images, videos, charts, and maps to help explain the Smart City concept through a variety of communication channels, including social media, meetings, and presentations to reach various target groups in society, to gain more understanding, examples of projects that are examples of concepts Smart City has been successful. In addition, practical information should be if shows the impact on people's daily lives and knows the benefits people will receive

3.2 Training and seminars to enhance knowledge and understanding; Training and seminars can help create a space for promoting participation and collaboration in the learning process. Including the sharing of experiences and knowledge between all sectors, which is important to be able to create the same understanding of vision and goals. Make collaborations to solve problems and Work in the same direction In addition, it helps to increase new knowledge and skills that are consistent with change, leading to continuous urban development

3.3 Opening opportunities for discussions on the pros and cons of urban development; From developing the city to a Smart City, talking about stakeholders is rich for everyone to understand and recognize processes that have an

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impact on both the advantages and disadvantages that may result in the connection that causes social conflicts, therefore There should be discussions, opinions and exchanges of ideas, creating a better understanding of development for the common good.

3.4 Creating suitable spaces for mutual learning exchange; Creating a community that supports and promotes dialogue about the processes that lead to connectivity and cooperation in urban development. By providing opportunities and granting rights to all groups All ages have shared experiences and opinions that can respond to people's needs and satisfaction through activities. And various projects, including creating campaigns to promote creative urban development.

4. Leadership Vision.

4.1 Establishing policies that support and promote innovation and investment; creating policies that support private and government investment, is an important part of Smart City development, including technology investment rights. Funding and the reduction of legal regulations lead to effective investment.

4.2 Integrating collaboration from all sectors; coordinating negotiations, discussing, clarifying, and communicating the benefits that all sectors will receive from cooperation and urban development, as well as creating an understanding of the vision and goals of urban development together between all sectors. And get involved in the process Develop cities by presenting ideas, information, and work plans for more understanding for all parties.

4.3 Leadership in driving change; able to adapt to social trends and understand the changes that are occurring in society, as well as the ability to create new initiatives for society, dare to think, dare to make decisions, and overcome the limits through changes leading to success.

4.4 Knowledge and responsibility; Leaders should develop and demonstrate operational capabilities and lead the organization to success. Including recognizing the importance of developing the skills needed in their roles Lifelong learning Education for new knowledge and responsibility for oneself and others to work together creatively.

5. Sustainable Urban Development.

5.1 Creating sustainable policies; It is necessary to listen to opinions and suggestions from the public. In addition, the creation of policies should analyze the current situation of the city and determine the objectives and goals for implementation, driving comprehensive development in the economy. Society and environment. Creating policies that support the sustainability of the city should provide important to create a friendly and appropriate environment for the people of the city, such as creating green spaces. Creating a park Reducing waste Promotion of renewable energy use and the development of effective public transportation systems, etc

5.2 Promoting systemic thinking education; By promoting learning about the relationships and connections between the economy, society, and the environment so that there are no unexpected effects in various areas and including the development of data analysis skills to solve complex problems of the situation. The city.

5.3 Awareness of the importance of planning in the use of city resources; Understanding and learning about local identities should be understood to generate income and economic security in urban areas, as well as developing physical areas by planning urban areas with full utilization to help. The city will grow balanced and sustainable in the future.

DISCUSS THE RESULTS.

Based on the research study on extracting lessons from the success of Khon Kaen Smart City towards elevating Surat Thani Province to a sustainable Smart City, the results can be discussed as follows:

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Surat Thani Province has competitive potential in various aspects, attributed to its centrally located position in the region and a well-established infrastructure that facilitates investment. These factors play a crucial role in making Surat Thani Province a significant contributor to Thailand's economy and trade. Additionally, the diverse tourist attractions and services make the province a key destination for global tourists. The physical readiness of the city is evident through comprehensive infrastructure, including airports, road networks, energy supply, and a conducive urban environment, fostering growth. The province also promotes the learning and education of its residents. However, Surat Thani Province faces limitations in the use of renewable energy. Promoting continuous learning and education to enhance technological knowledge and innovation capabilities for collaborative efforts between the public and private sectors is imperative. This involves raising awareness of environmental conservation, a crucial element for the sustainable growth and development of Surat Thani Province in the future.

Learning from the success of Khon Kaen Smart City in driving sustainable development, can serve as a model or guideline for the development of Surat Thani Province into a Smart City. Khon Kaen Smart City focuses on addressing social, economic, and environmental issues to efficiently develop the city and create a sustainable balance within Khon Kaen. The collaboration between the public and private sectors, with Khon Kaen City Development Company (KKTT) as an example, plays a crucial role in developing the province's infrastructure and providing consultation for city development policies. Additionally, it plays a role in fundraising and creating opportunities for local participation in activities that promote economic and social development, resulting in tangible outcomes in the Khon Kaen region. This fosters a shared vision, community engagement, positive attitudes, and economic attraction, leading to an appealing environment and leaving a lasting impression on visitors.

However, the operation of Khon Kaen Smart City faces challenges in the governmental system, such as regulations and laws related to Smart City development. Overcoming these challenges involves understanding the differences and appropriate solutions between the provincial contexts of Khon Kaen and Surat Thani. For instance, facing authority and benefits, building understanding, and collaborating with the public in Smart City development can help reduce obstacles arising from disagreements. Working with the private sector to alleviate regulatory constraints and adjusting laws or policies that do not align with existing laws is essential for the project to proceed as planned. This aligns with the research conducted by Alisa Vishnivetskaya and Elena Alexandrova (2019). on the concept of Smart City and its application in Russia, highlighting challenges and strategies used to develop the Smart City concept by improving regulations related to technology use and organizational systems. This improvement is achieved through collaboration with the private sector to secure funding for supporting and managing government-led technological and innovative development, ultimately contributing to the efficient and sustainable quality of life in the city.

In driving the successful development of Khon Kaen Smart City, several factors have been identified, including private sector leadership, enhanced local roles, thought processes, government procedures, and fundraising. Moreover, the success-related factors of Khon Kaen Smart City, such as private sector leadership, fundraising, and thought processes, can be exchanged, and mutually learned to contribute to the development of a Smart City within Surat Thani Province. This involves having visionary leadership with a clear vision for urban development, fostering a public spirit and love for one's hometown, and establishing collaborative funds to form companies that drive transformative development in the community. This collaborative effort aims to advance and modernize the city. Nevertheless, a crucial aspect involves everyone within Surat Thani Province coming together to foster understanding and make joint decisions in determining the development direction that leads to societal, economic, and environmental changes for the province's future.

However, to elevate the development potential of Surat Thani Province into a Smart City with sustainable development, it is necessary to assess the readiness of Surat Thani Province, a crucial component of the Smart City development plan. This assessment should begin by studying the feasibility of operations by evaluating potential and readiness conditions. The Digital Economy Promotion Agenda (2021). suggests that city readiness assessment should cover seven aspects of smart city development, such as citizens, economy, public administration, quality of life, transportation, energy, and infrastructure. Additionally, it includes aspects like communication networks, technology, and the internet. Collecting essential data about people's data usage behaviors and managing city data lead to analysis and data compilation. Subsequently, applying Smart City concepts and processes in decision-making

for urban development strategies must align with the needs of the population. To achieve tangible results in driving Surat Thani Province towards becoming a Smart City, collaboration and knowledge-sharing among all sectors are essential, including government, private, and public sectors, academic networks that play a vital role in research and development, local government organizations, and various organizations. This aligns with the research of Paporn Rungwicha and Team (2020). Which emphasizes the importance of collaborative efforts and mutual understanding to create and support policies for urban development. However, driving the development of Surat Thani Province into a Smart City requires a considerable amount of time for in-depth study. To ensure the sustained progress of these efforts, it is crucial to establish main units responsible for directly implementing operations in driving Surat Thani Province into a Smart City. Furthermore, Smart City, accompanied by modernity, necessitates knowledge dissemination, understanding creation, and awareness raising regarding the Smart City concept among all relevant sectors. Aligning understanding and behavior change to embrace new ideas that correspond to the research of Charuwan Prawanne (2020). who investigates the transformation process toward Smart City, including the development of the potential of the population, youth, and personnel within the organization. It requires laying the groundwork for cooperation, and fostering awareness of joint responsibilities in the role of citizens to stimulate awareness and understanding of the importance of using technology and innovation to solve existing problems. This will lead to creating a collective spirit of supporting and mutually participating in city development.

In addition, Surat Thani Province is considered a province with a social context. Including identity that is beautiful in traditions-culture, food and tourist attractions Urban development by applying technology should develop innovations, applications or platforms to add value and public relations to promote the image of Surat Thani Province, now application of such innovative applications or platforms. There should be sustainable development towards long-term urban growth, such as integration, promotion of technology and innovation in modern local businesses in an environmentally friendly and promoting way. Use information technology and innovation to develop effective products and production processes to create quality productivity. Creating learning skills by promoting education in technology and innovation. Including the use of technology in environmental management by creating and using applications or platforms that help manage waste track Air quality, maintain green space, and integrate with awareness of responsibility and participation in environmental management in Surat Thani to increase efficiency. However, the application of that technology is consistent with non-Arkaraprasertkul (2022). There should be consideration of further modifications to the existing urban infrastructure to be livable. Modern, with appropriate technology applications Including consideration of suitability related to the way of life of people in the area directly and must be conducive to living More daily.

Another crucial factor for elevating the development potential of Surat Thani province into a Smart City is the role of leadership in urban development. As the hub of various activities that significantly impact the quality of life and have connections to long-term economic and societal sustainability, the city requires visionary and skilled leaders. This aligns with the research conducted by Pahfun Chittmittrapap and Team (2022). On the success factors in developing a Smart City in Phuket province. Leaders must possess a clear vision, effective decision-making skills, and a sense of fairness in shaping city policies and development frameworks. The focus should be on developing the city to support an improved quality of life for its residents. Clear budget allocations and well-defined development plans contribute to the full and efficient implementation of relevant projects and policies. Additionally, leaders should have the ability to mobilize resources and encourage collaboration among all sectors to work towards common goals. However, the ultimate beneficiaries of urban development are the people. In formulating policies and development frameworks, there should be opportunities for public participation in decision-making, including feedback mechanisms. Supporting diverse social and cultural activities fosters creativity and encourages inclusive participation from people of various backgrounds, as highlighted by the research of Sopita Chaiyakam and Supawatanakorn Wongthanavasu (2022). Comparing indicators of being a Smart City. Acceptance of diversity, understanding, and respect for cultural, religious, and ideological differences contribute to creating a socially inclusive environment that can sustainably develop into a Smart City. The wealth of data from diverse groups, including people of different genders and ages, can be a vital resource to drive comprehensive development in various dimensions of Smart City. This approach would lead to sustainable progress and contribute to the city's continuous and comprehensive development.

RESEARCH RECOMMENDATIONS.

1. Recommendations.

The research findings suggest that there should be a policy emphasis on budgeting for investment and infrastructure planning to enhance capabilities in facilitating and promoting the application of information technology. Additionally, there should be collaborative efforts to advocate, amend, and improve regulations and laws. This includes establishing a clear framework for driving development towards strategic planning consistent with the vision and goals of developing a Smart City. Furthermore, there is a need to create awareness, understanding, and the needs or satisfaction perspectives of the public, encompassing all genders, groups, and age ranges regarding the dimensions or goals aimed at developing a Smart City. This involves considering the physical context of the area and the identity of Surat Thani province. Subsequently, these research outcomes can be applied in the integration with information technology to foster the development of a Smart City comprehensively and inclusively.

2. Suggestions for Future Research.

1. There should be research studies on strategies to elevate the development of local government organizations in Surat Thani province towards becoming a Smart City.

2. Comparative research studies should be conducted to explore the development of Smart Cities in Surat Thani province in comparison to other provinces in the region that have successfully implemented and achieved results in their operations.

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