The development of community learning center ‘Bue Ban’ in driving the smart city policy in Khon Kaen, Thailand

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ABSTRACT

This research studied the contextual conditions of Khon Kaen Urban Community for developing the community learning center (CLC) as a part of smart city development. It also aimed to develop ‘Bue Ban’ CLC model based on the public participation and digital advancement. This study was carried out employing the qualitative and operational research method with its tools as an in-depth interview, academic seminar, and fieldwork. The data were obtained from 66 participants, chosen by purposive sampling, and were interpreted by descriptive content analysis. From the study, the models of Bue Ban development and knowledge management, identity, development, publication, utilization or ‘KID-PU’ have been used to develop CLC as a part of smart city development.

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1. INTRODUCTION

The notion of ‘smart city’ is a key topic for policymakers in the 21st century [1]. It is a national development plan of the decade as a result of the globalization and introduction of the internet [2]. This developmental idea has impacted on the urban city development in many dimensions [3], which are widely studied by academic institutions in Europe, North America, and Asia [2], [4], [5].

Recently, many articles on ‘smart city’ have been increasingly published with many cases to study. This leads the notion to become a central and significant issue in many national development plans around the world, including those in Southeast Asia such as Singapore, Brunei, Malaysia and Philippines [2], [6]. In Thailand, the government has promoted the idea of smart city development as a key part of the government’s digital economy adjustment plan [7]. This is a project developed under a public-private collaboration model to accelerate the country’s progress and economic development. The provinces that are considered in the plan to be smart cities including Khon Kaen, Chiang Mai, and Phuket [2], [7]. Later, the plan is to develop the cities across Thailand by focusing on the adaption and development according to economic and social needs [2], [8], [9]. Developing a smart city is not easy as there are many challenges that policymakers or stakeholders are facing. The study of Monzon [10] on the smart city concept has presented the challenges in six dimensions: governance, economy, mobility, environment, people, and living. While, Bawany and Shamsi [11] reported the key challenges in architectural perspectives: information technology (IT) infrastructure, security and privacy, big data management, cost, heterogeneous environment and interoperability, efficiency, availability, and scalability.

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As same as in many countries, developing smart cities in Thailand essentially requires public participation [12]–[15]. Before starting the project, which may have negative impacts on the community environments or lifestyle of local citizens, a public hearing is compulsorily required [16]. This follows the government initiatives mentioned in the 1997 Constitution on a policy of power decentralization which leads to public participation in developing the country [17]. Participation is an opportunity for people to participate in initiatives, decision-making, joint practice, and share responsibility in various matters, which affects the people themselves [17], [18]. It is a cooperation of people, individuals, or groups of people who agree and jointly be responsible for carrying out development and change in the desired direction through a group or organization to achieve the desired change [19]. In other words, it is an opportunity for individuals to participate in helping one another in thinking, planning, making decisions, working together, and taking responsibility in various matters that affect the general public in management to achieve the goals of society. The 20-Year National Strategy is conducted for the nation to create Thailand as a stable, prosperous, sustainable, and developed country by the philosophy of sufficiency economy [18]. The national strategy on human resource and capacity development focuses on developing and upgrading people in all dimensions and ages to be good, competent, and quality human resource who are ready to drive the country's development forward to its full potential [18].

Many studies have been conducted to promote education in Thailand as it is an essential tool in developing Thailand [20]–[23], however, adequate educational opportunities for Thai people are more important. Building the community learning center (CLC) for people of all ages, equipped with modern technology is the way to provide adequate education and is a part of creating a smart city in response to the above-mentioned policy. Many provincial administrative organizations in Thailand have managed CLC for various purposes. For example, CLC in Nakhon Phanom Province has operated for historical and cultural knowledge management [24]. CLC in Phitsanulok Province has been established for promoting the literacy of the local citizens [25]. In some areas, CLC is further developed as the digital community center for the lifelong learning and the development of information and communication technologies (ICT) skills [26], or as the center for non-formal and informal education [27], or the elderly quality of life development [28]. In some ways, the development of CLC causes controversy and conflict between the project policymakers, administrators, and local citizens. As seen in many cases, the development may cause negative effects to the community such as air pollution, noise pollution, or social conflicts. To avoid this, public participation is the solution. Unsurprisingly, in some ways, to prevent social conflicts, the CLC is developed based on the local belief and culture as seen in the study of Sisabai, Phratheppariyattimethi [29], when Buddhist doctrines are applied in the management of CLC. Moreover, in many cases, in the northeast, the Buddhist monasteries are used as CLC [30] while in the south, many mosques become religious CLC [31].

Khon Kaen is set as a smart city according to the national development strategy as it is designated as an important city and the center of the northeastern region. The foundation for systematic and continuous provincial development has been organized to become a smart city according to the national strategy. The development processes are based on awareness of the advancement of technology, health care, art and culture preservation, and design [19]. While many studies on Khon Kaen smart city focuses on ICT development, IT infrastructure, security, and privacy, the development based on cultural belief is neglected.

Based on the study of previous scholarly works, cultural belief has been applied to develop the city. For example, the local literacy 'Sin-Sai or Synsai [32]' in a painting on the wall of 'Chaisri Temple', is applied as the local identity of Khon Kaen, later developed as the provincial cultural signature. Now it becomes CLC for the residents or visitors who want to learn the cultural sciences [33] of the city [34]. Besides ‘Sin-Sai’, there is also the important landmark called ‘Bue Ban’, literally translated as ‘Navel of City (Central City Pillar)’ of Khon Kaen. The worship site is the heart of the local people and it is suitable to develop as CLC. Bue Ban is enriched with the city's historical background, but the area has not been completely developed as CLC, although this area around Bue Ban has been developed three times by the local administrative organization (LAO).

From the investigation of the project operation together with the LAO, the project has been operated without academic guidelines and the local cultural belief. In line with the Khon Kaen City Development Plan [35], the researcher team, therefore, was interested in conducting the operational research to develop CLC based on the belief of Bue Ban as a part of a smart city development together with public participation and digital advancement, in response to the aforesaid national strategy. This qualitative research aimed to study the contextual conditions of Khon Kaen Urban Community for developing CLC as a part of smart city development. It also developed the CLC development model and the learning model based on the public participation and digital advancement.

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2. RESEARCH METHOD

This study was qualitative research carried out together with operation research. The qualitative research basically relied on the quality of the in-depth interview (IDI). Conducting IDI in this study was based on the guideline of Boyce [36]. While the operation research was based on the fieldwork operations (focus group discussion, seminar, design and CLC development). This study was carried out in three phases.

2.1. Phase 1: Study/review/synthesis

Step 1 was a study/review/synthesis of backgrounds of CLC, public participation, and Bue Ban backgrounds from documents and related research. In this stage, the research process began with studying concepts, theories, principles, and research work related to the project to identify the needed information, potential of the sources, and stakeholders to develop a first draft interview form. Then, the draft interview form was sent to the project’s advisors (the experts in the field of Research Methodology, Social Studies, Art and Humanities, Education) to verify. The amendment of the interview form has been made accordingly.

Step 2, the project team has set up interviews of 66 key informants or stakeholders including representatives of Khon Kaen Municipality, local scholars, representatives of ‘Hoop Team (literally, Painting)’ Club, and Khon Kaen Club based on Boyce’s method of data collection above. In this stage, the interview data were transcribed and reviewed. Thereafter, the research team wrote the report and sent it to all interviewees to get feedback. Finally, the revised report has been sent to interviewees, stakeholders, funders, and communities.

Step 3 was an organization of focus group discussion [37]. There were 30 participants including abbots, Mayor and Vice-mayor of Khon Kaen Municipality, Director of Provincial Education Office, Director of Provincial Office of Environment and Health, Heads of Communities around Bue Ban, local philosophers, and those who involved in the project to study. Review and synthesize the interview report from steps 1 and 2 to find the guideline to develop the CLC development model in Phase 2.

2.2. Phase 2: CLC development model

The model was developed through the processes of technology, art, and city design, divided into two steps. Step 1 was a meeting of stakeholders to review the development guideline from the study results in Phase 1. The meeting has finalized the CLC development model as seen in Figure 1. The model is composed of three processes of development: i) Planning: this process was operated by the research team together with Khon Kaen Municipality and representatives of the community; ii) Seminar (based on the guideline of Bhavan [38]): the research team and Khon Kaen Municipality have organized the Seminar on Bue Ban to obtain the body of knowledge which the communities want to propagate in CLC of Bue Ban; and iii) Finally the body of knowledge regarding the history of Khon Kaen and Bue Ban as a spiritual center has been finalized.

![Figure 1. Bue Ban CLC development model](image)

2.3. Phase 3: Fieldwork development

In this stage, there was a design of CLC by representatives from Khon Kaen Municipality, local scholars, community representatives, Khon Kaen Tae Hoop Club (Khon Kaen Art Club), together with the research team and digital technicians. The development of CLC in the actual area for people in Khon Kaen has been operated by the research team and related agencies such as Khon Kaen Municipality, community leaders, and residents.
3. RESULTS

In regards to the contextual conditions of Khon Kaen, the Bue Ban area had not been completely developed even if the development project is in the Khon Kaen Municipality development plan in the last three fiscal years. The last three times of development were carried out under the employment contract and the development was conducted without public participation. Also, the idea of creating Bue Ban as CLC was unclear as it looked like a part of spatial maintenance.

In this study, the development was conducted based on the core principles of operational and qualitative research, including planning, execution, observation, and reflection of practice results, as well as considering a new operational plan. According to the interviews of the key informants and results of the academic seminar, the development model of Bue Ban was created. The model comprised of the major stages: i) Planning in collaboration of research team, Khon Kaen Municipality, and community representatives; ii) Seminar on the topic: Bue Ban and Khon Kaen Citizenship; iii) The body of knowledge related to the history of Khon Kaen and Bue Ban as a spiritual center of the communities. This operational model leads to the initiatives to develop Bue Ban as CLC for historical and cultural studies.

The results from jointly developing the model created: i) Awareness of people in the community to love and learn their hometown; ii) Reflection of Khon Kaen identity through the tools used in occupation, such as a woven bamboo container for steamed glutinous rice (Thai: Kratip-khow-niew), yarn weaving tool (Thai: A-gro-dai), silk weaving tool (Thai: Feuw), and silkworm; iii) The community-made decisions on appropriate actions through the meeting, group discussion, seminar, and collective agreements by the participation of all parties, which led to the development of innovations in the research area; iv) The development of creative spaces in the community for cultural activities and other activities. Also, from the research results, a model called ‘KID-PU’: knowledge management, identity, development, publication, utilization was created as the learning model which will be used to create CLC in other areas in Khon Kaen as seen in Figure 2.

![Figure 2. A learning model of Khon Kaen City as a Smart City](image)

From this stage of research, it leads to the implications of the research results. The use of research results as information for the promulgation of the ordinance of Khon Kaen Municipality. This leads to the sustainable development of Bue Ban as CLC. CLC provides academic resources on the history of Khon Kaen concerning Bue Ban, good cultural arts, and culture and traditions in digital formats containing six subjects of knowledge with a QR code that could be scanned by mobile phone to learn the provided contents.

The research results were beneficial to people by improving their quality of life and economy, such as the use of arts and culture, sufficiency economy lifestyle. The research team created innovations: i) Smart electric poles; ii) A sign indicating the direction of Bue Ban; iii) A sign indicating the direction of Bue Ban on the road in the middle of the city at the entrance to Bue Ban; iv) A painted road surface leading to Bue Ban that is a colorful road surface development for a clean and pleasant view for people in the community; v) Landscape improvement of Bue Ban, both inside and outside of the shrine, a clean and beautiful place, where people can use it for activities; vi) A check-in point that indicates the information of Bue Ban on the Google Maps of Thailand for convenient search for visitors. It is the utilization of the research result in at least six communities in the Khon Kaen Municipality. This provides benefits in terms of spatial use among the residents. It is the creation of spiritual values, uplifting the mind, creating aesthetics, creating happiness for people in the community.
4. DISCUSSION

The development of a smart city requires the collaboration of the community and factors that exist within the community, combined with the appropriate use of modern technology. In Khon Kaen, the development of community started from Bue Ban, which is the center of the mind of Khon Kaen people as CLC. It is an area that people have been paying attention to for a long time and wanted to develop in parallel with the development of modern technology, where people can easily visit and access information from the curated knowledge base. This is consistent with the study of Wanatham Kanchanasuwan [39], which found that there are seven important management processes of developing communities in Thai society: i) Community participation, ii) Learning exchange, iii) Production and restoration, iv) Exercising community rights and community ordinances, v) Community decision-making, vi) Network development, and vii) Self-management. These are also the studies mentioned above [12], [14]. This research result is also consistent with previous scholarly works which undoubtedly mentioned that modern technology, local culture, and public participation are the essential factors in creating a smart city [40]. However, the development model of CLC may vary based on the purposes of the project. In some cases, public participation was applied with other elements such as self-reliance, leadership, and network collaboration [41].

This was operational research to invite the communities and those involved in joining the operation to develop the area to support the learning of the community. Therefore, the results of the research are directly beneficial to the community in five dimensions as mentioned above particularly the policy implication. This is consistent with the research of Tippakoon [42], who studied key factors of the utilization of research by government agencies in Thailand. For the research findings to be utilized for more policy purposes, the connection mechanism between government and research sectors that allows for mutually exchanging interactions must be built [42]. Currently, some research funding agencies (for example, Thailand Science Research and Innovation) have emphasized the connection between the researcher and the beneficiary throughout the research processes [43]. However, today there is not a systematic assessment of the effectiveness of the approach in terms of increasing the level of utilization of the research results [42].

Motivating researchers to apply their research results for policy utilization should be considered. It can be said that there is currently no concrete incentive system that would attract researchers to put their work for utilization in Thailand. Although there are indicators for the research result utilization in terms of education quality assessment in higher education institutions, such conditions are not motivating at the individual level.

The agencies' need for utilizing research results is one of the most important factors. Therefore, a new system may need to be designed to allow researchers to see the benefits of investment in driving research results for policy use. The key point is to know the kind of research needed by government agencies for utilization. At this, the mechanism connecting for the continuous and regular exchange of information between government agencies and researchers should be able to identify the needs of users and make the research more responsive to their needs and demands. As shown in this research, the collaboration of policymakers, researchers, and communities creates the operational effectiveness of the project.

Creating Bue Ban CLC is a good example when the local administrative organization uses the research results as a guideline for the development. As mentioned above, the development of a 'smart city' is not easy as there are many challenges regarding governance, economy, mobility, environment, people, and living for policymakers [10]. IT infrastructure, security, and privacy, big data management, cost, heterogeneous environment and interoperability, efficiency, availability, and scalability [11]. Besides these, the research result suggests that a smart city must be built based on local beliefs to avoid social conflicts or controversy. Building it as CLC is a solution as it attracts collaboration from all parties in the community. As mentioned above, this project has been conducted three times but unsuccessfully. The finding of this study could be the guideline to develop CLC as a part of smart city development in other areas.

5. CONCLUSION

The development of CIC has been successfully completed. It leads to the creation of positive feeling towards hometown of the residents, reflection of Khon Kaen identity, public collaboration and understanding of the project. Based on this, the ‘KID-PU’ model was created as the learning model. It can be used to create CLC in other areas. It can be concluded that the development of a smart city requires the collaboration of the community and factors within the community, combined with the appropriate use of modern technology. Building a smart city should not focus on IT infrastructure, security and privacy, big data management, cost, heterogeneous environment and interoperability, efficiency, availability, and scalability only, but the local belief and local collaboration cannot be overlooked. The most obvious outcome of this study is to complete the construction of Bue Ban as CLC of the community. The outcome of this study is so called ‘academic service to serve the community’.
The government should encourage and support the development of CLC based on factors that exist within the community for people. It also important to create a learning space within the community equipped with modern technology in other areas together with public participation. The results of this research and ‘KID-PU’ model can be used as the model to develop CLC in other areas. Also, the local administrative organization should provide the budget for future research on developing Khon Kaen as a smart city in other dimensions such as art, environment, health care.

REFERENCES
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