

A Model for Elderly Well-Being: Saensuk's Smart City Solutions

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ABSTRACT

Objective: This study investigates the role of advanced technologies in enhancing the quality of life and addressing demographic challenges through the development of Smart Cities, with a particular focus on elderly care. **Method:** Using a qualitative research design, the study employs field observations and case analysis of Saensuk Municipality, Thailand's pioneering Smart City initiative that integrates technology to support aging populations. The implementation includes wearable alert devices, emergency response units, environmental hazard detection systems, and real-time incident management applications. **Results:** The findings reveal that the integration of these technologies significantly improves the safety, responsiveness, and overall well-being of elderly residents, transforming Saensuk into a safer and more adaptive urban environment. The study demonstrates how technology can be strategically aligned with social needs to foster inclusive urban development. **Novelty:** This research contributes to the global Smart City discourse by presenting a unique case of elderly-centered innovation, positioning Saensuk Municipality as a benchmark for future urban planning models that prioritize demographic inclusivity and sustainability.

INTRODUCTION

Urbanization has become a defining characteristic of modern society, placing considerable strain on infrastructure, resources, and urban governance. The United Nations (2019) projects that by 2050, approximately 68% of the global population will reside in urban areas, increasing the demand for innovative urban planning and management strategies [1], [2]. Among the challenges posed by urbanization is the transition to an aging society, which necessitates that cities address the health, safety, and overall well-being of their older populations [3].

In response to these challenges, the concept of Smart Cities (SCs) has gained traction. SCs leverage advanced technologies such as the Internet of Things (IoT), Artificial Intelligence (AI), and Big Data Analytics to enhance urban administration and improve residents' quality of life [4], [5]. Thailand has embraced these principles in its urban development initiatives, with Saensuk Municipality emerging as a pioneering example. Located in Chonburi Province, Saensuk has focused its Smart City projects on addressing the specific needs of its aging population, which constitutes a significant portion of its residents.

Saensuk Municipality has implemented innovative technological solutions including IoT-enabled health monitoring systems, wearable emergency alert devices, and real-time response mechanisms aimed at enhancing the safety, health, and independence of its elderly citizens [6], [7]. These initiatives align with the broader objectives of Smart Cities to integrate technology into urban environments for sustainable and inclusive development. However, challenges persist, including disparities in access to technology,

gaps in digital literacy among seniors, and concerns regarding the long-term sustainability of these projects [2], [8].

This article examines Saensuk's Smart City initiatives with a focus on how they address the challenges associated with an aging society while creating a replicable model for other urban centers. By leveraging case studies and theoretical frameworks, the study provides insights into how technology can enhance the quality of life for elderly populations and contribute to broader sustainable urban development goals. The findings emphasize that effective solutions must be adaptable to local contexts while addressing the unique demographic and societal challenges faced by cities like Saensuk [9], [10].

RESEARCH METHOD

This study employs a document review methodology to examine books and scholarly articles relevant to digital transformation, smart cities, and the opportunities and obstacles for implementing digital transformation in local government. Document review is a qualitative research method that involves systematically analyzing and interpreting existing materials to draw meaningful insights (Bowen, 2009). By using this approach, the study aims to synthesize theoretical frameworks, practices, and case studies from credible sources to establish a foundation for the research.

The primary sources include books on digital transformation and smart city development, as well as academic articles published in peer-reviewed journals focusing on public administration and local governance. The study also includes an analysis of practical examples, such as the Saensuk Municipality in Thailand, which demonstrates the effective use of technology to reduce emergency response times and decrease hospital admission rates. Saensuk Municipality has implemented a digital platform called the "Saensuk Smart Health System," integrating IoT devices and mobile applications to monitor the health of elderly residents. The selection of materials prioritized studies discussing the integration of digital technologies, the role of innovation in enhancing urban services, and the challenges faced by local governments in adopting such initiatives. The analysis emphasized identifying key success factors, barriers to implementation, and strategies for overcoming these challenges in the context of local governance and digital transformation.

RESULTS AND DISCUSSION

Results

1. Smart city

According to Meijer and Bolívar smart City refers to an urban environment where technology is utilized alongside resource management and governance to improve decision-making, policy development, and execution. This framework encompasses structural transformations and processes that leverage data-driven insights for effective governance [5].

According to Glasmeier and Christopherson smart city is described as an innovative marketplace that focuses on effective management and traffic regulation while utilizing technology to assess different subsystems within the urban environment. These subsystems encompass areas such as energy supply, water resources, transportation systems, environmental monitoring, job opportunities, sustainable practices, and economic development. Nevertheless, this approach tends to neglect critical factors concerning the overall quality of life and the sustainability of living conditions, including work dynamics, mobility issues, public transport evaluations, and transparency in data usage [15].

According to Angsukanjanakul the idea of a Smart City encompasses urban development strategies designed to mitigate environmental issues while promoting the utilization of clean energy. Additionally, it emphasizes the efficient and effective management of resources [15].

According to Attaphon Chongraksa with Kritakorn Kachenchai Smart Cities are often associated with advanced IT infrastructure and cutting-edge innovations. When mentioned, they typically evoke images of Silicon Valley in the southern San Francisco Bay Area, California, USA - a region globally recognized as a hub of technological advancement and innovation. This area hosts numerous tech giants and startups, supported by world-class universities and venture capital firms. However, a true Smart City extends beyond just technology, focusing on using these innovations to improve citizens' quality of life and create more sustainable urban environments [14].

According to Ekachai Sumalee Smart City represents an urban environment where information and communication technologies are seamlessly integrated with physical infrastructure, backed by robust support systems. These cities are characterized by their dynamic socio-economic and cultural frameworks that demonstrate remarkable adaptability and learning capabilities. They excel in rapid and efficient responses to evolving challenges, while maintaining a core focus on active citizen engagement and participation [13].

Thailand is currently facing a rapid transition into an aging society, with the population aged 60 and above steadily increasing. This demographic shift has resulted in various issues related to elderly care becoming significant challenges that require effective development and management, particularly in rapidly growing urban areas like Bang Saen, which is on the path to becoming a Smart City in the future [1], [3], [11].

The challenges faced by the elderly in Bang Saen are diverse and complex, especially concerning healthcare and safety. Many elderly individuals require ongoing medical support, which places a heavy burden on families and society as a whole. Furthermore, some seniors depend on family members for daily living assistance, forcing working-age family members to sacrifice their time and productivity to care for the elderly. This situation not only affects work efficiency but also increases the strain on resource allocation.

The rising demand for elderly care has thus become a significant barrier to the development of a Smart City in Bang Saen. The necessity for working-age individuals to

care for seniors results in wasted time and resources that could otherwise be utilized for urban development, creating an economic burden on families and society. Additionally, seniors aged 60 and above are at higher risk for health issues that require specialized care, which can lead to inconvenient medical treatments or a lack of timely access to healthcare services [7], [16].

Addressing the issues faced by the elderly in Bang Saen is therefore an urgent matter, especially in the context of transitioning to a Smart City that can adequately meet the specific needs of this demographic. Implementing technology-based solutions for elderly care, such as telehealth systems, health monitoring sensors, and smart wearable devices, can alleviate the burden on families and enhance the efficiency of healthcare and safety measures for seniors in Bang Saen [2], [7], [17].

When Bang Saen effectively resolves its elderly care challenges, it will be better positioned to advance towards becoming a fully realized Smart City. The provision of elderly care is a crucial component that impacts the quality of life for all citizens. Utilizing technology in elderly care will enable Bang Saen to manage the challenges posed by an increasing senior population effectively, ensuring that the city is not only equipped with modern infrastructure but also capable of sustainably caring for all demographic groups.

Thus, managing elderly issues in Bang Saen through technology-driven approaches aligns with essential objectives for transforming it into a genuine Smart City. This transformation will contribute to making Bang Saen a high-quality living environment that is sustainable across economic, social, and health dimensions for all its residents in the future [12].

2. Digital transformations

The general concept of digital transformation at the international government level refers to the integration of digital technologies to enhance the operations and services provided by governmental entities. The primary objective of this transformation is to improve service efficiency, citizen engagement, and transparency in governance. This process encompasses the utilization of data-driven technologies to facilitate informed decision-making and respond swiftly to the evolving needs of the populace. Digital transformation within government frameworks involves several critical components, including the modernization of service delivery through digital channels, the application of data analytics to support decision-making processes, and the promotion of transparency and accountability in governmental operations. Furthermore, it necessitates the development and training of digital skills among public sector employees to effectively leverage new technologies. Governments play a pivotal role in driving digital transformation by formulating policies and regulations that foster an environment conducive to digital innovation. This includes investing in digital infrastructure, such as broadband networks, and enhancing the digital competencies of citizens. Additionally, establishing partnerships with the private sector and other organizations is essential for advancing initiatives related to digital transformation [2], [5], [7], [14].

a. Concept of digital transformations of Thailand

The concept of digital transformations in Thailand refers to the comprehensive process of integrating digital technologies across various sectors of society and the economy. This transformation aims to enhance operational efficiency and service delivery, particularly in business and public services. The overarching goal is to create convenience for citizens and support economic growth in an era where technology plays a pivotal role. Thailand has established the "Thailand 4.0" policy to drive this transformation, focusing on developing an innovation-driven economy [7], [13]. This includes promoting the use of big data and data analytics to enable businesses to make informed decisions. Additionally, the government emphasizes the development of digital infrastructure, such as electronic payment systems (e-payment) and various online services, which facilitate easier access for citizens. Digital transformation is also linked to the development of smart cities, which aim to create interconnected environments that meet the needs of citizens. Technologies such as the Internet of Things (IoT) and artificial intelligence (AI) are employed to address various challenges, including traffic management, healthcare, and community safety [5].

b. Policy about discriminations in Thailand

Digital transformation is a critical process that the Thai government emphasizes for the development of the economy and society in the digital age. This transformation particularly focuses on technological advancements in urban management, public services, and healthcare systems to accommodate the changing demographics, especially as the population increasingly transitions into an aging society. Both at the national and local levels, the government has established a National Digital Transformation Policy aimed at creating a framework for action and investment in this area. The policy emphasizes leveraging digital technology across various sectors to enhance quality of life, improve service efficiency, and elevate operational standards in both public and private sectors [14].

1) National level policies

At the national level, Thailand's digital transformation policy is promoted by the Ministry of Digital Economy and Society (MDES), which has developed the Digital Government Development Master Plan. This plan aims to ensure that all sectors of society can effectively utilize digital technologies, particularly in developing smart cities and managing digital data to improve public services across all regions [7], [15].

One of the primary objectives of this strategic plan is to create urban environments that leverage technology to meet citizens' needs, particularly in healthcare. This includes establishing modern and secure infrastructure systems and developing smart cities that utilize digital data and information technology systems to enhance the quality of life for all citizens, including the elderly [2], [5].

2) Local level policies

At the local level, municipalities such as Saensuk City play a vital role in integrating technology into healthcare systems and various services, particularly through the development of smart cities to address challenges posed by an aging population. Saensuk City has adopted digital technologies such as IoT (Internet of

Things) and AI (Artificial Intelligence) to support elderly care in various aspects, including health monitoring, accident prevention from falls, and emergency response through advanced technology. The use of technology at the local level aligns with national policies aimed at enabling cities across Thailand to utilize digital technologies to enhance public service delivery and healthcare management. This includes employing digital tools for monitoring the health of elderly citizens, who are a primary target group requiring close attention [13], [15].

3. The role of digital transformation in healthcare for the elderly

Digital transformation encompasses not only the development of smart cities and improved public service delivery but also plays a crucial role in enhancing healthcare systems, particularly for the elderly population. As Thailand transitions into an aging society, the implementation of digital technologies in elderly healthcare can mitigate health risks and expedite emergency responses. Notable examples include the utilization of telemedicine systems and smart health systems, which facilitate easy and rapid access to medical care for seniors, even when they are located far from hospitals or clinics. In addition, the adoption of smart wearable devices, as implemented by municipalities such as Saensuk City, allows for the monitoring of elderly individuals' movements and health signals. These devices can alert caregivers to any potentially dangerous changes in health status, thereby leveraging technology to reduce risks and enhance safety for seniors within the community [3], [5].

4. Impact of digital transformation on social inclusion for the elderly

The digital transformation across various sectors not only improves healthcare efficiency for the elderly but also significantly impacts social inclusion and collaboration among seniors who may feel isolated or disconnected from their surroundings. Technologies that foster community connections, such as mobile applications that enable elderly individuals to track local activities or connect with social support groups, play a vital role in this regard. Promoting digital literacy among seniors and encouraging them to engage through digital communication channels can enhance their sense of belonging within society and bridge the generational divide regarding technology access [3], [6], [14].

5. Challenges and opportunities of digital transformation for the elderly in Thailand

Despite the numerous benefits that digital transformation brings to elderly care, several challenges must be addressed. Particularly concerning are those seniors with limited technological knowledge or those lacking access to the internet and smart devices. However, education and training initiatives aimed at equipping older adults with technological skills can help alleviate these issues. One significant opportunity lies in fostering collaborations between the private sector and government organizations to develop user-friendly digital tools and services tailored for seniors. Such initiatives would facilitate easier access to technology without overwhelming barriers [6], [15].

6. Case studies of smart city initiatives for elderly care

Examining various case studies related to smart city development for elderly care reveals valuable insights. For example, Saensuk Municipality has implemented smart tracking devices and other technologies to manage the health of its elderly residents effectively. These innovations can serve as models for other regions aiming to develop smart cities by employing technologies capable of monitoring health conditions and reducing fall-related accidents—one of the primary concerns faced by older adults. Through these initiatives, Thailand is not only addressing immediate healthcare needs but also laying a foundation for sustainable urban development that prioritizes the well-being of its aging population. Addressing the challenges of an aging population in Thailand necessitates collaboration between public and private sectors at all levels—individuals, communities, and national frameworks. It is crucial to raise awareness about the importance of preparing for an aging society while planning for savings and retirement living. Initiatives should include community engagement activities focused on health education for seniors and social adaptation strategies. By implementing effective management and development practices, Thailand can navigate this transition successfully without undue concern [5], [7].

Saensuk Municipality, situated in Chonburi Province, has positioned itself as a leader in Thailand's Smart City initiatives, particularly focusing on the needs of its elderly population, which makes up over 17% of its residents aged 60 and above. To enhance the safety, healthcare, and overall quality of life for these citizens, the municipality has adopted various innovative Smart Living technologies [11].

Smart technologies for elderly care

Smart wearable devices

Saensuk Municipality has provided elderly residents with wearable devices that tackle significant challenges they face. These devices include:

- a. GPS tracking: This feature helps monitor mobility and ensures safety for individuals who may wander or become disoriented.
- b. Emergency alert buttons: These buttons facilitate immediate communication with caregivers or municipal response teams.
- c. Health monitoring sensors: These sensors track vital signs such as heart rate, temperature, and activity levels, sending real-time data to local healthcare centers.

According to the Saensuk Smart City Master Plan (2022-2027), 85% of these devices are actively used, resulting in a reduction of emergency response times from an average of 20 minutes to just under 10 minutes [11]. Residents have reported feeling more secure, particularly those living alone.

7. Factors contributing to saensuk's success in utilizing technology for elderly care

The successful integration of smart technologies into elderly care within Saensuk Municipality can be attributed to several interrelated factors that reflect a strategic and context-sensitive approach to urban development.

1. Strong local governance and strategic planning: Saensuk's leadership has shown a firm commitment to tackling demographic challenges through its Saensuk Smart

City Master Plan (2022-2027). This plan delineates specific objectives, such as reducing emergency response times and enhancing the independence of elderly residents. By aligning local policies with the broader goals outlined in Thailand's Digital Economy and Society Development Plan, Saensuk has established itself as a model for localized implementation of national strategies [11].

2. Tailored and accessible technological solutions: The municipality's emphasis on user-friendly technologies, including wearable health monitoring devices and real-time response systems, ensures that elderly individuals can benefit from these innovations without needing advanced digital skills. For example, GPS-enabled tracking systems and emergency alert buttons have been widely adopted, with 85% of users reporting increased safety and convenience (Saensuk Municipality, 2024). This focus on practicality over complexity guarantees that the technology aligns with the capabilities and daily needs of the elderly population [5].
3. Cross-sector collaboration: Partnerships with private sector organizations and academic institutions have been instrumental in funding and piloting key initiatives. These collaborations enable Saensuk to leverage advanced technologies while minimizing financial strain on local government resources [7].
4. Community engagement: and feedback Saensuk's participatory approach has been vital in building public trust and ensuring the long-term success of its projects. Focus groups and surveys conducted with elderly residents and their families have informed the design and implementation of technologies, ensuring that initiatives are culturally and socially relevant [3].

8. Challenges and obstacles in utilizing technology for elderly care

Despite its successes, Saensuk faces several challenges that underscore the complexities of implementing smart technologies for elderly care in a localized context:

1. Digital divide among the elderly: A significant portion of elderly residents lacks the digital literacy required to fully utilize smart devices. This issue is exacerbated by the absence of widespread digital training programs tailored specifically for seniors, leading to disparities in technology adoption [13].
2. Dependence on external funding: Many of Saensuk's initiatives rely heavily on financial support from private sector partnerships and government grants. Without sustainable funding mechanisms, the continuity of these projects remains uncertain [7].
3. Technical and maintenance challenges: The maintenance of IoT devices, such as replacing batteries in wearable devices or updating system software, has emerged as a recurring issue. Ensuring long-term functionality requires a robust support system, which is often under-resourced [11].
4. Resistance to change: Cultural attitudes among some elderly individuals, particularly those accustomed to traditional caregiving methods, can create resistance to adopting new technologies. Overcoming this barrier requires more than just education; it necessitates building trust and demonstrating the tangible benefits of these innovations [5].

Discussion

1. Digital transformation

Digital transformation refers to the integration of digital technologies to enhance operational methods and service delivery within the public sector, focusing on improving efficiency and convenience. This includes advancements in communication, data management, and the provision of faster and more accurate services, ultimately leading to increased transparency and effectiveness in government operations. At the local government level, where direct interactions and services are provided to citizens, digital transformation facilitates easier access to various services. For example, citizens can submit applications, pay taxes, or request information through online platforms, streamlining processes and significantly improving convenience for the local population [5], [7].

2. Success factors and challenges in implementing smart city technologies

The success of Saensuk Municipality in adopting smart city technologies for elderly care is attributed to its preparedness across various aspects. Strong management practices, supported by a well-defined Smart City Master Plan, outline clear objectives such as reducing emergency response times and increasing the independence of elderly residents. The clarity and continuity of this plan have ensured successful implementation [11]. The technologies implemented by the municipality, such as GPS systems and emergency alert buttons, are designed to be user-friendly, even for elderly individuals with limited digital skills, thereby enhancing both safety and confidence. Another crucial factor is cross-sector collaboration [5], [7]. Partnerships with private organizations and academic institutions have provided necessary resources and innovations, easing the financial burden on the local government and ensuring long-term sustainability [7], [13]. Additionally, community engagement has been pivotal, with surveys and focus group discussions ensuring that the technologies developed align with the social and cultural context of the area [3].

a. Technological impact and challenges

Studies indicate that the smart city technologies deployed by Saensuk Municipality, particularly IoT and AI systems, significantly improve the quality of life for elderly residents, particularly in terms of health and safety. Noteworthy achievements include reducing emergency response times from 20 minutes to less than 10 minutes, substantially increasing survival rates during critical incidents. Furthermore, hospital admission rates have decreased by 30% due to health monitoring enabled by IoT systems [5]. However, the municipality faces several challenges. Digital literacy gaps among the elderly hinder their ability to fully utilize these technologies. Reliance on external funding raises concerns regarding the long-term sustainability of the initiatives [13]. Resistance to change among some elderly individuals, who are accustomed to traditional caregiving methods, also poses a barrier to the widespread adoption of these technologies [5].

b. Comparative analysis

When compared to Singapore's Smart Nation initiative, Saensuk focuses on basic, accessible technologies such as IoT and wearable devices, while Singapore emphasizes advanced AI systems, including robotic solutions for elderly rehabilitation [2], [5]. These advanced systems reduce reliance on healthcare personnel and improve the convenience of service delivery. Similarly, Copenhagen in Denmark prioritizes renewable energy integration, as seen in its Climate Plan 2025, which utilizes solar energy to enhance urban sustainability. In contrast, Saensuk has yet to adopt renewable energy policies, reflecting differences in resources and developmental priorities between these cities [6].

In comparison to smart city initiatives and digital transformation efforts in other contexts, such as Singapore and Denmark, Saensuk emphasizes basic, user-friendly technologies that are more accessible to its population. Developed nations, on the other hand, often prioritize advanced innovations, such as AI and renewable energy, and have stronger support systems for digital skills development and infrastructure [2], [6]. Saensuk stands out for its strategic adaptation of technology to suit local needs, despite limitations in resources and technological advancement. Its approach serves as a valuable model for other areas in Thailand with similar demographic and contextual characteristics [11].

3. Challenges and tailored recommendations for saensuk's smart city

Although previous studies and the findings from Saensuk Municipality demonstrate success in the implementation of technology – such as reducing emergency response times and decreasing hospital admission rates – I contend that this project lacks a comprehensive understanding of the actual needs of the elderly within the Thai social context, which may differ significantly from those of elderly populations in developed countries like Singapore.

For instance, international studies often emphasize the adoption of advanced AI or automated robotics to assist in the rehabilitation of elderly individuals. However, I believe that elderly people in Thailand prioritize social interaction and familial warmth over reliance on cutting-edge technology. Therefore, focusing on developing technologies that consider social factors—such as connecting families to digital healthcare systems or creating closely-knit elderly communities—would likely better address their needs [2], [3].

Another point to consider is that the development of digital infrastructure in Saensuk has primarily centered on providing devices like IoT and smart wearables for the elderly. Nevertheless, I argue that promoting digital skills development should be a foundational priority before distributing devices. Many elderly individuals may receive these devices but may not be able to utilize them effectively without appropriate training and support.

Additionally, I disagree with evaluating the success of this initiative solely through quantitative metrics, such as reduced response times or decreased hospital admissions. While these figures reflect performance, I believe that success should also be measured by improvements in other aspects of quality of life, such as happiness,

community trust, and life satisfaction, which may require more in-depth qualitative assessments.

Finally, I harbor concerns regarding the sustainability of this initiative due to its reliance on substantial funding and support from the private sector. Without a clear plan for future support, there is a risk that the project may stagnate. I suggest that Saensuk focus on creating a model that not only relies on financial resources but also fosters self-sustaining communities in the long term.

4. Future study directions

a. Bridging the digital divide

Future studies should focus on developing digital training programs tailored to the needs of elderly individuals, incorporating easily understandable content and encouraging family involvement. This approach aims to enhance digital literacy among seniors, facilitating their engagement with technology [7], [13].

b. In-depth Integration of AI

There is a need for studies exploring the potential of advanced AI applications, such as robots for elderly care or predictive analytics systems, to improve healthcare accuracy and reduce long-term costs. Investigating these technologies can provide insights into how they can be effectively integrated into existing healthcare frameworks [2], [7].

c. Renewable energy planning

The development of renewable energy sources, such as solar panels, should be prioritized as it can help reduce project energy costs and enhance long-term sustainability. Studies in this area can identify effective strategies for integrating renewable energy into Smart City initiatives [6], [13].

5. Policy recommendations

a. Develop digital training programs for the elderly

Municipalities should collaborate with universities or relevant organizations to implement digital training programs that empower elderly individuals to utilize technology effectively. This partnership can enhance the overall digital competency of the senior population.

b. Establish data governance measures

Creating stringent policies regarding the storage and use of health data can increase trust in technology among elderly users. Ensuring data security and privacy will encourage greater adoption of digital health solutions.

c. Enhance international collaboration

Saensuk should seek to develop partnerships with leading cities such as Singapore and Copenhagen to exchange knowledge and best practices. Such collaborations can facilitate the sharing of innovative solutions tailored to the needs of elderly residents.

d. Promote renewable energy use in smart city projects

Integrating green energy technologies into Smart City initiatives can assist municipalities in achieving long-term sustainability goals. Studying and implementing renewable

energy solutions will contribute to a more resilient urban environment (chulalongkorn university,2024) [9], [10].

CONCLUSION

Fundamental Finding : This study highlights the successful integration of accessible and community-based smart technologies in Saensuk Municipality, demonstrating their significant role in enhancing the safety, health, and quality of life for elderly residents within a localized Smart City framework. **Implication :** The Saensuk model provides a practical and scalable approach for other urban areas, especially in developing countries, to address demographic aging by combining technological innovation with inclusive policy and community engagement. **Limitation :** Despite its achievements, the initiative still faces limitations in digital literacy among the elderly, the long-term sustainability of technology deployment, and equitable access to services. **Future Research :** Subsequent studies should focus on developing and evaluating digital literacy programs tailored for seniors, exploring the potential of AI-powered elderly care applications, and assessing the feasibility of integrating renewable energy to support the sustainability of Smart City infrastructures.

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