

SUSTAINABLE CITIES BASED SMART CITY: AN ETHNOGRAPHY (CASE STUDY: FOR THE NEW CAPITAL CITY IN INDONESIA)

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Abstract

The relocation of the new capital city (IKN) is expected to bring about changes in all aspects of life. The removal of the capital city itself is a major government policy that will certainly affect the social life of Indonesian citizens. People's behavior in the location of the new capital is still underdeveloped, the readiness in moving the new capital must be proven with a definite step from the government. The purpose of this study is to explore the antecedents and consequences of moving the country's capital to an East Kalimantan based smart city and its implications for the surrounding community. The method used is ethnography. The result of this research is a finding in the form of antecedents and consequences of relocating a new capital city, and its implications which influence the adoption of electronic governance (e-governance), electronic marketing (e-marketing), electronic learning (e-learning), and electronic smart city. (e-smart city) in various sectors. Therefore, this research contributes to the science regarding smart cities in the new capital city of the Republic of Indonesia.

Keyword: e-governance, e-marketing, IKN, e-learning, e-smart city.

INTRODUCTION

The technology of research-based electronic smart cities in Indonesia and the world has been implemented and analyzed in Industry 4.0 [1-14]. In this regard, sensors have been developed as supporting technologies [15]. Electronic marketing can be used as a way and strategy to attract residents of old capital to new capital [16].

Electronic governance is a good governance strategy that can be applied to the new capital [17]. In addition, it is necessary to develop new renewable energy sources, such as using wind turbines as energy sources in the new capital [18]. In addition, in the new capital city, micro hydropower can become an alternative source of new and renewable energy [19].

The rivers in the new capital have great potential, so it is very important to implement environmentally friendly micro-hydropower in the future [20]. Compared with traditional generators, distributed power generation, as a new type of renewable energy based on wind, water, sunlight, etc., can become a solution, and it is novel [21].

A smart city predicted to be the new capital, especially in East Kalimantan (part of the Penajam Paser Utara Regency and part of the Kutai Kartanegara Regency) [22]. The microcontroller ATmega 8 based on ultraviolet technology can support this new city as an alternative energy source [23]. Digitization is the key to the era of Industry 4.0 and Society 5.0 [24]. The smart city in the new capital will be implemented and will have an impact on the country's development [25].

Smart cities in East Kalimantan and all regions of Indonesia are a strategy to become a developed country [26]. All of these must be supported by data, especially big data [27]. In addition, there must be supporting technologies in smart cities, such as electronic thermometers [29]. As a learning technology in schools and campuses of the new capital, mobile learning is the key to promoting e-learning-based education 4.0 [30-34]. From the perspective of ethnography, if all the elements work together to build a country based on a smart city based on sustainable cities, all of these can be achieved.

METHOD

The methodology of this research uses a qualitative approach. Data collection used the collected survey (questionnaire), which included 16 questions related to the degree of preparedness of residents for the new capital. It is also related to the education, job possibilities and citizens' knowledge of smart cities; interviews; systematic literature reviews; especially ethnography. The unit analysis of this research used a sample of 16 interviewees in East Kalimantan Province, especially the people of Penajam Paser Utara Regency and Kutai Kartanegara Regency.

FINDINGS AND DISCUSSION

Based on the results of the reaction of the people of East Kalimantan (Kaltim) to the relocation of the capital in terms of employment and education opportunities, various responses were derived from several questions raised. Many people responded positively to the new national capital (IKN). The community is proud and happy to move the capital to East Kalimantan because this will enable East Kalimantan City to experience rapid development in various fields and there will be many new job opportunities there.

However, they also realized that the transfer of this IKN was adversely affected. Many people are worried that they will not be able to compete with immigrants and will eventually lead to social conflicts. Eventually, the indigenous people in eastern Kalimantan will be displaced. They are also worried that they will lose their land to maintain the livelihoods of the local communities because the land is used to build new facilities as the new capital area. Not only must the people's land be sacrificed, the construction of these facilities and infrastructure will of course also transform forest land. Therefore, this also has an impact on other things, such as population explosions, traffic congestion, deforestation, air pollution, and even increased crime there.

In this regard, it is still necessary to question whether the people of East Kalimantan are willing to appoint East Kalimantan as the new IKN. Before making the decision to move IKN, some people plan to continue their studies in their own area or outside the area, and then return to East Kalimantan to work there. There are also people who want to improve their soft skills and technical knowledge and own their own business. This undoubtedly had a positive impact on the people there. But in fact, many people are still not ready for this.

Judging from the research results, the community has many opinions, especially their level of preparation for education. Some people still believe that education is unevenly distributed, so people living in the eastern border areas of Kalimantan need to receive the same quality of education as in urban areas. Due to the lack of teachers and students' knowledge of the use of technology in education, people living in certain areas of eastern Kalimantan have not seen any special preparations for education. Even if education continues to develop in urban areas, there is still a need to improve education from urban areas to areas outside the border areas so that the quality of human resources of the people of East Kalimantan can move forward shoulder to shoulder with newcomers.

The educational background of the community will also affect the jobs available to the community. However, according to the results of the study, there are still complaints that there are still people without jobs and there are still very few jobs. Therefore, it is necessary to improve the coordination between the school and the world of work. It is also necessary to guide students' preparation for entering the world of work. This is related to self-preparation, the preparation of the basic skills required, the preparation of reading opportunities, and the preparation of the correct target area to make Keep in sync between all majors. With the work earned.

Education also plays a very important role in preparing people to face the various problems that may arise in the future wisely and wisely. For example, in terms of employment, certain sectors of the people's economy may decline or even disappear. An example is agriculture that still uses traditional methods. The role of education in handling this case can be reflected in various aspects. Training for the community, so that they have learned how to solve such problems well. The new capital plays a vital role in advancing Indonesia. In 2045, Indonesia will be 100 years old. The new capital city in East Kalimantan will become the cornerstone of the nation's government and economy. Therefore, the new capital city must be designed properly, so that smart cities can be implemented correctly and produce superior human resources, for instance: electronic human resource management (e-HRM), so that Indonesia is advanced.

The results show that 43.8% of people are still worried about competing with immigrants to find a job. This shows that there are still many people who need training and other preparations to compete with anyone who is preparing. As many as 56.3% of the communities also strongly support the improvement of a better education system in East Kalimantan to support all aspects of residents, especially in finding jobs.

In the province of East Kalimantan destined to host Indonesia's future capital (IKN Nusantara) the urgency of fortifying cyber defenses and fostering digital competencies among public servants has never been greater. As district offices and municipal agencies progressively shift their administrative processes into online environments in support of IKN's overarching "smart city" ambition, safeguarding citizens personal information becomes a cornerstone for maintaining public confidence.

By adopting the internationally recognized ISO/IEC 27001 standart throughout East Kalimantan's government IT infrastructure, local authorities can institute a comprehensive information security management system. This framework mandates the establishment of formal security policies, systematic risk assessments, and recurring third party audits to ensure thath highly sensitive records ranging from national identity numbers and land use permits to detailed health data are protected with industry leading control.

Embeding Privacy by Design principle at the very inception of IKN's e-Governance platform developtment further ensures that privacy is not bolted on as an afterthought but is instead woven into every layer of system. Key measures include enforcing end-to-end encryptions for all electronic transactions and document exchanges, strictly limiting database access via role-based access controls, and practicing data minimization to collect and retain only the information absolutely necessary for service delivery. To uncover latent vulnerabilities before they can be exploited by malicious actors, East Kalimantan 's cyber defense teams should collaborate with national cybersecurity agencies to conduct regular ethical hacking and red teaming exericies. Such proactive testing combined with biannual external security assessments will significantly bolster the resilience of IKN's digital ecosystem.

Education also plays an important role in the correct operation of smart city plans. However, there are still 25% of people who do not understand the term smart city. Therefore, the government needs to provide the public with information on the socialization

and other positive aspects of the smart city plan, and what preparations must be made so that everything the government plans for the plan can proceed smoothly and receive positive responses from the community.

CONCLUSION

This transformation process has a multidimensional impact on the local community, as evidenced by the findings of ethnographic research on the suitability and implications of relocating the capital city of Indonesia (IKN) to East Kalimantan in accordance with a smart city model. There is a significant amount of community enthusiasm for employment growth and development opportunities. However, this enthusiasm is counterbalanced by apprehensions about the potential for social conflict, competition with immigrants, and the risk of marginalising local communities and destroying livelihoods because of the construction of new infrastructure.

Furthermore, there is still a disparity in community readiness in terms of the utilisation of technology and education, particularly in rural and border regions. The optimisation of the benefits of a smart city, particularly in the implementation of e-governance, e-marketing, e-learning, and e-smart city, is potentially impeded by the persistent inequality in the quality of education and low technological literacy. The survey results indicate that most of the community is in favor of enhancing the education system and skills training in order to enhance competitiveness in the face of accelerated socio-economic changes.

This study underscores the necessity of enhancing cybersecurity infrastructure and personal data protection in the context of digital governance and security. In the era of digitalisation of public administration, the implementation of international standards such as ISO/IEC 27001 and the Privacy by Design principle is a critical foundation for preserving public trust in government digital services and averting potential data leaks.

In general, the success of smart city based IKN development is significantly influenced by the synergy between human resource readiness, equal access to education and technology, socio-economic protection of local communities, and the strengthening of digital governance and security. To guarantee that the transition to a sustainable smart city is truly beneficial to all facets of society, the government must guarantee that the process of socialisation, training, and community empowerment is inclusive. This must be achieved without excluding vulnerable groups from the destination areas for the capital city relocation.

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