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Strengthening urban governance: Digital transformation through the development of electronic-based government systems to create smart cities in Malang City

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Abstract

The complexity of urban governance issues more complex than non-urban issues. The problem in Malang City is interdependence, artificial, dynamic governance. Integrated data management between Local Government Organizations in improving public services in Malang City has been a strategic issue in related to institutional arrangements, public services, poverty, informal sector marginalization in urban areas that need utilize information technology towards sustainable urban development. The problem of governance in terms of implementations and services to the community, as well as community participation to government programs. This research aims to examine of smart change through government innovation and efficient, effective, transparent of public service and integrity digital transformation. The research method applied in this study is a descriptive qualitative method with primary data collection techniques obtained through direct observation, interviews, and documentation. Secondary data from literature, previous research, information either the internet or data obtained in the field related to this research. The results of this research, the effort to strengthen Malang is committed to realizing a smart city, when viewed from the development of an electronic-based government system (SPBE) and integrative policies based on the principles of good urban governance, it has been going well even though SPBE continues to be developed in stages. This is strongly supported by city leaders who are more exposed to many innovative practices in both urban governance and public service development by repeating existing practices with different approaches, taking a holistic approach to development, and exploring innovative policies and practices in integrated solutions.

Keywords

Urban governance, Digital transformation, Smart cities

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Introduction

The purpose of this research is to find out how the Malang city government's strategy is in strengthening governance to realize the digitalization of public services. the complexity of urban governance issues which are more complex than non-urban issues [1] and developments in urban governance management need to adapt the developed model to a new model that includes two main dimensions the urban context and technological interactions with urban actors [2]. The problem in question is a problem of interdependence, subjective, artificial and dynamic [3]. Integrated data management between Local Government Organizations in improving public services in Malang City has always been a strategic issue. The strategic issues in question are issues related to institutional arrangements, public services, poverty, marginalization of the informal sector in urban areas that need to be managed properly, measurably and utilize information technology towards sustainable urban development [4]. In every city governance towards a successful smart city is closely related to the perception and use of technology throughout the city government of the city [5]. The idea is that the usefulness of technology for improving urban governance in the smart city space can only be enhanced by studying the interactions between urban technological innovation and governance processes in specific urban contexts [6].

Digital transformation of electronic-based government systems (SPBE) is one way for the government to improve efficiency, transparency, and accountability in the delivery of public services. The implementation of the Innovation Policy in the Implementation of Electronic-Based Government Systems (SPBE) in Dumai has been running quite well. The obstacles that exist, namely: limited human resources who have ICT technical expertise, application systems that have not been integrated and lack of budget support for the development of SPBE-based innovations [7]. The implementation of SPBE in Indonesia has not been fully successful because there are still many obstacles such as lack of infrastructure, unskilled human resources, and data security issues. Therefore, this study recommends the need to improve infrastructure and increase human resources in government to support SPBE digital transformation [8]. The successful implementation of SPBE digital transformation in Indonesia still faces many obstacles such as lack of understanding of technology, data security issues, and lack of support from stakeholders. However, this study also found that SPBE digital transformation can help the government in improving bureaucratic efficiency, increasing transparency and accountability, and increasing public participation [9]. Digital transformation of SPBE can help the government in providing better public services and increasing public participation. However, this study also found that there are challenges in the implementation of SPBE digital transformation such as lack of support from stakeholders and lack of coordination between relevant government agencies [10].

The implementation of SPBE digital transformation can provide many benefits such as increased bureaucratic efficiency, public accessibility to public services, and better public participation. However, this study also found that SPBE digital transformation

must be balanced with improved policies and governance systems in order to achieve maximum results [11]. In the context of Malang City, there are at least four urban problems that have started to occur in Malang City. First, building density, potential building density and contributing to narrowing, blockage and not optimal drainage. As well as the reduction in land and cementing (hardening) of the land due to buildings. Second, the increase in population, in the city of Malang every year there is an increase in population of 1.58%. At the end of December 2019, the population of Malang City was recorded at 881,794 people. Meanwhile, until the end of April 2020, the population of Malang City was 887,443 people. Third, Malang is a city of Education. Fourth, Congestion is actually one of the implications of the increasing population in Malang City which has an impact on increasing the volume of vehicles in Malang City. One of the congestion locations in Malang City is located on Jalan Soekarno Hatta where the volume of vehicles with this type of motorbike reaches 4802 pcu/hour and private cars is 3887 pcu/hour.

In this regard, this study aims to look at contextual factors in influencing city governance through institutional transformation towards a smart city [12]. The function to improve urban governance must be closely linked to the real needs of various urban actors and existing governance practices [13]. More specifically, this research wants to emphasize the hidden role of potential local institutional knowledge and the nature of problem domains in shaping technological interactions with urban actors, including political or demographic factors, administrative culture, and technological factors in the governance structure of smart cities. In particular, the urgency of this research wants to see the efforts of Malang City Government Innovation in realizing a smart city. More specifically, this study wants to reveal six contextual factors, namely institutional arrangement factors, political leaders, demography, bureaucratic culture, technology, community participation and the urban factor itself. the influence of contextual factors on urban governance empirically becomes a supporting factor for institutional development of cities.

Method

To describe urban governance innovations through institutional transformation or the use of information technology to explain urban technological innovations and urban governance processes through the development of an electronic-based government system in Malang City, the study used a qualitative approach by Creswell [14] with Source of data from primary data and secondary data. Primary data will be sought through key informants, government leaders as leaders and the Office of Communication and Information as technical implementers of digital institutional transformation. While the secondary data used in this study were obtained from the results of a literature study of books and journals related to city government and smart city innovation, government documents related to policies both Malang city government regulations, regional medium-term development plan (RPJMD) and strategic planning, as well as supporting data in the system integration process.

The data collection technique in this study used three stages, (1) observation, the researcher observed directly the condition of city governance and community services and the dynamics of information technology system development, (2) Interview, the researcher conducted interviews with key actors as subjects to explore institutional innovation and efforts to achieve a smart city, (3) Documentation, researchers will dig up document data that can support the objectives of this study related to policies, both Malang city government regulations, RPJMD and strategic plan, as well as supporting data in the system integration process. While data on urban governance innovation is analyzing based on Creswell data analysis techniques, namely interpreting interview and observation data, coding data as a processing information about Digital Transformation through the Development of Electronic-based Government Systems in Malang and making conclusions.

Results and Discussion

Driving Force: Integrative Policies and SPBE Program in Malang City

The policy regarding electronic-based government systems in Malang City is contained in Regulation No. 55 of 2019 concerning Governance of Electronic-Based Government Systems. The policy aims to increase the efficiency, effectiveness, transparency and accountability of Malang City government administration. To realize this, the City Government of Malang increases the provision and access to information on technology-based public services and improves the quality of administrative services to ensure that governance and public services are carried out effectively and efficiently.

In addition, the electronic-based government system that has been developed by the Malang City government aims to ensure that there is an integrated service system, synchronization and synergy of service application data for better service improvement. The forms of electronic-based services in Malang City are described in Table 1.

Table 1. Electronic-based services in Malang City

No	Regional Devices	E-Government
1	Population and Civil Registration Agency	PaHe (Saving package)
2	Income Office Region	SIMPATDA (Regional Income Information System)
3	Public Health Agency	Siknas Online, P-Care BPJS Health
4	Women's Empowerment, Child Protection, Population Control and Family Planning Agency	E-PDRT for complaints of domestic violence
5	Regional Employment Agency	SIMPEG (Personnel Information System)
6	Malang City Police	Panic Button
7	Transportation Agency	Area Traffic Control System (ATCS) dan Road Transport and Trafic Information Center (RTTIC)
8	Communication and Informatics Office of Communication and Informatics	Malang Comand Center (MCC), Sambat Online

Source: Data processed by researchers from various sources

The development of an Electronic Based Government System (SPBE) in the regional apparatus organization is a process of government program activities that use information technology media and is carried out by OPD which has the capability to change government relations with citizens, businesses and others, an extension of the government's hand has the potential to lead to better community participation and engagement. In particular, the Malang City appointed several human resources as the management team and it was ratified through a Decree of the Head of Service. This certainly shows that aspects of human resource development to support SPBE in Malang City have been fulfilled. In addition, regular human resource competency enhancements are also carried out both in terms of quality and quantity.

SPBE developed by the government of Malang city is one way for the government to take advantage of new technology to provide the public with easier access to government information and services, as well as improve service quality and provide greater opportunities to participate in an institution and also participate in the process democracy. Several aspects have been developed in implementing an integrated SPBE such as ICT infrastructure, human resources, service applications, as well as policies. To find out how the achievements of e-government implementation, the government has conducted ICT monitoring and evaluation of all regional apparatus and work units.

The SPBE development was developed in various applications and on the web, which made it easier for the Malang city government to enter data, as well as make it easier for the public to access. Online-based applications used by the Malang city government and agencies such as the ASN Management Information System (SIMAS) have legitimately assigned the Regional Personnel Agency to carry out supporting functions for regional government affairs in the field of staffing. The main objective in providing ASN management information system applications (SIMAS) is to provide a platform that can facilitate the challenges of developing information technology by increasing the performance and competence of the state civil apparatus in Malang City Government, context. In addition, the Integrated Online Asking Community Application System (SAMBAT online) is based on Malang Mayor regulation No. 46 of 2012 regarding online-based complaint systems. Those who carry out their duties, functions, are managed by the Communication and Information Service Agencies to manage complaints originating from service recipients and follow up on the results of complaint management, and are obliged to announce the name and address of the person in charge of complaint management and the complaint facilities provided. The implementation of this complaint system is motivated by the condition of public services in Malang City which has not experienced improvement based on the Ombudsman's assessment of public services in Malang City for the last 3 years which are included in the yellow zone.

Procurement General Planning Information System (SiRUP), which is organized by the Communication and Information Service (KOMINFO) through the socialization of Presidential Instruction No. 1 of 2015, Presidential Decree No. 4 of 2015 and an electronic procurement system that discusses the electronic procurement of goods and services

which aims to facilitate budget users in declaring an RUP that is accurate, transparent and responsible, which is embodied in e-procurement. Management and Education System (SIMDIK). In this case, the Malang city government disseminated Malang Mayor Regulation Number 45 of 2019 concerning the Implementation of Anti-Corruption Education to inculcate anti-corruption behavior as early as possible, and the government has the responsibility to implement it. SIMDIK is a complete web-based application or enterprise for school administration management which is carried out starting from the acceptance of new students (PPDB), data collection (students, teachers, subjects, lesson schedules), operational teaching and learning activities in financial management, to reporting.

Integrative policies are policies that are designed to address complex and interrelated issues through the integration of different policy areas and stakeholders. The use of SPBE can play an important role in the implementation of integrative policies, as it allows for the integration of information and communication technologies (ICTs) into the policy-making process. Integrative policies require collaboration between different policy areas and stakeholders. SPBE can facilitate this collaboration by enabling the sharing of information and data across different departments and agencies, as well as with external stakeholders. This can lead to a more holistic and integrated approach to policy-making. Integrative policies require transparency and accountability to ensure that all stakeholders are involved in the decision-making process and that policies are implemented fairly and equitably. SPBE can facilitate transparency and accountability by providing real-time access to information and data, as well as enabling stakeholders to participate in the policy-making process through online consultations and feedback mechanisms.

Political Will and Ecosystem of Information and Communication Technology in SPBE

Technological innovation in the city of Malang is institutional in nature in the sense that technology and institutional arrangements develop in a mutually specific process. This is reflected in the government's commitment through institutional arrangements, building mindsets to improve the skills of the state apparatus in order to increase technological knowledge. adoption and utilization of new technologies as well as changes in the routines, collaborations and roles of Malang city government actors. Political commitment and support from city leaders and relevant stakeholders are essential in improving city governance. The government must have a strong political will to reform urban governance, including in terms of transparency, accountability, public participation, and good financial management. This can be demonstrated by concrete policies and programs that support the improvement of city governance.

In line with the direction of Industry 4.0, digitalization and the development of the smart city concept have indeed become one of the mainstay programs of the Malang City Government. The mayor has commitment as the top leader is very concerned about digitizing governance and improving public services. This political will is manifested

through various innovative steps contained in policies, especially in efforts to realize Malang as a Smart City with digital application innovations as well as to improve the Electronic-Based Government System (SPBE). Based on an evaluation from the center, Malang City's SPBE index is currently 2.85 (Good) and next year we target the score to increase to 3.85, and the increase in the achievements of a number of indicators for the electronic-based governance system (SPBE) index from 3.00 (2019) to 3.39 (2020) and an increase in the achievement of the SPBE service index from 2.97 (2019) to 3.9 (2020). This shows that the digitization of government in Malang City is carried out seriously. Smart governance that has been echoed by the Mayor of Malang, is targeted to be realized in 2022. So that people can more easily and quickly access various public services.

In addition, the sectoral database is also a second strategic issue that will continue to be strengthened. An up-to-date and valid database is very important as a pillar for making regional development policies, from planning to evaluating the implementation of regional governance. Therefore, weaknesses in data availability in the past must be completely answered. The Communications and Informatics Service as the leading digitalization sector will also strengthen policy communication and regional potential through the pentahelix approach, including increasing harmony and cooperation with universities, media people, community information groups, even social media influencers/activists as an effort to support regional policy synergies and constructive two-way communication. In line with what was stated by Janowski [15] that the application of technology in cities must be contextualized by taking into account the importance of local specificities and certain settings, because context is what allows technology to work. As such, the function of improving urban governance must be closely linked to the real needs of various urban actors and existing governance practices.

The government institutional factor is a bureaucratic culture that can support the goals of problem solving and institutional arrangement through various innovations, besides that the capability of policy implementers as the leading sector in realizing smart cities to achieve sustainable city development is a requirement for the government to execute policies and provide public services by utilizing the latest technological developments. The transformation and integration of urban technology innovation into urban governance in the smart city realm must consider the specific urban context. This context refers to the circumstances or situations that form the setting for sociotechnical interactions between urban technological innovations and urban governance processes, and in terms of which they can be fully understood and assessed.

Conclusion

In strengthening digital-based urban governance, the Malang city government is committed to developing an Electron-Based Government System, namely by developing digitalization of services for each regional's apparatus. Through Political Will Mayor of

Malang with Regulation No. 55 of 2019 concerning Governance of Electronic-Based Government Systems. The policy aims to increase the efficiency, effectiveness, transparency and accountability of the Malang City government administration. This policy is realized in the implementation of institutional governance and public service applications in each regional apparatus. The strategy for strengthening governance in the city of Malang in realizing the implementation of digitalization of services and institutional governance is by training personnel resources, increasing technology skills, developing information technology infrastructure and expanding networks to facilitate public access to services. The implications of digital transformation in strengthening urban governance are as an effort to support regional policy synergies and constructive two-way communication and accelerate the integration of various public service information systems spread across various regional apparatuses.

Despite the potential benefits of using SPBE in integrative policies in Malang, there are also potential challenges that need to be addressed. These include issues related to data security, privacy, and accessibility. There may also be resistance from stakeholders who are unfamiliar with or distrustful of technology, as well as challenges related to the integration of different systems and platforms. Integrative policies and SPBE can work together to achieve more effective and holistic policy outcomes. By enabling collaboration, improving efficiency and effectiveness, promoting transparency and accountability, and addressing potential challenges, policy-makers can leverage the power of SPBE to enhance integrative policies and improve governance.

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