

E-Government Innovation in Bandung City during the Covid-19 Pandemic

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Abstract

The application of e-government in providing services to the community is ongoing in different agencies of the State Civil Apparatus, as such agencies already use technology in their activities, especially in recording employee attendance, because of the benefits of time efficiency and better performance by employees. During the Covid-19 pandemic, work was very dependent on the mechanism of e-government (virtual work system), since the previous face-to-face work system was no longer possible. In this regard, the State Civil Apparatus of Bandung City adopted new habits. These new habits came with several challenges: (a) frequent network downtime, (b) error signal, (c) no quota, (d) stuttering technology, (e) system equipment that is out of sync, and (f) the need for continuous improvement of the system. A rotating work system was scheduled to ensure that there are no gatherings of people that would cause the spread of the virus. This requires cooperation and adaptation to the new patterns in performing the tasks and functions of the State Civil Apparatus, especially for those who interact directly or face to face with the community. The research objectives are to (1) create an integrated e-government model that facilitates the operation of the State Civil Apparatus, (2) collect information and data related to the suitability of the model applied by the State Civil Apparatus of Bandung, and (3) find a formula or theory that can make it easier. This research is qualitative research with a case study approach.

Keywords: State Civil Apparatus, E-government, Performance, Innovation, Covid-19 Pandemic



Introduction

The development of communication technology has changed the dominant communication paradigm, which was previously a one-way communication between the government and the community. Technological advances in communication can ultimately expand the opportunity for a two-way communication between both parties. This has led to a transformation of the government's working mechanism with respect to managing information and communication strategies (Aini H et al., 2019).

E-government has the benefits of time efficiency and improved performance of employees. Therefore, the State Civil Apparatus of Bandung City has commenced the implementation of e-government with the use of technology, especially in overseeing the activities of employees (Abdurahman & Prasetyo, 2018).

An aspect of e-government is the Electronic Performance Remuneration (E-RK) system, which is a performance appraisal system that can measure employee performance every month, to be used in distributing benefits (Setiawan, 2011). Through electronic-based performance assessment, the State Civil Apparatus is expected to provide improved services to the community. Presently, the community has a negative perception about the performance of the State Civil Apparatus. The society demands optimal public services from employees. Also, evaluations carried out on government agencies indicate poor employee performance (Abdurahman & Prasetyo, 2018).

During the COVID-19 pandemic, the social distancing policy caused a change in the system of work, from face-to-face to virtual work system. The new system has its own challenges: unreliable network, signal errors, no quota, technology stuttering, system devices that are not in sync, and the need for continuous system improvements (Indrajit, 2019).

The new work system requires cooperation and commitment by everyone. To prevent the spread of the virus, a work schedule that involves employees taking turns to prevent many people from being together was implemented. Therefore, the main tasks and functions of the State Civil Apparatus were implemented by virtual work system, especially those that involve direct interaction with the public (Muflihah & Susanto, 2017).

E-government (electronic government) is the use of the internet in disseminating information and government services to the public. The implementation of e-government, which is also known as digital government or online government, has been proven to facilitate digital interactions between the government and the public (Nurita, 2014). The most expected benefits of e-government are increased efficiency, convenience, and easier accessibility to government services for the public. Also, e-government provides opportunities for improving the quality of government services to the community through increased transparency, control, and accountability in government administration. Another benefit of e-government, if managed properly, is opening up opportunities for the

community to dialogue, participate, and be motivated as government partners in the process of making public policies. The public, which was previously passive, can be turned into an active party in giving and receiving information (Kurniasih, 2016).

The use of e-government during the Covid-19 pandemic enhanced government performance. Due to the enactment of PSBB (Large-Scale Social Restrictions), the State Civil Apparatus are required to work from home (Wijayanti & Subowo, 2016). Thus, various public services are carried out online (e-government). However, this has some shortcomings as the effectiveness of delivering information or messages is affected due to the lack of direct interaction or communication (face to face) between the government and the community. In this regard, a communication theory (social information processing theory) is needed to strike a balance between the use of e-government (computer-mediated-communication, CMC) and direct communication (Griffin, 2011).

According to Indrajit (2004), there are at least six important components that must be considered in the implementation of e-government, including "content development, competency building, connectivity, cybers laws, citizens interfaces, and capital". Another definition of e-government according to Sutanta (2004), in his book entitled Management Information Systems, is the use of information technology to improve relations between the government and other parties, which results in new forms of relationship between government and society as well as government and businesses or entrepreneurs.

Meanwhile, performance is the result of work in quality and quantity achieved by an employee in carrying out his duties in accordance with the responsibilities given to him. High and low performance of workers is closely related to the reward system applied by the institution/organization where they work. Giving inappropriate remuneration can affect a person's performance (Mangkunegara, 2001).

The performance of new employees is measured through the results of their work, according to Villanova et al. (1993). They revealed that there are six main criteria that can be used to measure performance: (1) Quality: The extent to which the process or result of carrying out an activity is close to perfection, both in terms of adapting to the same ideal way of carrying out the activity or fulfilling the purpose of the activity in question. (2) Quantity: The amount generated, expressed in various terms, such as dollar value, number of units, or activity cycles completed. (3) Punctuality: The extent to which an activity is completed, or the results produced, at the earliest possible time desirable from the point of view of both coordinating with the results of others and maximizing the time available for other activities. (4) Cost effectiveness: The extent to which the use of the organization's resources (e.g., human, monetary, technological, material) is maximized in terms of obtaining the highest profit or reduction of losses from each unit or instance of resource use. (5) Need for supervision: The extent to which the performer can perform the job function without having to ask for supervisory assistance or require

supervisory intervention to prevent an adverse outcome. (6) Interpersonal impact: The degree to which a player promotes the feelings of self-worth, goodwill, and cooperation between coworkers and subordinates.

From this description, this study formulates the following problems: (1) Is there an e-government strategy in improving the performance of the State Civil Apparatus in Bandung? (2) What are the theoretical models of e-government and communication theory that take into account the integrated protocol of Bandung State Civil Apparatus? (3) Is there any improvement in the performance of the State Civil Apparatus with this new work pattern and system? Therefore, the research objectives are to (1) create an integrated e-government model that facilitates the activities of State Civil Apparatus, (2) collect information and data related to the suitability of the model applied to the State Civil Apparatus in Bandung, and (3) find a formula or theory that can make it easier.

This research is expected to be useful in improving the performance of the State Civil Apparatus through the use of virtual work system. E-government increases speed and accuracy as well as helps in performance measurement. Although network constraints are sometimes a challenge, they are not an obstacle. Therefore, the benefit of this research is the improvement of employee performance, especially during the COVID-19 pandemic.

Method

This research uses the qualitative research method with a case study approach. With the use of qualitative analysis, case studies were carried out. Data were obtained by observation and interviews.

At the initial stage, pre-field analysis was conducted on the data from the preliminary study, or secondary data, related to the research focus (Moleong, 2007). Analysis while in the field uses the "interactive analysis" model by Miles and Huberman, which consists of three streams of activities that occur simultaneously, namely data reduction, data presentation, and conclusion drawing/verification (Creswell, 2019).

The data collection techniques used in this research are as follows: (1) Literature study to obtain data by conducting searches and reviewing literature related to the problem to be studied. (2) Field Study: the locations of this research include the Personnel, Education and Training Agency of Bandung City; Bandung City Research Development Planning Agency; Bandung City Industry and Trade Service; Buahbatu District; and Commission A DPRD Bandung City. (3) Observation: field research was carried out by direct observation of the object to be studied, namely by participant observation techniques. Data collection was carried out by conducting direct observations on the units of analysis. (4) In-depth interviews were conducted on all units of analysis, including Heads of Service, Secretary of the Agency, and to Heads of Divisions. (5) Focus Group Discussion (FGD) was conducted to confirm the data from various units of analysis. The resource persons were the Head of the Bandung City Personnel, Education and

Training Agency; Head of Bandung City Research Development Planning Agency; Head of Bandung City Industry and Trade Office; Subdistrict Head of Buahbatu; and Chairman of Commission A DPRD Bandung City.

Primary data were obtained from the following: (1) Key informants in this study, including the Head of the National and Political Unity Agency; Head of the Bandung City Personnel, Education and Training Agency; Head of the Department of Cooperatives, Micro, Small and Medium Enterprises in Bandung City; and the Sub-district Head of Buahbatu. (2) Informants, including Operators at the Bandung City Personnel, Education and Training Agency; Operators at the Bandung City Research Development Planning Agency; Operators at the Bandung City Industry and Trade Service; Operators in Buahbatu District; and Operators at Commission A DPRD City of Bandung. (3) Documentation study, which was used to collect data that were not obtained through interview or observation. The author's documentation was done by collecting and studying the happenings in the field.

This study tested the implementation of e-government in different institutions: (1) Technical Institutions, represented by the Bandung City Education and Training Personnel Board and the Bandung City Research Development Planning Agency. (2) Autonomous Agencies, represented by the Bandung City Department of Industry and Trade. (3) Territory, represented by Buahbatu District and Commission A DPRD Bandung City.

Research Result

Content Development

Table 1. Benefits of e-Government

<p style="text-align: center;">Memo: Benefits of e-government</p> <p>E-government is very helpful to today's workers; it is a modern government administration mechanism that provides convenience and efficiency in government administration. However, there are challenges facing the use of e-government.</p>

The memo above is based on the results of the researcher's interview with four informants, who stated that the use of e-government in conducting government activities is very helpful to state civil servants. This is especially true in the current state of the Covid-19 pandemic, which requires workers to adapt to the use of digitalization. Nonetheless, the e-government system is not optimal due to the several challenges mentioned earlier.

Table 2. Development of e-Government System

<p>Memo: Development of e-government system</p> <p>The development of the e-government system in each agency is carried out in different ways. The system is often modified to adapt to changes in regulations. Also, e-government development is carried out continuously to achieve ideal adaptation to community aspirations.</p>
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The memo above is based on the results of the interview between the researcher and four informants. The informants stated that the development of the e-government system was carried out in different ways. There are those that annually develop according to regulatory changes. Also, some systems are developed independently by each regional apparatus, so the integration process becomes the next PR task. The Bandung City government already has more than 400 applications developed by each SKPD.

Table 3. Standardization of e-Government System

<p>Memo: Standardization of e-government system</p> <p>Not all agencies have standardized e-government system. However, the Bandung City Information and Communication Service has standardized the system of e-government, such that there is effective application.</p>

The memo above is based on the results of interviews with four informants, who stated that the Bandung City Communication and Information Office has a standardized e-government system. However, other agencies have not yet provided a standardized system.

Competency Building

Table 4. Knowledge of e-Government

<p>Memo: Knowledge of e-government</p> <p>Knowledge of e-government can be obtained easily through training organized by the agency itself, the use of information technology, electronic media and news.</p>

The above memo is based on the results of interviews with four informants, who stated that knowledge about e-government can be obtained in various ways according to the steps of each agency. Most agencies employ electronic media and information technology in disseminating knowledge about e-government. However, there are trainings organized by the Education and Training Personnel Agency (BKPP) and the Department of Communication and Information

(Diskominfo) of Bandung City.

Table 5. Training on e-Government Content

Memo: e-government content training

Training related to e-government content in the workplace is carried out by providing technical guidance at each agency

The memo above is based on the results of interviews with four informants, who stated that in the workplace, each agency provides technical guidance, training and collaboration with lecturers of universities and information technology educational institutions related to e-government development training.

Table 6. Competency Development

Memo: Competency development

Competency development by leaders in each agency is good and needs to be improved

The memo above is based on the results of interviews with four informants, who stated that competency development already has certain standards and needs to be improved in order to enhance services to the community.

Connectivity

Table 7. Supporting Infrastructure

Memo: supporting infrastructure

The existing infrastructure is sufficiently supportive and adequate with regards to the computer and network devices that are already available

The memo above is based on the results of interviews with four informants. They stated that the supporting infrastructure in each agency is adequate and just needs to be updated and developed according to current needs.

Table 8. Supporting Infrastructure Constraints

Memo: supporting infrastructure constraints

There were constraints associated with the supporting infrastructure, but these obstacles were not impossible to solve

The memo above is based on the results of interviews with four informants, who stated that there were still problems with the supporting infrastructure, such as overloading of the server or internet network constraint. However, the problems can be resolved because each agency has an IT operator who is an expert in that field.

Table 9. How to Solve Infrastructure Problems

Memo : How to solve infrastructure problems

If there are problems with supporting infrastructure, improvements and developments should be carried out, and this must be included in the next work plan as a priority

The memo above is based on the results of interviews with four informants, who stated that infrastructure problems can be solved by checking, repairing, developing and evaluating problems that arise. There should be coordination with experts in the required field to handle the problem.

Cyber Laws

Table 10. Legal Protection in Cyberspace

Memo: Legal protection in cyberspace

Legal protection exists in cyberspace through laws and regulations, such as the ITE Law, but there are still employees who do not know about this.

The memo above is based on the results of interviews with four informants, who stated that legal protection in cyberspace is regulated by the Mayor's Regulation and Law Number 11 of 2008 concerning Information and Electronic Transactions, which regulate the principles and objectives regarding the use of information technology.

Table 11. Enrichment of the Work Process

Memo: Enrichment of the work process

Viewing content from other institutions is a form of enrichment in the work process. This is done by searching for data and information from the website

The memo above is based on the results of interviews with four informants, who stated that a form of enrichment in the work process is accessing data and information from other legal institutions' websites related to information needed for

problem solving in a job.

Table 12. Cyber Law Opinions

Memo: opinion about cyber law

Cyber laws include the ITE Law and the Information Disclosure Act, but in their implementation, improvements need to be made in order to adapt to the current situation.

The memo above is based on the results of interviews with four informants, who stated that effective laws of cyberspace are very much needed by the authorities to control access and avoid harmful use of the media.

Citizen

Table 13. HR Quality

Memo: HR Quality

The quality of the State Civil Apparatus human resources is currently a factor that must be improved, and there is also a need for human resource development.

The memo above is based on the results of interviews with four informants, who stated that there is still a need to develop human resources to improve quality service. This is in accordance with the current era of increasingly advanced information technology. Everything that is required to bring innovation for the advancement of public services is welcome.

Table 14. HR Procurement Process

Memo: HR Procurement Process

The HR procurement process is carried out in stages and the regions are still dependent on central procurement. In addition, the procurement of human resources is carried out through the open recruitment of CPNS.

The memo above is based on the results of interviews with four informants, who stated that the HR procurement process is carried out in accordance with the procurement by the central government. The recruitment process is carried out by taking into account the proposals of all agencies according to their respective duties and authorities.

Table 15. Development of e-Government Application Access Channels

<p>Memo: development of e-government application access channels</p> <p>The development of access to e-government applications is done by research and analysis on existing e-government applications.</p>
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The memo above is based on the results of interviews with four informants, who stated that the development of access to e-government applications can be done by research and analysis on existing e-government applications and the development of public service features that can be done online. However, the implementation has not been fully maximized because the integration process has not met expectations.

Interface

Table 16. Differences between Face-to-face and Virtual Work

<p>Memo: differences between face-to-face and virtual work</p> <p>Working face-to-face and working virtually have their advantages and disadvantages for different agencies</p>

The memo above is based on the results from interviews with four informants, who stated that working virtually saves time and can be done anywhere; it is also cost effective. Meanwhile, face-to-face work enhances coordination and communication; it makes it easier to communicate without any miscommunication. However, in practice, working face-to-face can trigger the spread of the Covid-19 virus during this rare pandemic. Likewise, with virtual work, there is lack of monitoring/supervision, communication is rather difficult, and working hours are irregular.

Table 17. Adaptation to the Digital World

<p>Memo: adaptation to the digital world</p> <p>Today's digital world must be handled wisely because, basically, digitization is a way to make data speak. All systems and application development must adapt to the digital world</p>
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The memo above is based on the results from interviews with four informants, who stated that adapting to the digital world must be optimized immediately because it is related to services to the community as everything follows the current digital era. Efforts must be made to improve knowledge and skills

regarding the digital world.

Table 18. System Concepts in the Workplace

Memo : system concept at work
The concept applied in the workplace is mostly the e-government system, which is implemented in accordance with the main tasks in the field.

The memo above is based on the results of interviews with four informants, who stated that the activities of the workplace is mostly carried out by e-government; however, not all work related activities use e-government.

Capital

Table 19. Infrastructure Procurement

Memo : infrastructure procurement
Infrastructure is considerably sufficient, but improvement is needed in the implementation of digitization

In providing infrastructure, the Bandung city government has made some achievements, and they take the issue seriously. There is considerable budget for the implementation of e-government.

Table 20. Funding and Content Provision

Memo: funding and content provision
The content is appropriate, but there is an issue related to HR

The memo above is based on the results from interviews with four informants, who stated that funding and provision of content were adequate, but there is a constrain of human resources, as some employees did not have adequate knowledge, so when a problem occurs, it was difficult to fix it.

Table 21. Provision for Maintenance

Memo: provision for maintenance
Some agencies have made provision for maintenance, but it is limited according to the amount of the budget

The issue of maintenance of infrastructure is under the OPD budget and is adjusted to suit the needs as well as the suitability of the main functions of the OPD, as the organizer of the regional government.

Results and Discussion

Advancements in communication technology has led to a situation where the public is now able to make inputs into government policies. This is because such advancements have changed the manner of communication between the government and public from a one-way to two-way communication. This has also led to changes in the government's information and communication strategies.

The current pandemic period demands that the implementation of government work is based on the e-government system. Therefore, the work system has changed from face-to-face to virtual, which has led to adaptation to new habits by the State Civil Apparatus of Bandung City. However, the results of the study show that various factors are needed to enhance the implementation of the e-government system, including content development, competency building, connectivity, cyber law/virtual world, citizens or society, face-to-face (interface), and capital.

Content Development

E-government content helps in the implementation of the State Civil Apparatus's main tasks and functions as well as encourages efficiency in carrying out tasks, which improves performance, especially during the current pandemic. Overall, the e-government system has been developed and is being implemented. In this regard, each regional apparatus (SKPD) annually adjusts the system based on regulatory changes and prevailing circumstances as well as evaluates the results to improve public services; an example of e-government system is e-musrenbang, which is a digital framework for local participatory planning at the community level. Until now, there is no standard for the development of e-government systems, but it is hoped that they can be integrated into existing applications and are easy, cheap, and fast.

Competency Building

Competencies that are built in terms of knowledge about e-government are obtained through the use of information technology, manual books on each application, and trainings organized by BKPP or Diskominfo as well as information from the mass media. Certain institutions conduct trainings related to e-government content, which involve formulation of performance standards as training materials

and prescribing technical guidance. This is done in collaboration with educational institutions in the field of IT (Information Technology) in an effort to improve the capabilities/skills of State Civil Apparatus for public services. The competencies built by the leadership already have certain standards and are carried out in stages, for example, the State Civil Apparatus obligation to fulfill 20 JPL regarding participating in education and training. This is meant to improve competence in public services.

Connectivity

Although the available connectivity and supporting infrastructure (such as computer and network equipment) are adequate to support the e-government system, improvements are needed; there is need for constant updates and development according to prevailing circumstances. The constraints or problems that arise related to supporting infrastructure are not too significant; only occasional traffic buildup or overload occurs on the server/internet network due to simultaneous use, but this can still be handled by the technical team/IT operator of each agency. Steps in overcoming supporting infrastructure problems include checking and evaluation of devices and servers/networks beforehand. If there are problems, then they need to be a priority in the next work plan in coordination with Diskominfo.

Cybers Laws

Legal protection in the virtual administration of government is achieved by the Mayor's Regulation and Law No.11/2008 concerning Information and Electronic Transactions (ITE Law), which regulate the principles and objectives of the use of information technology. Apart from the ITE Law, the cyberspace is also protected by the Information Disclosure Act and the Criminal Procedure Code. However, in its implementation, further improvements and elaboration of the law are needed to effectively regulate internet activities. This is to prevent the use of the internet in a way that can harm other parties, such as data theft, insults on social media, and others.

Citizen

The current quality of human resources needs to be improved in order to take advantage of the digital era. Digital literacy skills are very important for innovations in improving public services. The process of recruitment or procurement of human resources is carried out through open recruitment by CPNS in stages, taking into account the proposals of all agencies according to their respective duties and authorities.

Interface

There are differences between face-to-face and virtual work processes. Face-to-face communication makes it possible to see or assess gestures, and it is

easy to coordinate directly. Further, communication is easier among co-workers or between superiors and subordinates with face-to-face communication; in addition, work can be completed faster and supervision can also be carried out, but working face-to-face does not guarantee the safety of employees in this Covid-19 pandemic situation. Meanwhile, working online (WFH) can foster flexibility because work can be done anywhere notwithstanding distance. However, this model is dependent on IT and network readiness; also, it causes lack of supervision/monitoring of subordinates by superiors and requires competence and skill in carrying out tasks. Adaptation in the leap to the digital world is needed by the State Civil Apparatus because entering the digital world means that everything is based on online data. Attention needs to be paid to the structure of output requirements and data input processes; hence, systems or applications need to be developed. Moreover, education by leaders is very important, through face-to-face or virtual meetings. Conceptually, the e-government system is built through a series of processes, including planning, budgeting, implementation, monitoring and evaluation, reporting, and back to planning.

Capital

Infrastructure related to virtual work system needs to be regularly maintained. During procurement of infrastructure, adequate content should be ensured and the public needs should be considered. The budget for implementation and maintenance already exists, but it needs to be adjusted to suit the various activities or sub-activities.

Conclusion

E-government activities facilitate the implementation of the tasks of the Bandung City State Civil Apparatus. Especially, due to the current COVID-19 pandemic, local government officials are required to develop their capabilities in the IT field to enable them adopt e-government in conducting their main tasks.

The development of the new e-government system is carried out independently by each regional apparatus, so the integration process becomes the next challenge. The Bandung City Government has more than 400 applications developed by each SKPD. There should be continuous modification of such systems according to regulatory changes and prevailing circumstances. The public opinion should also be considered. In addition, the government is required to be proactive in paying attention to the performance of State Civil Apparatus and providing supporting infrastructure.

Standardization in the development of e-government systems means building/making an application that is easy, cheap, and fast, but until now, there is no standard. Standardization needs to be considered in e-government systems since the applications will be utilized by a very heterogeneous community. The ease of operation must also be considered while building an application. Also, it should not require expensive fees / large quotas for the user.

Knowledge of e-government can be obtained through trainings organized by the Education and Training Personnel Agency (BKPP) or the Department of Communication and Information (Diskominfo) of the Bandung City Government as well as the use of information technology. In addition, trainings are organized for MSMEs in Buahbatu District on the use of information technology to assist the marketing of home industry products. Diskominfo must be proactive in disseminating the concept of e-government by utilizing existing information technology or social media so that the public can find out about various existing government programs.

Legal protection in cyberspace is contained in the ITE Law and the Mayor's Regulation. Considering that cybercrimes are rampant today, it is necessary for the government to use more advanced technology in order to protect the public or trace cybercrime.***

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