



## A comparative study of regional government in Central Java, Indonesia, public service innovation capacity management model for regional government

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### ABSTRACT

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The objective of this study was to provide insight into the characteristics and approaches employed by regional governments in promoting innovations in public services. The present study employed a qualitative research methodology and comparative techniques to examine evidence obtained from specific regional governments in Central Java, Indonesia, namely Surakarta City, Banyumas Regency, and Pekalongan Regency. The analysis focused on Law No. 23 of 2014, which stipulates that regional governments in Indonesia are required to actively promote innovative practices in the provision of public services. Based on the public innovation management model, the development of public service innovation is determined by four main factors: (1) Innovative leadership; (2) Quality of the workforce; (3) System and structure; and (4) External influences. The empirical result shows that each regional government in Central Java has characteristics that are determined by five primary aspects: (1) Innovative leadership; (2) Regulation and policy; (3) Quality of workforce; (4) Organizational structure; and (5) external networks that should be supported by harnessing IT-based innovation management. Additionally, we proposed a prospective model for managing the capacity of public service innovation at the local level, which might potentially be adopted by other regional governments within Indonesia.

**Contribution/Originality:** The study offers three key contributions: understanding public innovation capacity in Central Java via regional government data, addressing gaps in Indonesian public innovation research, and proposing a novel capacity management model for sustained public sector innovation in the country.

## 1. INTRODUCTION

The enactment of Law No. 23 of 2014 on Regional Government has bestowed regional governments with the rights, powers, and responsibilities to administer their administrative affairs and address local concerns (Trisakti & Djajasinga, 2021). The Indonesian government sought to achieve the ideals of good governance in public administration and enhance the efficiency of public services through the implementation of regional autonomy. (Moonti, 2019).

It is crucial to be concerned since public bureaucracy has a considerable role in governing a state's administration; therefore, promoting effectiveness, efficiency, democracy, and clean government is a primary priority for states across the globe (Wahyurudhanto, 2020). However, the implementation of the bureaucracy system in Indonesia is still

insufficient. Furthermore, it is worth noting that inefficiency, ineffectiveness, corruption, collusion, and nepotism have become deeply rooted issues within the bureaucratic institutions of Indonesia (Hsieh, 2016; Turner, Prasajo, & Sumarwono, 2022).

The quality of Indonesia's state civil apparatus is still lagging behind other Southeast Asian countries (Capt, Bahtiar, Alfian, & Yusriadi, 2019) and tends to be uncompetitive to adapt against disruptions, notably in mastering skills in harnessing the advancement of Information, Communication, and Technology (ICT) (Faedlulloh, Maarif, Meutia, & Yulianti, 2020; Meilani & Hardjosoekarto, 2020). This implies that the effectiveness, efficiency, and competence of the public sector in Indonesia may not be on par with neighboring countries. This is a critical concern as it can impact the government's ability to provide essential services, maintain public trust, and drive economic development. Moreover, in the modern world, ICT plays a pivotal role in governance, service delivery, and communication. A failure to keep up with ICT advancements can hinder the government's ability to efficiently serve its citizens and address emerging issues.

The implementation of technology-based innovations, such as e-government, is essential in improving the delivery of public services to citizens, as emphasized by various researchers (Almahamid, Mcadams, Kalaldehy, & Al-Sa, 2005; Babullah, Dwivedi, & Williams, 2015; Chen & Aklkokou, 2020). Additionally, the requirement to develop e-government initiatives is stipulated in Article 12 (2) of Public Service Law No. 25 of 2009 and Article 14 (3) of Government Regulation No. 96 of 2012, which pertain to the implementation of the said law.

Harnessing and diffusing innovation in governance practices may influence the betterment of government effectiveness, as revealed by evidence examined by some scholars across the globe (see (Wang, Feng, Chen, Wen, & Chang, 2019; Wen, Deng, Zhang, & Chang, 2021; Zang, Xiong, Lao, & Gao, 2019)). This is where the Indonesian government is still grappling and scoring poorly. Should this subpar trend continue, would it be more challenging for the Indonesian government to attain the "World Class Bureaucracy" vision envisaged in the Grand Design of Bureaucratic Reform (*Peta Reformasi Birokrasi*) 2010-2025 promulgated in Presidential Decree No. 81 of 2010 concerning the Grand Design of Bureaucratic Reform 2010-2025? In this document, the Indonesian government declares a vision of "World Class Bureaucracy" to devise more professionalism in providing top-quality services to the public and promote democratic government through good governance practices by 2025.

However, with the aforementioned bureaucratic problems, attaining this grand vision would be challenging for the Indonesian government. Moreover, leaders in Indonesia's public sectors should be able to appropriately adapt their governance practices to face the unprecedented volatile, uncertain, complex, and ambiguous (VUCA) conditions (Kolga, 2021; Krawchuk, 2018; Lawrence, 2013; Tamara, Maulidan, Alkatili, Musyaffa, & Husniyah, 2021) in the post-pandemic era. To surmount this, the public sector ought to devise continuous innovations in addressing the needs of the public (Criado et al., 2021).

Numerous previous studies have also shown that several aspects mainly determine key drivers of public sector innovations across the globe: (1) The role of leadership (e.g., (Kusumasari, Pramusinto, Santoso, & Fathin, 2019; Lewis, Ricard, & Klijn, 2018; Ricard, Klijn, Lewis, & Ysa, 2017)) (2) the Government's IT capabilities (e.g., (Criado & Gil-Garcia, 2019; Thambusamy & Palvia, 2020; Nasirin & Lionardo, 2021)) or even (3) Direct participation from the citizens as co-producers of innovations (Paskaleva & Cooper, 2018, 2019; Wirtz & Müller, 2021).

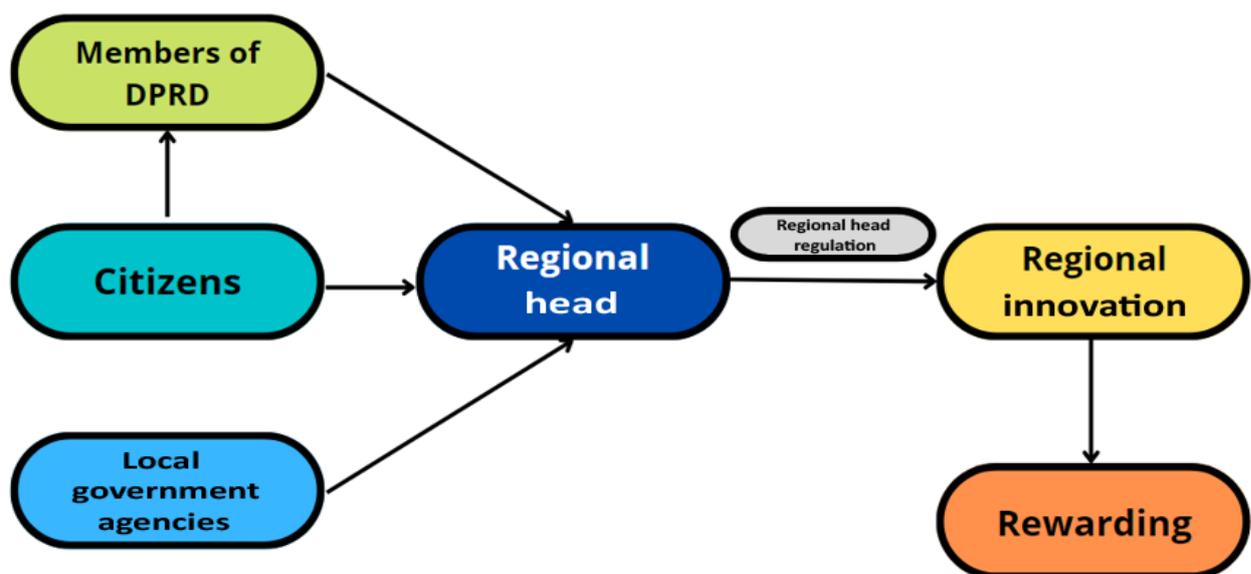
In this regard, Law Number 23 of 2014 concerning Regional Governance specifically mandated regional governments in Indonesia to improve their performance by fostering regional innovation in public services. Furthermore, in Article 387 of the Regional Autonomy Law, regional governments should adhere to eight principles in devising innovation policies: (1) Increased efficiency; (2) Effectiveness improvements; (3) Public service betterment; (4) No conflicting interests; (5) General public orientation; (6) Openness; (7) Meeting the values of obedience; and (8) Being responsible to the public interest.

Article 388 subsequently declares that initiatives to drive innovation can be proposed by the regional head, members of the regional parliament, local government agencies, and the citizens (Figure 1). In practice, innovation

initiatives from members of the regional parliament and local government agencies should be submitted to the regional head. Besides that, citizens can deliver innovation proposals to the Dewan Perwakilan Rakyat Daerah (DPRD) and regional governments. Afterwards, the regional head, as the executive, has the crucial role of establishing regional head regulations to formalize an innovation initiative as a regional innovation.

Besides that, the central government provides a rewarding system by granting incentive funds to local governments that successfully improve their governance through innovation and development. Several rewarding systems are included in public service innovation competitions, such as the Innovation Government Award (IGA) held by the Ministry of Home Affairs, the Public Service Innovation Competition (PSIC) held by the Ministry of Administrative and Bureaucratic Reform since 2014, and the Public Service Innovation Competition in Ministries, Agencies, and Local Governments (*Sistem Informasi Inovasi Pelayanan Publik/SINOVIK*) held by the Ministry.

The primary catalyst for driving advancements in Indonesia’s public sector is the implementation of Regulation of the Minister of Administrative and Bureaucratic Reform No. 30 of 2014, which outlines the guidelines for Public Service Innovation and sparked the creation of the Public Service Innovation Competition (PSIC). Regional governments’ innovations are evaluated by government ministries and agencies responsible for research and development, including the Ministry of Home Affairs, Ministry of Administrative and Bureaucratic Reform, Ministry of Research and Technology, and the National Research and Innovation Agency (NRIA). The Ministry of Administrative and Bureaucratic Reform is responsible for regulating and monitoring public sector innovations. To promote the development of public sector advances, the Ministry has established programs such as the public service innovation network and public service innovation coaching.



**Figure 1.** The procedure of public sector initiation in article 388 of law number 23 of 2014 concerning regional government.  
 Source: Article 388 of Law Number 23 of 2014 concerning regional government.

In our research, we want to show that the ways the Surakarta City Government, the Banyumas Regency Government, and the Pekalongan Regency handle public innovation capacity are different from what [Kim and Lee \(2009\)](#) proposed as a conceptual framework. Specifically, we explore four key dimensions that drive innovation: (1) The presence of innovative leadership; (2) The caliber of the workforce; (3) Organizational systems and structures; and (4) The influence of external factors. Our study delves into how these aspects manifest differently in these local government entities compared to the model outlined by [Kim and Lee \(2009\)](#) in their prior work.

Our study aimed to meet two goals. The first step is to go into more detail about the features of innovation capacity management based on [Kim and Lee \(2009\)](#) conceptualization model of management capacity and government innovation in Surakarta City, Banyumas Regency, and Pekalongan Regency . The second is to propose a best-practice

public innovation capacity management model as a development strategy to foster public innovations in Central Java and Indonesia.

Our study contributes to the literature in three regards. First, our evidence gained from Surakarta City Government, Banyumas Regency Government, and Pekalongan Regency Government enables researchers and policymakers to understand the characteristics of public innovation capacity management in the Central Java area. Second, our study contributes to the public innovation sector literature by addressing the sparseness of studies of public innovation capacity management in Indonesia. Third, our study begets a novel public innovation capacity management model that governments can further adopt in Indonesia to devise systematic, continuous public sector innovations in the future.

## 2. LITERATURE REVIEW

### 2.1. Understanding Regional Autonomy

The definition of regional autonomy in Law No. 23 of 2014 on Regional Government refers to the power, duties, and responsibilities of an Autonomous Region to manage and control local affairs independently, in accordance with the principles contained in Indonesian Constitution. From a political standpoint, the implementation of regional autonomy aims to amplify regional governments, increase the capability of civil state apparatus in regional governments and their citizens, and preserve national integration (Hadita, 2020; Zuhro, 2018). Instead of focusing on the number of incentive funds gained by regional governments, the core idea of regional autonomy lies in the term 'authority' owned by regional governments (Fauzi, 2019).

### 2.2. Defining Public Service Innovation

Research on public sector innovation has been ubiquitously studied in the realms of public policy, public management, and public administration in recent years (e.g., (De Vries, Bekkers, & Tummers, 2016; Demircioglu & Audretsch, 2019; Efendi & Cahyono, 2020; Hartley, Sørensen, & Torfing, 2013; Lapuente & Suzuki, 2020)). Put simply, the term 'public sector innovation' refers to actions conducted by the public sector to achieve public ends (OECD, 2017). Further, van Der Wal and Demircioglu (2020) state that public sector innovation pertains to 'managerial', 'administrative,' and 'process' to find new pathways for delivering public needs.

Spurring the development of public service innovation becomes critical since more innovative behaviour and products are needed for governments to work effectively in the 21<sup>st</sup> century (Brunetto & Beattie, 2020; Dickinson & Sullivan, 2014; Vivona, Demircioglu, & Raghavan, 2021). In practice, the government cannot work alone. Thus, it requires other stakeholders and networks to collaborate with. This networking collaboration can underpin innovation-related activities, especially in orchestrating plans based on strategic management. Collaboration management becomes crucial in attaining the goal of innovation and the government's strategic vision (Arundel, Bloch, & Ferguson, 2019; Chen, Yin, & Mei, 2018; Torfing, 2019).

### 2.3. Conceptualizing Public Innovation Capacity Management

According to the scholars (Amdam, 2014; Criado et al., 2021; Gascó, 2017; Gieske, Van Buuren, & Bekkers, 2016), innovation capacity should be the foundation for success in public innovation. This means governments should realize the importance of strengthening public innovation capacity to adapt to the changes ahead (Farazmand, 2009). Furthermore, public innovation capacity can be amplified by choosing the proper functional model of public innovation capacity to nurture public service innovation (Boukamel, Emery, & Gieske, 2019; Gieske et al., 2016).

This study made use of innovation capacity management model that Kim and Lee (2009) developed. As shown in Figure 2, government innovation is determined by innovation capacity management, which includes four primary factors: (1) Innovative Leadership; (2) Quality of Workforce; (3) Systems and Structures; and (4) Managing External Influences.

In order to delve deeper into these four characteristics, we will elaborate on them. The first characteristic, innovative leadership, involves taking action and committing to altering routines and established practices. To ensure that employees are comfortable with changes and can handle the uncertain future that innovation brings, clear communication is key. Innovative leaders should also exhibit an entrepreneurial mindset by taking risks and facing obstacles. However, in government, accountability can make officials resistant to change, leading to caution and rigidity.

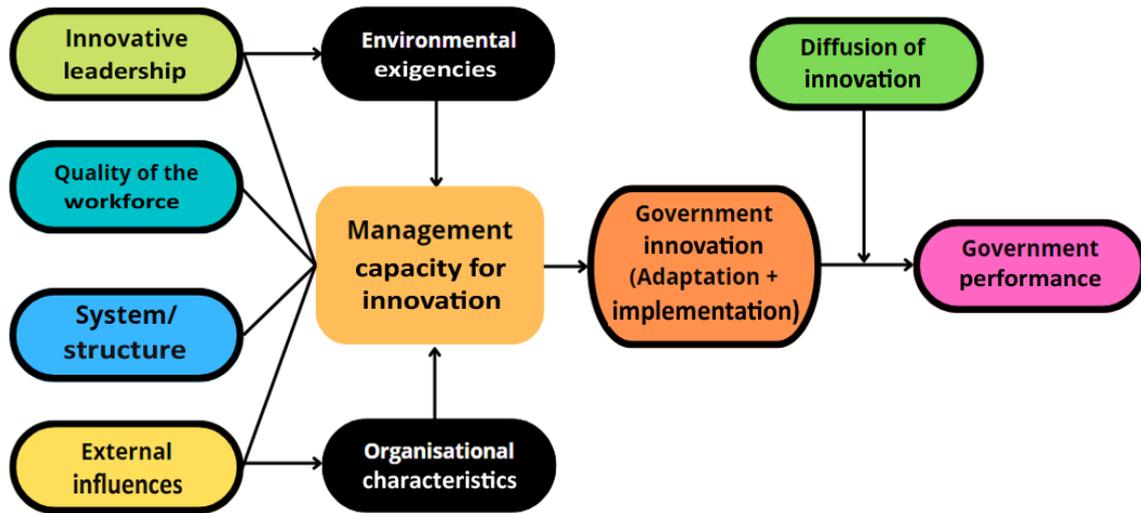


Figure 2. Model of management capacity and government innovation.

Source: Kim and Lee (2009).

Second, the quality of the workforce is essential since it is difficult to implement innovations successfully without employees' strong commitment to adapting to changes. Thus, numerous well-performing organizations need to encourage employee participation in producing innovation through transfer knowledge activities (Paton & McLaughlin, 2008; Wise, Paton, & Gegenhuber, 2012). Third, systems and structures (Chimaobi & Jacintha, 2021) encompass the team structure within the government to make proper decisions. Top managers often work directly with their employees and share substantial decision-making authority. Systems and structures must be considered due to the need to separate power and autonomy in running the government organization.

Fourth, there are external influences, typically brought about by politics and the political process. The advent of innovation and its implementation often depend on how the government manages its external environment effectively, notably in gaining political support for innovation (Courvisanos, 2009). In addition, both organizational characteristics and environmental exigencies are considered by Kim and Lee to influence the success of management capacity for innovation before adapting and implementing government innovations to improve government performance.

### 3. METHOD AND ANALYSIS

This research applied qualitative research methodology by building a holistic picture, analyzing words, reporting details of informants, and conducting the study in a natural setting (Cresswell, 2014). The authors conducted three research reports in Surakarta City Government in 2020, Banyumas Regency Government in 2021, and Pekalongan Regency Government in 2022. These research projects conducted numerous in-depth interviews (Arikunto, 1998) with informants, reviewed relevant documents, and analyzing regulations and policies pertinent to public innovation capacity management in Surakarta City Government, Banyumas Regency Government, and Pekalongan Regency Government.

While secondary data was gained from various scientific journals and articles related to public innovation capacity management in Indonesia and globally, subsequently, we used the comparative analysis technique (Arikunto, 1998) to find commonalities and differences in the characteristics of public capacity as well as models of innovation capacity management implemented in Surakarta City Government, Banyumas Regency Government, and Pekalongan Regency Government.

#### 4. RESULTS AND DISCUSSIONS

In general, there is evidence that the local government's capacity for public innovation is determined by the continuous process of generating innovative ideas and implementing them to improve public services (Santoso et al., 2021; Santoso, Lestari, & Rostyaningsih, 2021; Din et al., 2022). This section aims to (1) Elaborate on characteristics related to public innovation capacity management entrenched and practiced in Surakarta City Government, Banyumas Regency Government, and Pekalongan Regency Government, and (2) Present a suggested model based on local practices in the three selected locus areas.

We commence the explanation by providing empirical evidence from selected regional governments in Central Java, namely Surakarta City Government, Banyumas Regency Government, and Pekalongan Regency Government. Based on the four characteristics of public innovation capacity management that Kim and Lee (2009) identified: (1) Innovative leadership; (2) Quality of the Workforce; (3) System and Structure; and (4) External influences. Subsequently, we continue to analyze the distinctiveness of characteristics applied in the three selected regional governments to spawn a new model of public service innovation development based on local features used in those regional administrations.

##### 4.1. Innovative Leadership

Scholars (Alrowwad, Abualoush, & Masa'deh, 2020; Demircioglu & Van Der Wal, 2022; Wipulanusat, Panuwatwanich, & Stewart, 2017) have extensively explained current debates regarding the relationship between leadership and innovation in the public sector. Most phenomena in Indonesia's local governments showed a solemn commitment from the administration's leader or bureaucratic elite to determine innovation in public services (Mariyam & Setiyowati, 2021; Santoso et al., 2021). The present study identified a strong dedication among administrative officials to promote innovations in public service across the Central Java region, with particular emphasis on the Surakarta City Government, Banyumas Regency Government, and Pekalongan Regency Government.

The primary similarity lies in the leaders' commitment to meet the unrest and needs of the citizens through direct discussions with other stakeholders in order to seek solutions to the problems in the field. For instance, this approach has successfully spawned four new public service innovations during the pandemic, such as Integrasi Data Bea Perolehan Hak atas Tanah dan Bangunan (BPHTB), Sistem Informasi Manajemen Daerah (SIMDA) Pendapatan dan SIMDA Keuangan, Quick Response Code Indonesian Standard (QRIS), and E-Pelayanan Pajak in Surakarta City.

Moreover, the administrative leaders have proximity to encourage the state civil apparatus in their region to be innovative. These phenomena are reflected in the routine capacity building held by the heads of administration in Surakarta City Government, Banyumas Regency Government, and Pekalongan Regency Government. During capacity-building activities, the head of administration always emphasizes the importance of having the same vision and commitment as a super team to develop the region. Even each head of administration has its own slogan to boost the innovative spirit among their state civil apparatus, such as "Resources are limited, but creativity is unlimited" in Pekalongan Regency Government, "One Agency, One Innovation" in Banyumas Regency Government, and "Solo Kreatif, Solo Sejahtera" or "Creative Solo, Prosperous Solo" in Surakarta City Government.

However, a distinct characteristic emerged when it came to laws relating to public service innovation development that the Regional Head in each government had started. This document becomes crucial since Law No.

23 of 2014 concerning Regional Government has mandated regional governments to be concerned with establishing regulations related to public service innovations that can be further manifested in regional regulation or regional head regulation (Cahyono, 2018).

Of the three regional governments, we found that Surakarta City Government has not yet stipulated any regulations pertaining to policies for developing public service innovation. On the contrary, the evidence found that regulations related to public service innovation development in Surakarta are absent. In practice, regulations linked to public service innovation in Surakarta tend to be established for specific innovation products that have gained approval from the Mayor of Surakarta City Government.

#### 4.2. Quality of the Workforce

The quality of innovation lies in the quality of workforce (Da Silva & Jardón, 2021; Sahoo, 2019). Thus, it is critical to continuously improve the quality of the state's civil apparatus as an impetus to drive more public service innovations. Our observation noticed that human resources among government agencies in Surakarta City Government, Banyumas Regency Government, and Pekalongan Regency Government are highly enthusiastic about yielding new public service innovations. This keenness is derived from internal and external factors. For the former, creativity as a trait has been naturally instilled among the civil state apparatus in the three regions. For the latter, government officials are keen to improve and invigorate the capability of their civil state apparatus through education and training programs.

#### 4.3. System and Structure

Managing innovation development in many sectors, including the public sector, always requires an adequate organizational structure to ensure continuous development (Kaafarani & Stevenson, 2011; Tidd & Bessant, 2018). In Banyumas Regency Government and Pekalongan Regency Government, organizational structures aimed at fostering regional innovations have been stipulated in regional head regulations (*Peraturan Kepala Daerah* or *Perkada*). While in Surakarta City Government, specific regulations on the organizational structure to spur public service innovations appeared to be absent.

Notwithstanding the absence of regulations linked to organizational structure, Surakarta City Government showed an akin commitment to rewarding its civil apparatus that has contributed innovative ideas in public services, as Banyumas Regency Government and Pekalongan Regency Government have done. The rewards comprise opportunities to get promoted to a higher level of position in the government's organizational structure and some incentive funds addressed to innovative civil apparatus.

Regarding innovation development, we grouped it into two forms: (1) traditional development systems and (2) IT-based development systems. The absence of any technology to promote and manage public service innovations suggested that Surakarta City Government and Pekalongan Regency Government were implementing the former. In implementing public service innovation development, there are usually three primary government agencies involved: (1) the Research and Development Agency (*Badan Penelitian dan Pengembangan*); (2) the Department of Organization (*Bagian Organisasi*); and (3) the Regional Labour Agency (*Badan Kepegawaian Daerah*).

Figure 3 shows the conventional system that Surakarta City Government and Pekalongan Regency Government have put in place to encourage innovation in public services. It involves three major agents (the Research & Development Agency, the Department of Organization, and the Regional Labor Agency) collaborating simultaneously to spawn innovative ideas and turn them into government innovation.

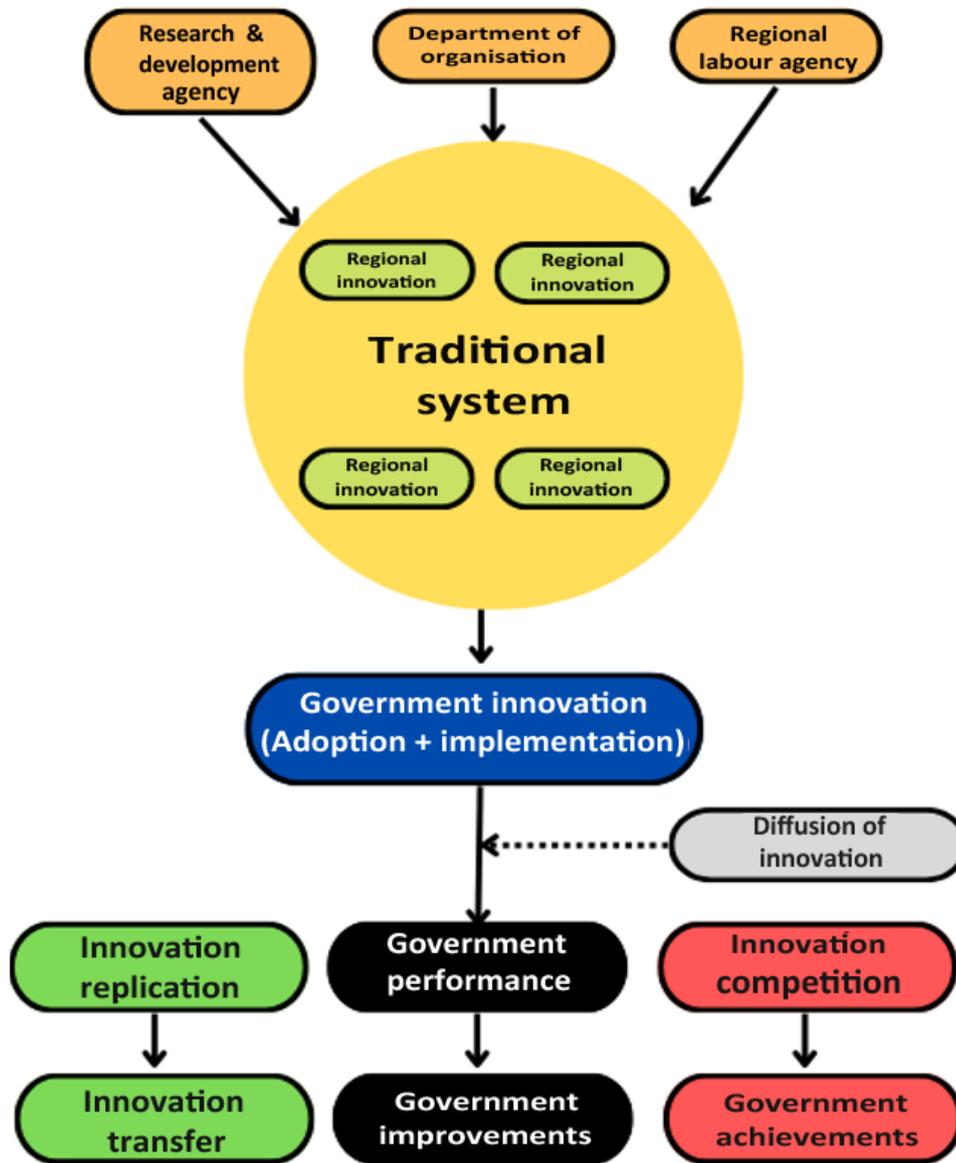


Figure 3. Innovation Development system implemented in Surakarta city government and Pekalongan Regency government.

However, the entire process of developing creative ideas continues to be devoid of any tech-based support, leading to the absence of a comprehensive innovation database that would impact the ongoing development of innovations. Additionally, chances for innovation transfer, improvements in government performance, and greater government accomplishments all have an impact on the results of innovation adoption.

In contrast, Banyumas Regency Government has been harnessing an IT-based innovation development system by integrating data and government activities related to public service innovation on a website called SIAPPMAS (*Sistem Inovasi Andalan Pelayanan Publik Banyumas*) that can be publicly accessed at <http://siappmas.banyumaskab.go.id/>.

It can be argued that the innovation development system practiced by Banyumas Regency Government is way more advanced compared to the previous system applied by Surakarta City Government and Pekalongan Regency Government (Figure 4). The concept involves four primary actors instrumental in shaping the system, including the inclusion of the Communications and Information Agency, which plays a pivotal role in assisting the government in advancing IT-based innovation. This support is channeled through a web platform named "*Sistem Inovasi Andalan Pelayanan Publik Banyumas*" (SIAPPMAS), dedicated to facilitating and promoting innovation in public services. SIAPPMAS serves as a vital tool through which the government harnesses and fosters IT-driven innovation, with

the Communications and Information Agency acting as a key facilitator in this endeavor, aligning with the broader system's objectives. The SIAPPMAS website aims to ensure the innovation development process and innovation achievement are performing continuously.

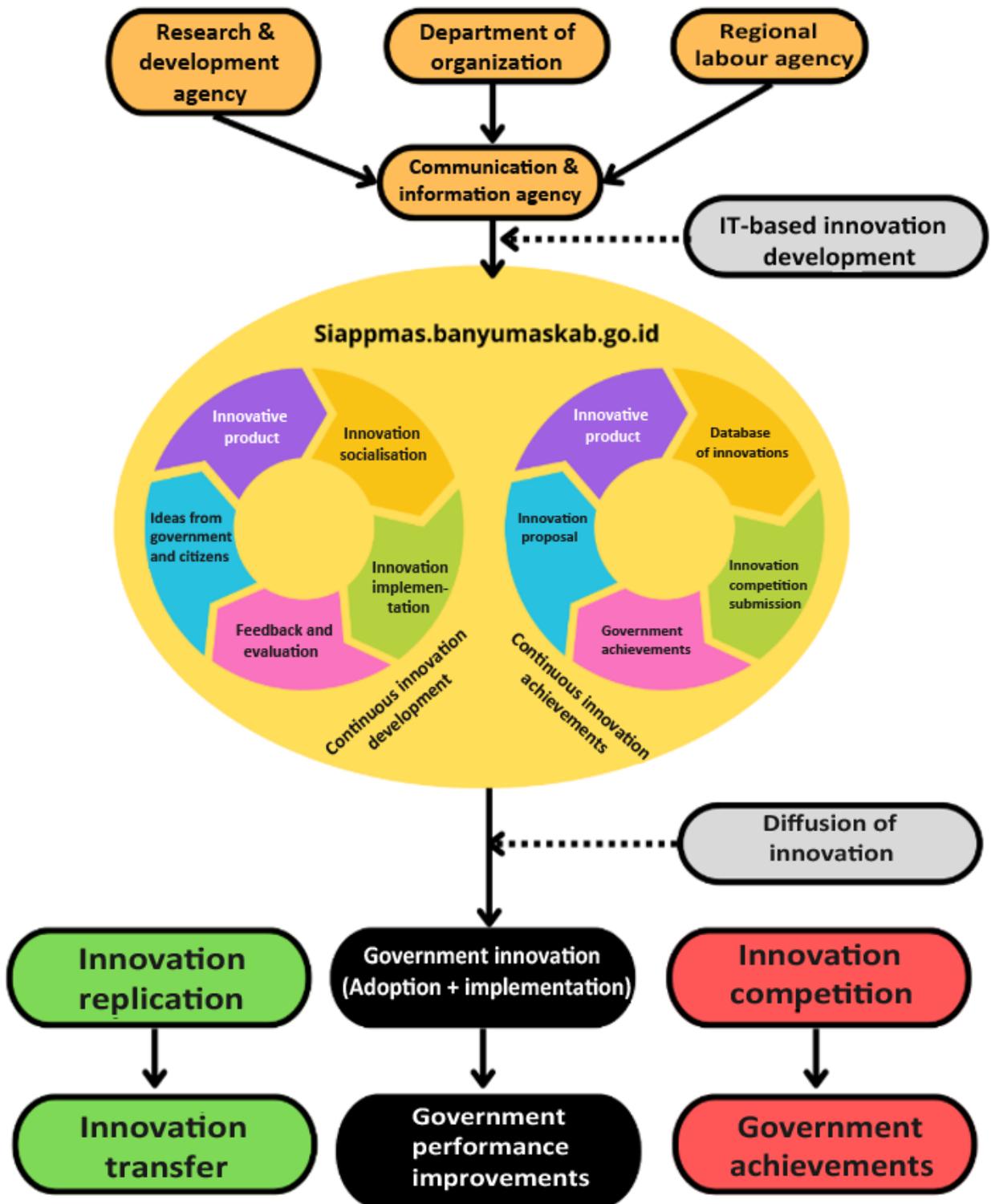


Figure 4. IT-based innovation development system applied in Banyumas regency government.

First, during the innovation development process, there are five main steps. It begins with amassing innovative ideas from the citizens and government and turning them into innovative products that are further formalized through a regional head regulation. Before implementing the innovations in governance and public service practices,

the government agency will first introduce innovative products through socialization. There is also a forum for providing feedback and evaluations in this process that is accessible to all stakeholders, including the general public.

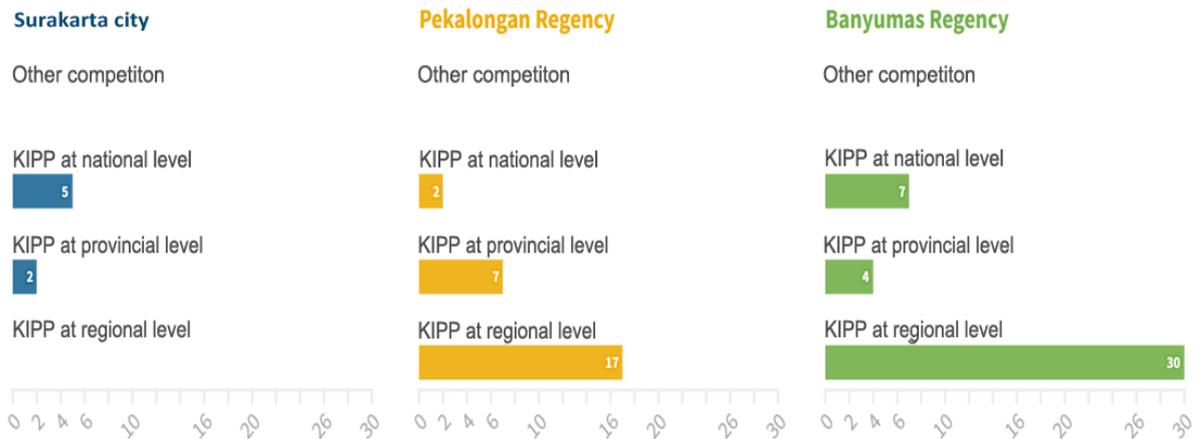


Figure 5. Comparison of innovation competition achievements 2020-2021 in three selected governments.

Second, Banyumas Regency Government attempts to systemize the continuity of its innovation achievements in various innovation competitions by harnessing SIAPPMAS. The process starts with the submission of an innovation proposal on the website to get approval from the Regent. Afterwards, the approved innovation products will be automatically recorded within the database of innovations on the website, making it more efficient for the government to choose which innovations to compete in an innovation competition. Implementing this process can guarantee continuous government achievements in numerous competitions related to public service innovation.

Until 2021, the use of the SIAPPMAS platform has had an impact on Banyumas Regency, resulting in high numbers of innovation competition achievements (Figure 5) and product innovations (Figure 6) compared to Surakarta City and Pekalongan Regency. For innovation competition achievements, Banyumas Regency has successfully achieved a total of 41 awards, including 7 KIPP at National Level, 4 KIPP at Provincial Level, and 30 KIPP at Regional Level. These attainments surpassed Pekalongan Regency and Surakarta City, which could only attain 7 and 26 awards, respectively. Even Surakarta City could not win any KIPP awards at Regional Level.

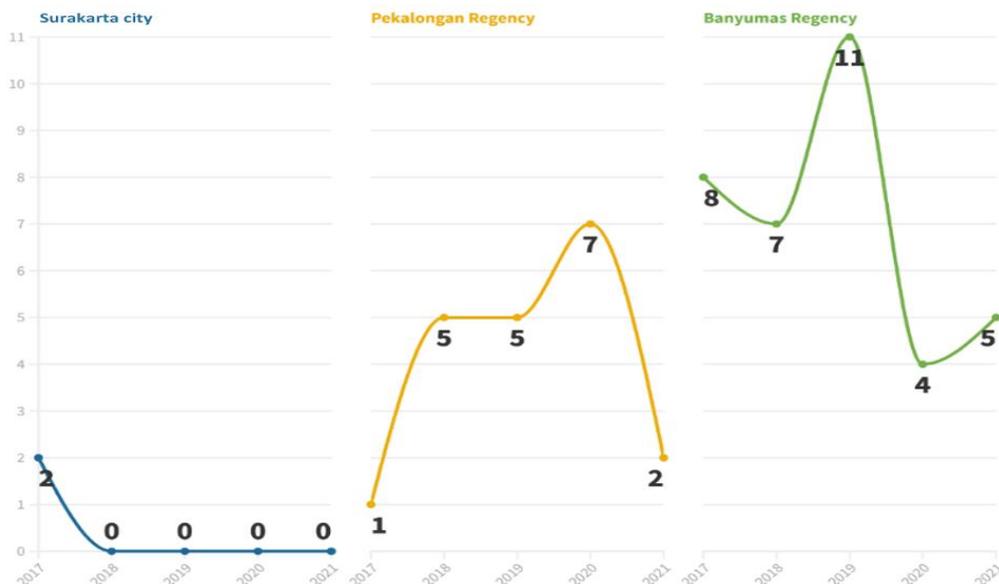


Figure 6. Comparison of product innovations in three selected governments 2017-2021.

#### 4.4. External Influences

Managing external factors can be associated with securing political financing (Kim & Lee, 2009) and involving broad relevant actors to create public value (Bentzen, 2022; Conteh & Harding, 2023; Scognamiglio, Sancino, Caló, Jacklin-Jarvis, & Rees, 2023; Widiartanto et al., 2022). For the former, this study found that the executives in Banyumas Regency, Surakarta City, and Pekalongan Regency possess prowess in lobbying and collaborating with the legislative to secure their funds for developing public service innovations. For the latter, it becomes crucial to attaining the goal of innovation and the government's strategic vision (Hartley et al., 2013; Wang et al., 2019). In this regard, this study found that Banyumas Regency Government, Surakarta City Government, and Pekalongan Regency Government practiced collaborative governance (Dobbin & Lubell, 2021) by cooperating with four primary external stakeholders: (1) Citizens; (2) Higher Education Institution (HEI); (3) Private Sector; and (4) Non-Government Organization (NGO) (Figure 7).

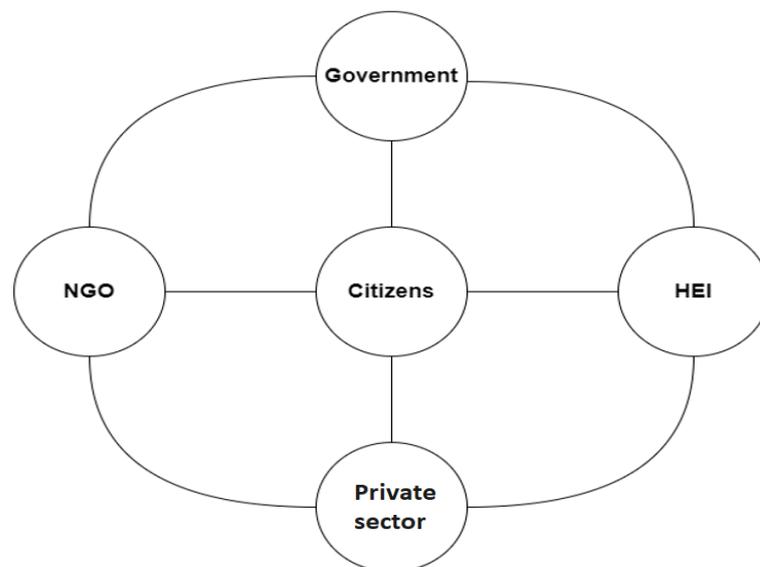


Figure 7. Networks management in Banyumas Regency Government, Surakarta City Government, and Pekalongan Regency Government.

#### 4.5. Potential Local-based Public Service Innovation Capacity Management Model

Based on the previous discussion, it can be argued that Kim and Lee (2009) do not suit being applied in Indonesia's regional governments, particularly in Central Java Province. In the same vein, regional governments have their own way of fostering public service innovation based on their distinctiveness. Some of the evidence is elaborated below.

First, the 'Innovative Leadership' characteristic proved that not all regional governments in Central Java have regional head regulations to drive innovations within the government body, as practiced in Surakarta City Government. In this study, we found that the characteristic of 'Innovative Leadership' tends to be associated with the willingness of government leaders of the bureaucratic elite to collect problems directly from the citizens and conduct capacity building for civil state apparatus to improve their capability and capacity to drive innovations in public services.

Second, not all regional governments have rules about the development of public service innovation, but we found that the existence of any policies or rules (Regional Regulation and/or Regional Head Regulation) is important to encourage the development of public service innovation in regional governments, as required by Law No. 23/2014 about Regional Governance. Therefore, we argue that it is urgent to split 'Regulation and Policy' out of the characteristic of 'Innovative Leadership', as contended by Kim and Lee (2009). By doing this, the system would pave the way for leaders to practice agile decision-making processes that subsequently help the government keep abreast of the fast-changing situation.

Third, in the ‘Quality of Workforce’ characteristic, we have grouped the characteristic more specifically into internal and external factors. For the former, we found that the workforce quality is predominantly determined by the entrenched innovation among its civil state apparatus to spawn innovations in public services continuously (Santoso et al., 2021), as we witnessed in Surakarta City. For the latter, we spotted that education and training programs are critical to providing an impetus for improving the civil state apparatus’ capabilities to drive public service innovations.

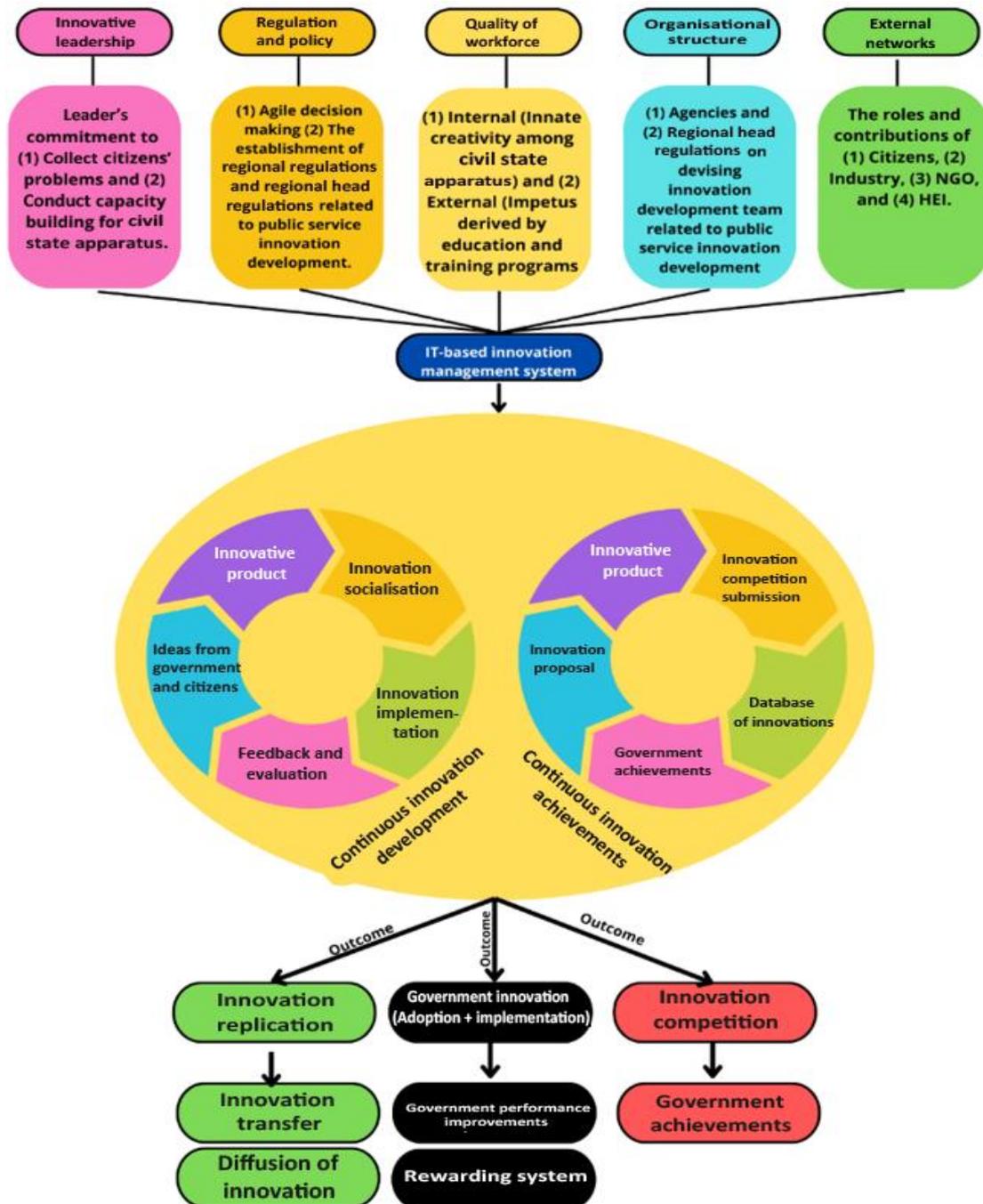


Figure 8. Potential local-based public service innovation capacity management model.

Fourth, as aforementioned in the discussion, we have divided the characteristic of ‘System and Structure’ in Kim and Lee (2009) into two different aspects. We found that regional governments are practicing two types of systems in developing public service innovation: the traditional development system (in Surakarta City and Pekalongan

Regency) and the IT-based development system (in Banyumas Regency). However, we argue that the IT-based development system should be more widely deployed and implemented among regional governments in Indonesia. For structure, we found the need for a specific 'Organizational Structure' represented by particular agencies to manage the public innovation development, along with regional head regulations concerning forming an innovative development team within the regional government. Fifth, this study also found that 'External Networks' play a significant role in helping regional governments foster numerous public service innovations. In practice, these external networks can be attributed to the roles and contributions of citizens, the Private Sector, NGOs, and Higher Education Institutions (HEI). Therefore, these five 'local characteristics' can be portrayed as shown in [Figure 8](#). Our viewpoint is that moving forward, the mechanism employed to facilitate public service advancements in regional administrations ought to leverage an information technology-based innovation management system. This method would streamline the procedure for attaining ongoing innovation progress and consistent innovation attainment. Following this, the procedure will encompass three key results: the replication of innovation, the acceptance and execution of innovation by the government, and competition in innovation. The outcome of innovation replication will deploy opportunities for the transfer and diffusion of innovation, while the result of innovation competition will contribute to increasing government achievements gained from various competitions. Moreover, the outcome of government innovation will directly improve government performance and benefit the civil state apparatus through the rewards given by the regional governments for supplying innovative ideas.

## 5. CONCLUSION

The innovation capacity management model by [Kim and Lee \(2009\)](#) is unsuitable for Indonesia's regional governments, particularly in the Central Java Province area. As it turned out, each regional government has characteristics that determine the development of public service innovations as mandated by Law No. 23 of 2014 concerning Regional Governance. We found that those characteristics lie in five primary aspects: (1) Innovative leadership; (2) Regulation and policy; (3) Quality of workforce; (4) Organizational structure; and (5) External networks that should be supported by harnessing IT-based innovation management. For the first aspect, the characteristic of 'Innovative Leadership' tends to be associated with the willingness of government leaders of the bureaucratic elite to collect problems directly from the citizens and conduct capacity building for civil state apparatus to improve their capability and capacity in driving innovations in public services. For the second aspect, it is urgent to separate 'Regulation and Policy' from the characteristic of 'Innovative Leadership', as contended by [Kim and Lee \(2009\)](#). By implementing this system, it would create a framework conducive to agile decision-making by leaders. This agility is essential for the government to effectively respond to rapidly changing situations. Regarding the third aspect, it becomes evident that investing in education and training programs is pivotal. These initiatives are instrumental in driving enhancements within the civil state apparatus, empowering them to spearhead innovations in public service delivery. In addressing the fourth aspect, we assert that there is a compelling case for the wider adoption and implementation of IT-based development systems among regional governments in Indonesia. This would harness the full potential of technology for governance improvement. In terms of structure, our findings underscore the importance of specific organizational structures represented by dedicated agencies. These entities are crucial for managing public innovation development. Additionally, regional head regulations pertaining to the formation of innovative development teams within regional governments are essential for fostering innovation. Finally, with regard to the fifth aspect, our study emphasizes the significant role that external networks play. These networks are invaluable in assisting regional governments in nurturing a multitude of innovations in public service delivery. After analyzing characteristics of innovation development in Surakarta City, Banyumas Regency, and Pekalongan Regency, we designed a potential public service innovation capacity management model ([Figure 8](#)) based on five 'local' characteristics in those three regional governments that was also supported by the utilization of IT-based innovation management. We conclude that the proposed local-based approach has the potential to be replicated

in other regional governments in Indonesia, thereby facilitating the development of sustainable public service innovation and enabling continuing government accomplishments derived from diverse innovation contests in the future. The implementation of the suggested approach would enable policymakers in local governments to engage in agile decision-making processes through the use of IT-based public service innovation management.

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