

ARTICLE

Local Government Expansion of Mobile Governance during the Pandemic

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ABSTRACT

During the COVID-19 pandemic, mobile governance has been more popular than old public services since the government implemented social distancing and stay-at-home policies. This study will contribute to the scientific literature on m-governance and public administration application development in Indonesia. This study aims to examine local government applications and identify application categories owned by local governments in East Java Province. This study uses a quantitative approach and secondary data from the Android smartphone Play Store. After data collection, the researcher applied descriptive statistical analysis to quantify applications made by the local government in East Java Province. The results found that local governments in East Java Province have 362 m-governance applications. The regional offices in East Java used at least 15 uniform applications. Most applications (86%) focused on community service; the rest were business-oriented. The highest category was productivity communication applications and 14% of applications focused on business activities. Thus, based on the topic, this study is the first to examine how local governments might categorize Android-based applications.

A. INTRODUCTION

The implementation of e-government applications in Indonesia has increased. There were 141 regencies out of 514 in Indonesia that became Movement Towards Smart City members until 2021. In 2022, 50 cities/districts were selected to aid in the creation of a smart city master plan. Numerous mobile governance initiatives exist to realize a smart city, such as the Telunjuk Sakti program from the population and civil register office of Wonogiri Regency (Ditjen Aptika, 2022). The results of the e-Government Development Index (EGDI) survey conducted by the United Nations (UN) Department of Economics and Social Relations (DESA) to its member countries showed that Indonesia was ranked 88th out of 193 countries in 2020 (United Nations, 2020). Indonesia has moved up 19 ranks since 2018. This growth has been attributed to adoption of online or web-based public services. During the pandemic, public services have shifted from conventional to online delivery (Tang et al., 2019). Many central and regional governments are vying with one another to develop mobile applications for smartphones to improve the delivery of public services. Initially, e-government utilized a website, but now numerous agencies are developing mobile applications that can be accessed via mobile phones.

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The transition of public services to mobile devices is not without merit. Over ninety percent of the population now possesses a cell phone, of which three-quarters are smartphones. Since their introduction in 2008, mobile phone applications have become an indispensable instrument for commercial services such as music, weather, and shopping. The average smartphone user has approximately 40 applications installed (Ganapati, 2015). The importance of applications for people to interact with the government is growing (Ganapati, 2015). Government-created mobile applications offer various opportunities to provide services, such as locating parking spaces and making payments, and engaging citizens in co-production services, such as reporting potholes and malfunctioning street lighting. Local administrations remain committed to the development of applications that facilitate government services. As the new coronavirus spreads worldwide, governments rely on mobile operator data to monitor public health, including patients who require isolation and how obedient individuals are to social distancing (Lyons, 2020). South Korea uses location data to generate a public map of coronavirus-infected patients.

Using applications to determine whether or not a person has had contact with someone infected with the new coronavirus is the most aggressive method of evaluating a country's level of preparedness. Consequently, the BBC reported on February 29, 2021, that the country had recorded 64 new cases in the previous twenty-four hours, down from a peak of 909 cases (Lyons, 2020). Due to accurate data, widespread application use can increase public awareness and reduce infected cases. The Indonesian government has also mapped HIV-positive patients using the Peduli Lindungi application. Previous research discussed the implementation of e-government via the website (Yunita & Aprianto, 2018), e-government success factors (Rozikin et al., 2020), the process of making software for the government (Fuadi, 2018), effectiveness of m-governance (Ramganesht et al., 2017), accessibility of e-governance-based mobile applications (Balaji & Kuppusamy, 2016); and studies on m-governance (Gupta et al., 2017).

There needs to be research on the mapping and categorization of applications used by the government, especially in Indonesia. The categorization of applications is required to facilitate the standardization of regional office application specifications. Regionally, most offices have identical duties and responsibilities, necessitating a generic application. Unfortunately, regional applications have not been mapped and categorized to date. Considering the current mobile era, there is an urgent need to transform e-government services into m-Governance to move closer to the vision of "anywhere-anytime-anyone" e-government services. For this purpose, it is necessary to map the East Java Province m-governance application. The researcher attempts to analyze the categorization of m-government applications so that the government can determine which application categories are required. The researcher studied application categorization circumstances to establish East Java Province's local government application categories based on the Play Store's mapping of local government apps.

B. LITERATURE REVIEW

Mobile Phone Apps

Apps are software programs designed primarily for mobile devices such as smartphones, tablets, and wearables (Kadu et al., 2015; Kyem, 2016). With the explosive growth of mobile devices, applications have become commonplace since Apple released them for the iPhone in 2008 (Althunibat et al., 2021). Approximately four million programs are available via the App Store (for Apple iOS devices) and Google Play (for Android devices). With billions of app installations, the app economy has expanded swiftly. Most of a cell phone user's time is spent on applications (Klalaf, 2015). This investigation is limited to the application of the local government of East Java Province via the Google Play Store.

M-Governance

Apps are mobile-device-specific software applications, such as those for smartphones, iPads, and wearables. Despite Apple's 2008 introduction of apps for the iPhone, apps have become commonplace due to the explosive growth of mobile devices. The most prominent app stores, which include the App Store (for Apple iOS devices) and Google Play (for Android), offer nearly four million apps. With billions of downloads, the app-based financial system has swiftly expanded. Almost 90% of a mobile user's time is spent on package management (Elouazizi, 2014; Klalaf, 2015).

This study is limited to East Java Province municipal government software downloaded from the Google Play Store. Mobile Government, abbreviated as m-governance, is the extension of e-government to mobile platforms, similar to the strategic use of government services and packages that are made as simple as possible by utilizing mobile phones, laptops, personal digital assistants (PDAs), and wireless internet infrastructure (Gupta et al., 2017). Moreover, m-governance is superior to e-government for providing public services and statistics to the general public. It can be accessed from any internet-enabled device, anytime, anywhere.

M-governance is not always meant to replace e-government but rather to supplement it. The proliferation of mobile cellular devices and services presents the public sector with new opportunities. Schadler, Bernoff, and Ask (2014) argue that there may be a conceptual shift in the mobile era, where individuals expect, "I can get what I want right away and when I need it." Access to online services is another area where the proliferation of mobile phones is bridging the digital divide. Ownership of mobile phones is restricted to a subset of businesses, and Internet dependence may be very high. African-American and Hispanic adults spend more time on mobile applications than the average user (Ganapati, 2015). Low-income households are also more likely than high-income households to rely on smartphones for online access. Greater mobile phone accessibility among traditionally marginalized populations will increase the potential for providing social services via mobile applications.

According to Ganapati (2015), two varieties of authority packages exist. First is enterprise-targeted packages, especially for internal use in public organizations. They are most accessible to personnel and operate within a consistent firewall installation throughout the organization. Second is citizen-citizen-oriented applications intended for external use. They are available to anyone who wishes to utilize government services. Enterprise-targeted apps represent a significant growth area in the private sector, particularly for a portion of the sales force (Ganapati, 2015; Gupta et al., 2017; Mustafa & Shabani, 2018; Poblet, 2018). Numerous opportunities exist to transform internal operations with location-primarily based services accessible everywhere in real-time. Enterprise-targeted packages can increase government productivity in some ways: (1) by assisting with the management of mobile assets; (2) by increasing employee productivity, particularly on routine and straightforward tasks requiring cursory inspection; (3) by reducing the executive responsibilities of area employees within the back office; and (4) by providing opportunities for collaboration and networking among public corporation field offices. In federal, state, and local administrations, citizen-oriented apps are now more prevalent than business-oriented apps (Ganapati, 2015; Kaliannan et al., 2018; Kanaan et al., 2019). This software is a similarly modern mechanism for providing public offerings and involving the public in decision-making. Citizen-oriented packages lie within the federal government. Due to the 2012 Digital Strategy, most federal agencies have at least one form of citizen-oriented software.

There are six commands of the most important government-level-oriented packages: (1) Information and information corporation apps offer information about the business/ enterprise offerings, recent information, or utilization of business/ enterprise records; (2) Client applications for "on-the-go" offerings (e.g., the official app of the Internal Revenue Service

IRS2GoApp, GSA steady with Diem app, Transportation Security Agency with MyTSA app); (3) Crowdsourcing packages are used to benefit from information provided by users that the business cannot benefit from on its own. Examples include MyTSA (crowdsourcing organized time in passenger protection channels) and the Department of Energy; (4) Lantern Live App (crowdsourced refuelling stations for future emergencies) and Federal Communications Commission Speed Test App (crowded broadband speeds); (5) Currently, the Federal Emergency Management Agency (FEMA), Food and Drug Administration (FDA), Department of Health and Human Services (HHS), and specific corporations use health and safety information programs to provide data on disaster relief, drug shortages, and HIV/AIDS; and (6) The instructional app is entertaining and examines theme-related elements, gamification fundamental. Some applications include Comet Quest by NASA, Aesop for Children by the Library of Congress, DocsTeach by the National Archives and Records Administration, and Access American Stories by the Smithsonian Institution. The researcher will divide packages into two categories: the attractiveness of business-oriented packages and network-oriented packages.

Mobile Applications in Local Government

Local administrations (districts/municipalities) vary in their adaptation to the mobile environment based on their mandates and policies (Ganapati, 2015). Local governments are the direct service providers to residents daily (e.g., schools, hospitals, law enforcement, public works, transportation, etc.), making enhanced customer service crucial (Ramganesht et al., 2017). Therefore, the local government has developed a tool to facilitate citizen participation. In adapting to cell changes, local governments vary widely. Large cities and counties typically have mobile applications, but some websites may not be mobile-friendly. About half of the top 10 municipal and county government websites fail the Google Mobile-Friendly Test.

The local authorities' Vision Internet (2018) survey indicates that roughly half of respondents offer mobile-friendly citizen services. Citizen-centred applications provided by state and local governments can be divided into four categories (Ganapati, 2015): (1) Information on parks, recreation, and leisure activities (e.g., park guides created by the ParksByNature network in numerous states). The innovative app employs Quick Reader (QR) codes for interactive parking navigation and augmented reality to enhance the parking experience by superimposing virtual reality; (2) traffic and information applications are distributed onsite in real-time. The US Department of Transportation (DOT) 511 applications provide information on highway traffic conditions so drivers can customize their routes; (3) Open 311 is a civilian application that does not require emergency services (such as pothole repair or streetlight replacement). Open 311 enables the deployment of 311 applications in cities without a 311 headquarters and via third-party providers such as Accelas PublicStuff, CitySourced, QScend, and SeeClickFix; and (4) Using municipal government data, citizen groups, nonprofits, and private sector organizations develop third-party civic apps for the government. After classifying the application according to its orientation, the researcher will organize four subcategories: tourism applications, traffic information applications, public engagement information, and civil applications developed in collaboration with third parties.

C. METHOD

Since this study aims to map applications possessed by local governments in East Java Province, a quantitative method was employed to map the distribution of applications in terms of the number and type of applications provided by local governments. The researcher determined the categories of local government applications in East Java by analyzing the criteria for application classification based on mapping local government applications on the Play Store. Measurements were performed using predetermined sizes based on numbers.

According to [Creswell \(2018\)](#), quantitative research is a systematic technique that examines a fact that is classifiable, concrete, observable, and measurable; the relationship between variables is causal; the research data is in the form of numbers; and the evaluation employs statistics.

Research locations are chosen based on objectives and problems ([Rangkuti, 2017](#)). The researcher determined the precise location of the study, namely the local administrations in East Java Province. East Java Province's regional administration comprises 38 total regencies and cities. The researcher investigated all applications installed on Android smartphone play stores that the East Java Province administration created. The researcher selected municipal governments from Blitar City and Bojonegoro Regency as confirmatory data.

Blitar City has many Android-based government applications, whereas Bojonegoro Regency has a relatively small number. The population, also called the universe, is the entirety of the object whose characteristics will be estimated. The features of the population are called parameters. Consequently, the population is frequently interpreted as a collection of research objects from which data will be collected or gathered. In research (communication research), the population may consist of persons (individuals, groups, organizations, communities, or society) or inanimate objects. This study's population comprised all local government-developed applications installed on Android smartphone Play stores.

Sampling selection of representative objects based on a specific purpose, not on strata, chance, or region ([Sugiyono, 2016](#)). The sampling technique is a procedure to determine the research unit. The sampling technique in this research was total sampling. Total sampling is a sampling technique where the number of samples is the same as the population ([Sugiyono, 2016](#)). Therefore, the sample for this study consisted of all applications developed by local administrations and downloaded from the Android smartphone play store. The identification of m-governance applications in the Google Play store was used to compile secondary data for this study. This investigation collected data through a documentation study. Due to space and time constraints, documentation studies are essential during the pandemic.

According to [Sugiyono \(2016\)](#), documentation is searching for and collecting information in notes, transcripts, books, newspapers, magazines, minutes, agendas, etc. This study analyzed and evaluated documents related to m-governance in the form of government applications from the Google Play Store. Based on the collected data, descriptive quantitative analysis with a frequency distribution table was used to analyze the mapping of the m-governance application categories of the local administrations in East Java Province. Statistical analysis is a method for processing data information (quantitative) related to numbers, including how to locate, collect, and process data so that it is presented in an easy-to-read format or can be interpreted. In this investigation, the researcher employed descriptive statistics.

D. RESULT AND DISCUSSION

Mapping of Local Government Applications in East Java

The development of information technology today is heading towards the development of wireless technology, known as mobile technology. This technology aims to meet the needs of information technology device users who are increasingly occupied and require greater work flexibility. The cable infrastructure no longer constrains their mobility due to this adaptability. Inevitably, wireless technology became widespread.

Now it is effortless to find several wireless devices everywhere. Wireless Fidelity (WiFi) devices, for example, are the devices that permit wireless internet access. These devices are frequently located in public gathering places like shopping malls, restaurants, and cafes. Then, it is suggested that mobile technology, specifically mobile phones, be utilized to reduce the digital divide in Indonesian public services using ICT ([Kanaan et al., 2019](#)). Mobile

Government (m-gov) is the concept of the government utilizing mobile technology devices. According to [Tang et al. \(2019\)](#), m-Governance is a "strategy and its implementation involving the utilization of all kinds of wireless and mobile technology, services, applications and devices for improving benefits to the parties involved in e-government including citizens, businesses and all government units". This study mapped applications created and used by 38 districts/cities in East Java. The researcher listed all applications used by local governments in East Java to assist with their position's main tasks and functions. The following are the results of the listing.

Table 1. Number of Local Government Applications in East Java

No.	District	Numb. Apps	%	No.	District	Numb. Apps	%
1	Kota Surabaya	29	8.01	19	Trenggalek	8	2.21
2	Malang	18	4.97	20	Kota Mojokerto	8	2.21
3	Provinsi Jawa Timur	17	4.70	21	Bangkalan	7	1.93
4	Sidoarjo	15	4.14	22	Blitar	7	1.93
5	Kota Blitar	15	4.14	23	Jember	7	1.93
6	Probolinggo	14	3.87	24	Pasuruan	7	1.93
7	Tuban	14	3.87	25	Ponorogo	7	1.93
8	Jombang	13	3.59	26	Kota Kediri	7	1.93
9	Gresik	11	3.04	27	Kota Madiun	7	1.93
10	Magetan	11	3.04	28	Kota Probolinggo	7	1.93
11	Pamekasan	11	3.04	29	Mojokerto	6	1.66
12	Lamongan	10	2.76	30	Kediri	5	1.38
13	Tulungagung	10	2.76	31	Nganjuk	5	1.38
39	Bojonegoro	10	2.76	32	Ngawi	5	1.38
14	Kota Batu	9	2.49	33	Pacitan	5	1.38
15	Banyuwangi	8	2.21	34	Situbondo	5	1.38
16	Lumajang	8	2.21	35	Kota Pasuruan	5	1.38
17	Madiun	8	2.21	36	Kota Malang	4	1.10
18	Sampang	8	2.21	37	Bondowoso	3	0.83
19	Sumenep	8	2.21				

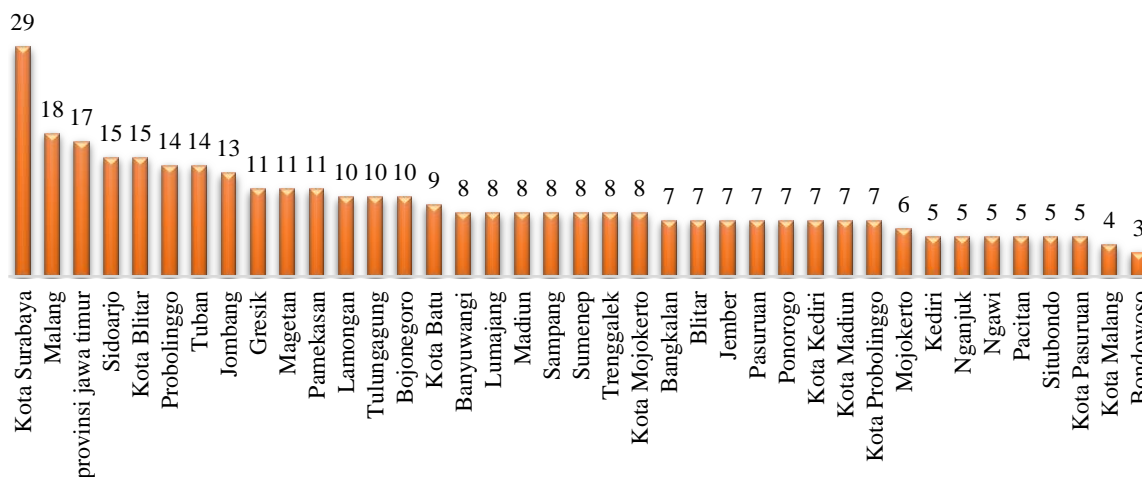
Source: Google Play Store, 2021

Based on the above mentioned list, Surabaya had the most m-governance applications (29), followed by Malang with 18 applications, East Java Province with 17 applications, and Sidoarjo Regency in fourth place. The top four were regencies/cities with a significant activity level, specifically large towns. Mobile or wireless networks appear appropriate for developing countries, as the number of PC and landline connections is deficient compared to mobile phone access ([Hossain et al., 2015](#)). According to the local administration in East Java, several cities and regencies are increasing the number of applications for public service requirements.

This is evidenced by the application making public services more rapid, efficient, and accurate. [Muhammad \(2020\)](#) said numerous governance-related services, including health, agriculture, education, employment, traffic and order law, tax, and the judicial and legal system, can be provided and communicated via mobile phones. In most instances, mobile phones serve as a platform for disseminating information such as the latest government-related news, information, updates, alerts, and announcements regarding emergency and disaster management, elections, traffic, and the weather.

Some applications are based on citizen-government communication; they aim to facilitate interaction between citizens and the government. Socio-economic factors like income, education, age, gender and linguistic difference, lack of infrastructure, and lack of awareness among citizens are the major issues in implementing m-governance successfully ([Iyer & Singh, 2017](#); [Mustafa & Shabani, 2018](#); [Tang et al., 2019](#)). Surabaya, Malang, and Sidoarjo, "developed cities" in East Java Province, have the maximum concentration of mobile

governance applications. This is consistent with Kadu's (2015) assertion that, with a growing population and increasing Smartphone penetration, the world is becoming increasingly mobile and digital. Smartphones and the internet are no longer exclusive to the affluent, as more users gain access to mobile internet and become better informed.



(Source: Primary Data processed)

Figure 1. Number of m-governance Applications in East Java Province

When viewed from the number of Android-based m-governance applications, local governments' provision of digitally-based public services is not optimal. In contrast, President Joko Widodo issued directives to expedite digital transformation, including in the government sector. This encourages local governments to attain the bureaucratic reform index's target indicators, digital services. People need quick, affordable, and reliable services (Yap et al., 2019). It is possible to organize using digital tools. Numerous local governments have currently implemented web-based and mobile applications for public services. Cities such as Surabaya, Malang Regency, Sidoarjo Regency, and others urgently need digital services. Due to the technological evolution of the information system, the urgency of digital services is an absolute reality that must be encountered. This is evident when comparing the regional income to the number of applications.

Categorization of Mapping Local Government Applications in East Java

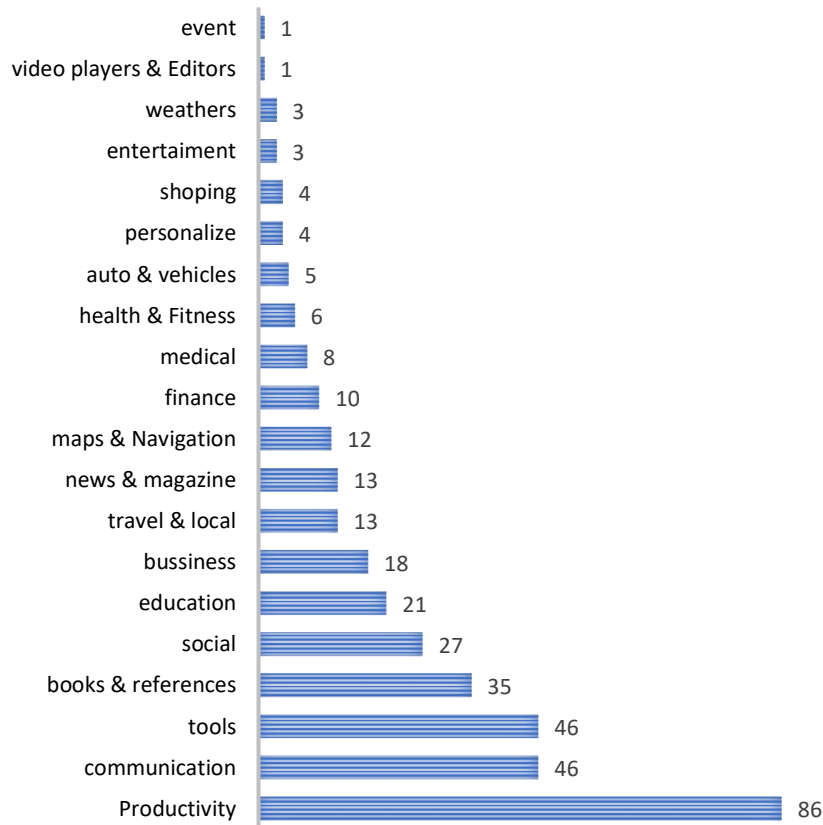
The researcher categorized android-based m-government applications through two stages. They were categories based on the Playstore application and classes based on the purpose of the application. According to Ganapati (2015), there are two types of government applications, namely enterprise-focused applications (Enterprise-focused apps) and citizen-oriented applications (Citizen-oriented apps) intended for external use.

Enterprise-focused apps are another profitable growing market in the private sector, particularly for the sales force (Kyem, 2016). There are many opportunities to transform internal operations with location-based services available anywhere in real-time. Enterprise-focused applications can increase government productivity in several ways: (a) assisting in the management of mobile assets, (b) boosting worker output, particularly on routine and easy tasks requiring cursory inspection, (c) lessening the administrative burdens placed on field employees in the back office, and (d) providing opportunities for collaboration and networking between public agency field offices.

Citizen-oriented apps are more common than company-focused apps in federal, state, and local governments (Ganapati, 2015). These applications are an additional innovative mechanism for providing public services and involving the general public in decision-making.

Applications in the federal government focus on citizens. Most federal agencies now have at least one type of citizen-focused application due to the 2012 Digital Strategy.

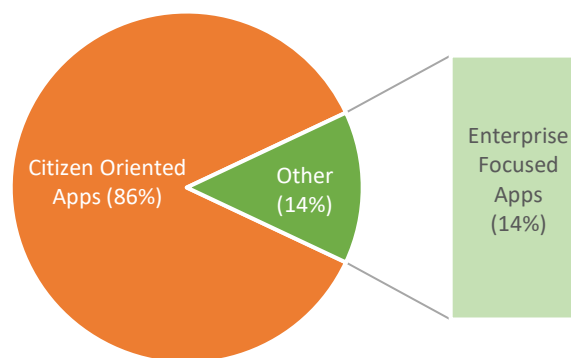
According to the application's usability group, the mobile government has already been posted to the Play Store with its categories. Productivity, communication, tools, books and references, social, business, travel and local, news and magazines, finance, maps and navigation, medical, health and fitness, auto and vehicles, personalize, shopping, entertainment, weathers, video players and editors, and events are the categorized in the Google Play Store.



(Source: Google Play Store, 2021)

Figure 2. Category of Local Government Applications based on Google Play Store Category

According to the graph above, eighty-four applications fell within the category of productivity-supportive applications. The other highest order includes applications (up to 45), social media (up to 27), and communication (up to 46), as well as books and references (up to 34). Most citizen-focused apps fell under the category of applications used by regional administrations throughout East Java. The applications are intended for external use. They are accessible to anyone who wants to use government services. Citizen-oriented apps include applications in the categories of productivity, communication, tools, map and navigation, auto and vehicles, books and references, social, education, medical, health and fitness, weather, and personalize. Business-focused applications (Enterprise-focused apps) include business, travel, finance, shopping, entertainment, and events.



(Source: Google Play Store (2021) Modified)

Figure 3. Categories of Local Government Applications in East Java

There were 305 public service-oriented applications and 49 business-oriented applications. However, a closer inspection revealed that neither a standard nor a standard definition existed for a standard category so that the user (in this case, the local government) could choose the appropriate category for the application he submitted. This resulted in applications with the same function but in different categories. For example, the Blitar Regency e-Siap application is a population administration application for the Blitar Regency. Documents related to domicile registration include birth certificates, death certificates, e-KTP, Family Cards, etc. With this application, it is hoped that residents of Blitar Regency can complete the letter registration procedure efficiently and effectively from anywhere and at any time. The e-Ready application falls under the category of personalization. The productivity category also includes population services for other regencies, such as the Lamongan Disdukpencapil application, SIPLAYBOYS - Malang Regency Civil Registration Office, SIPANDAUNIK Ponorogo, and LAPAK Probolinggo Regency. The existence of the COVID-19 pandemic has also led to an increase in the demand for online presence. Almost every district/city agency has a mobile-accessible website that employees can use on their mobile devices.

Table 2. Local Government Online Presence Application in East Java

No	District	Name of Applications	Update
1	Sampang	Absensi Sampang	December 3, 2019
2	Bangkalan	Apel Digital	July 14, 2020
3	Blitar	Presensi Digital Pemerintah Kabupaten Blitar	January 20, 2020
4	Kota Mojokerto	SIMOKER Mojokerto	January 8, 2020
5	SIAP Pemkot Probolinggo	Kota Probolinggo	February 9, 2020
6	Ngawi	Presensi Pemkab Ngawi	October 27, 2020
7	Ponorogo	JATHILAN	July 6, 2020
8	Bojonegoro	Si-Kepo Bojonegoro	February 14, 2021
	Jember	LPE Kab. Jember	June 15, 2021
9	Sumenep	SIC	June 26, 2021

Source: Google Play Store (2021)

Since the Covid-19 pandemic two years ago, online attendance through Android applications has increased, as indicated by the above data. In 2019, only one school district, Sampang Regency, implemented online absenteeism. Then, in early 2020 alongside the covid-

19 pandemic, several districts/cities implemented online attendance. The simplicity of accessing absentee services demonstrates the need for pandemic conditions in which employees observe the stay-at-home policy (Lyons, 2020). After listing all local government applications in the Play Store, there is a tendency for regional offices to support their public services with specific applications. The researcher categorizes prevalent applications utilized by regional offices.

Table 3. Regional Office Mapping and Common Applications

No	Leading Sectors	Common Application Uses	Application Categories	Application Example
1	Diskominfo	Public information app	Communication	Smart Bondowoso, E-Sambat Kota Pasuruan
2	Dispendukcapil	Application for population and civil registration services	Tools	SIPLAYBOYS - Dispendukcapil Kabupaten Malang
3	Dinas kesehatan dan RSUD	Health service app	Medical/ Health & Fitness	SIST-BrO
4	Dinas perindag & KUKM	Applications for business people, industry, MSMEs	Business	MalangKab UMKM, (SIILa) Sistem Informasi Industri Lamongan
5	BPKPD/Bapenda	Application for tax amount, taxpayer, tax payment	Finance	Surabaya Tax, E-PAD Banyuwangi, ePBB Kab. Tulungagung
6	DPMPSTP	One-stop licensing service application, business, investment	Business	DPMPSTP Kabupaten Kediri
7	PDAM	local water company	Business	PDAM Lumajang
8	Dinas Pendidikan dan kebudayaan	Educational apps	Education	EPS Malang Kab
9	Dishub	Kir test application/motor vehicle test. Applications for public transport	Auto & Vehicle	GOKIR Kabupaten Malang, GOBIS Suroboyo Bus
		Application for mapping and navigation	Map & navigation	Pasuruan TransInfo, SITS CCTV Surabaya, E-Dishub Kota Surabaya, TransportasiKu - Surabaya Smart Mobility
10	Dinas Perpustakaan dan Kearsipan	Digital library app	Book & references	e-Perpusdamgt
11	BPS	Application for digital statistics	Book & references	Astabaya
12	Dinas pariwisata/ Dispora	Applications about travel	Travel & local	Banyuwangitourism App

No	Leading Sectors	Common Application Uses	Application Categories	Application Example
13	BKD	Staffing system Employee absence	Productivity productivity	SIMOKER Mojokerto Presensi Digital Pemerintah Kabupaten Blitar Jogo Kotama
14	BPBD	Disaster information application This system contains weather information from BMKG, including: 1. Weather Radar Information 2. Daily Rain Forecast Information 3. Rainy Season Forecast 4. Dry Season Forecast 5. Monthly Rainfall Analysis 6. Earthquake Information 7. Tsunami Information	Tools Weather	SIMONA (Sistem Informasi Mojokerto Bencana), SIICA - Sistem Informasi Iklim dan Cuaca
15	Setda bagian humas	Application for public relations/information	News & Magazine	Humas Smart Click - Kabupaten Probolinggo

Source: Google Play Store (2021)

The Android system's applications were not integrated. Each district or local administration created its applications to fit its budget capabilities and objectives. Before issuing Presidential Regulation of the Republic of Indonesia Number 95 of 2018 concerning Electronic-Based Government Systems, SPBE was referred to as E-government or Electronic Government, and local governments had a limited budget for application development. The central government expected the integration of data and applications. At the time of writing this paper, however, there was no prohibition on district/city expenditures towards application development. Consequently, numerous applications were submitted from 2020 to 2021, especially during the COVID-19 pandemic, when local administrations underwent rapid digital transformation.

The restrictions on physical meetings or direct attendance necessitated digitizing all activities, such as meetings, socialization activities, literacy, and office tasks. The development of Android-based local government applications is accelerating (Pribyl et al., 2022). The trend of grouping applications has recently begun to emerge. Each regional office in the local government requires an application to carry out its primary functions. Regional offices must have at least one uniform application to perform their main tasks and functions across regions, such as using the tools category's population services. Every population and civil registry office in East Java offered population services, so a comprehensive implementation of population services was necessary.

Another example was a digital library application. A digital library application is required for every library service in East Java. As a result, digital library implementation must be standardized.

Presidential Regulation Number 90 5 of 2018 About the Electronic-Based Government System (SPBE) regulates the SPBE application used by applicable and local government businesses to provide SPBE services, which consists of ultra-modern and precise applications. Every central agency and local government must utilize the general application. In the interim, applicable businesses and community governments may develop and enhance specific applications. Still, they must be based on the SPBE form of the Central Agency and their respective SPBE forms. A standardized, user-friendly application for each regional office will alleviate the fiscal burden. General applications can also streamline the programs that each regional office has planned. According to Yap's argument, people require quick, affordable, high-quality services (Yap et al., 2019).

There are at least 15 typical Android-based applications used by local administrations, as identified by the researcher. The findings of this study revealed that every regional office in the regional administration of East Java required a standardized application consisting of: (1) Public information application; (2) Application for population and civil registration services; (3) Health service applications; (4) Applications for business people, industry, MSMEs; (5) Application for tax amount, taxpayer, and tax payment; (6) Single-source licensing application, business and investment; (7) PDAM Application; (8) Educational apps; (9) Applications for motor vehicle test/test, public transportation, as well as mapping and navigation; (10) Digital library app; (11) Application for digital statistics; (12) Travel applications; (13) Personnel System Application; (14) Disaster and weather information application; and (15) Application for public relations/information/latest news.

The scope of the research was restricted to East Java Province. The object of this research was the local government's mapping of applications whose names contain the terms "city" or "district". The researcher has investigated applications for words containing neither city nor district. Regarding applications submitted by districts or cities whose names do not include "city" or "regency," a second cross-check with the regional communication and informatics office is suggested.

E. CONCLUSION

Local governments in East Java Province have a total of 362 m-government applications. Considering the number of Android-based m-governance applications, local governments' provision of digitally-based public services is not optimal, many areas in East Java lack Android-based applications for public services. According to the data, the highest concentration of mobile governance applications in East Java Province is in areas with a high Regional Original Income or so-called developed cities such as Surabaya, Malang, and Sidoarjo.

Community service-based applications comprise the vast majority of m-governance categories. The highest type consists of 86 applications that facilitate productivity. The other highest level of communication involves 46 applications. Only about 14% are concerned with business-related categories, such as business, travel, finance, shopping, and entertainment. Based on the categories' results, the researcher found a pattern of uniform application requirements needed by every OPD in East Java, namely 15 typical Android-based applications. The researcher suggests combining these 15 general applications into one all-regions application. Common applications should be simple and include all required content in all regions.

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