

# Qualitative Analysis of Digital Administration as an Obstacle to Access to Application-Based Public Services in Vulnerable Groups in Sidoarjo Regency

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## ABSTRACT

**Objective:** This study aims to study the role of digital administrative burden as a factor limiting vulnerable groups' access to application-based public services in Sidoarjo Regency. **Method:** The study uses qualitative case study methods to collect data from local governments and vulnerable community groups, analyzing the findings. **Results:** Digital public services in Sidoarjo Regency cause a learning burden, compliance burden, and administrative psychological burden for vulnerable groups. The findings show that application-based services still do not reach every level of society equally. **Novelty:** This study highlights the importance of creating digital public service policies sensitive to user diversity, simplifying procedures, offering hybrid service schemes, and increasing support for vulnerable groups to prevent further marginalization in the era of digital governance.

## INTRODUCTION

The implementation of digital transformation in public administration has become a global priority, seen as the main means to improve government work efficiency, transparency, and ease of public access to public services. Digital governance promises faster responses, lower transaction costs, and closer relationships between countries and their citizens. This view is reinforced by major international institutions such as the World Bank and the OECD [1], [2]. Today, more than ninety percent of the world's population uses digital platforms for services ranging from social support to population administration [3]. However, broad access does not automatically mean universal inclusivity. New research suggests that digital procedures can introduce new barriers for certain groups of people, especially when the user's skills are not considered [4]. In short, the digitization of public services is not just a technocratic solution; This is an area in which the dynamics of administrative power are becoming increasingly visible and debatable. This perspective demands a critical analysis of the social consequences of government digital policies.

In the public administration literature, this phenomenon is increasingly discussed through the concept of administrative burden, which is the cost that citizens must bear to access public rights and services [5]. This idea developed along with the acceleration of digital transformation and was then formulated as the concept of digital administrative burden. The concept refers to various cognitive, psychological, and administrative demands that citizens must face when interacting with digital technology in public

services [6]. A number of recent studies indicate that the digitalization process often triggers a shift in the administrative burden from the state to the community. This burden arises in the form of having to understand the application system, prepare and upload documents digitally, and deal with complicated and layered online service flows [7]. Although digitalization has negative connotations in the context of simplifying administrative complexity, empirical evidence suggests that the administrative burden faced by society is actually increasing in the context of the digitalization process. Digital administrative burden has also emerged as a key concept in the assessment of digital policies carried out by the government in the current context.

This is a global phenomenon that explains that vulnerable groups such as the elderly population, people with disabilities, people with low education, and people from disadvantaged economic groups are disproportionately impacted by the challenges posed by digital administration. Research in Europe and the United States shows that app-based services tend to assume device ownership, stable internet access, and digital navigation capabilities that not all citizens have [8], [9]. As a result, instead of increasing inclusion, digitalization has widened the digital divide in access to public services. OECD data (2023) shows that more than 30% of citizens over the age of 60 have difficulty accessing digital public services independently. This phenomenon supports the argument that the success of digital administration depends not only on the availability of technology, but also on the existence of policies that are responsive to the social situation of the community. Therefore, the social impact of digitalization is an important issue that needs to be addressed immediately in the study of public administration.

From a theoretical point of view, this study seeks to connect the theoretical framework of administrative burden with a theoretical approach to the digitalization of public governance. From the perspective of the theoretical framework of administrative burden, three main types of administrative burden can be identified. The three are the learning burden, the cost of compliance, and the psychological cost of interaction between the state and citizens [5]. Considering the evolution of technology in the public sector, the three types of administrative burdens are considered to be able to change in their form and volume as a result of the impact of digitalization of public governance [10]. This means that the focus of theoretical approaches to the digitalization of public governance has shifted from an optimistic evaluation of the impact of digitalization of public governance to a more negative evaluation from the perspective of public service users. Some researchers have found that the impact of digitization of public governance is a factor in increasing the learning burden due to the complexity of public service interfaces and the use of technical terminology in public service interfaces [11]. This means that the theoretical framework of public sector digitalization can be considered an important tool in the conceptual evaluation of empirical cases from a local level perspective of the public sector.

Although the amount of research on the international digital administrative burden continues to increase exponentially, the discussion of the extent to which

digitalization has a broad negative impact on disadvantaged groups continues. Several studies show that digitalization can have a positive impact on access to services for some groups of people, especially people with physical disabilities [12]. However, other research suggests that the absence of alternatives to the digital paradigm can lead to systemic exclusion [13]. The results of this study show a high level of contextual dependence on the impact of digitalization. Therefore, the need to conduct research to understand the specific dynamics of this problem is urgent. Assessments of conflicting research results also contribute to this theory of the problem. Therefore, this research is not only needed to confirm the results of research that has been conducted in the past, but also to contribute to the ongoing debate on this issue.

From the point of view of research methodology, most research on digital administrative burdens has relied on qualitative research methods to uncover the subjective experiences of citizens [6], [9]. The methodological approach used in this study is considered relevant because it allows researchers to explore the psychological and cognitive dimensions of complex and difficult to capture phenomena through quantitative measurements alone. A number of previous studies have relied more on surveys to examine citizens' perceptions of administrative burdens and their relationship with the level of participation in public services [7]. However, in-depth qualitative studies on this issue are still relatively limited, especially in developing countries such as Indonesia, leaving significant research gaps. The context of social, cultural, and digital capacity in developing countries is very different from that of developed countries. Therefore, this study aims to fill the research gap by using a qualitative research approach to comprehensively analyze this phenomenon.

With special reference to Indonesia, the digitalization of public services has been encouraged through a number of different e-governance policies in the last decade related to the theme of smart cities. Local governments are encouraged to provide application-based public services to improve the quality of public service delivery in the country [14]. A concrete example is the Sidoarjo Regency area in Indonesia, which can be defined as an area in the buffer zone of the metropolitan city of Surabaya that is known for its relative intensity in the provision of digital public services in the region. A number of administrative public services have been digitized in the region through applications. However, the digital literacy of residents in Sidoarjo Regency was found to vary significantly in various regional areas, especially in the context of comparisons between urban and semi-rural areas in the region [15].

The main problem that emerges is the limited access of vulnerable groups to application-based public services. Findings at the local level show that the elderly, residents with low levels of education, and people in disadvantaged socioeconomic conditions in Sidoarjo Regency often rely on third parties to access government digital services. This dependence not only incurs additional costs, but also gives rise to social pressure and psychological burden that is not small [16]. In addition, the lack of user-friendly application interface design also contributes to the high digital administrative

burden experienced by the people in the region. Therefore, the main objective of this study is to comprehensively identify the access problems faced by communities in the region.

Although there are a number of studies on e-government in Indonesia, most of them still focus on aspects of organizational performance, technology adoption, or general user satisfaction [14]. Studies that specifically link the digitalization of public services with the concept of digital administrative burden are still very limited. Furthermore, research that places the experiences of vulnerable groups as the main focus is almost unfounded, particularly at the local government level. This research gap shows that the social dimension of digitalization has not received adequate attention. In addition, there have not been many studies that integrate administrative burden theory with the context of local digital policies in Indonesia. This research gap is the basis for the novelty of this research. By filling this gap, this study is expected to be able to enrich the public administration literature in Indonesia.

This research aims to conduct a qualitative exploration of the role of digital administrative burden as an obstacle to access to application-based public services, such as the Sidoarjo People's Service System (SIPRAJA) and Services via Online Dukcapil (plavon), especially for vulnerable groups in Sidoarjo Regency. This approach helps this research better understand the lives of people who are usually marginalized in the evaluation of the impact of digital policies. In addition, this study aims to propose evidence-based interventions that have the potential to reduce the impact of digital administrative burden. This research is diagnostic and prescriptive, because it meets the needs of local governments in the region.

## RESEARCH METHOD

This study uses a qualitative approach with a case study design to analyze in depth the phenomenon of digital administrative burden as an obstacle to the accessibility of vulnerable groups to application-based public services such as sipraja and plavon in Sidoarjo Regency. The qualitative approach was chosen because it allows for an in-depth exploration of subjective experiences, perceptions, and social dynamics experienced by citizens in interacting with the digital public service system. In the field of public administration literature, this method is considered most appropriate to explain the non-technical aspects of policy, including cognitive and psychological demands and compliance issues, as these aspects are not adequately addressed through the use of quantitative methods [17]. Through the case study method, the opportunity to conduct an analytical study on the implementation of digital policies in the designated administrative area is created, in order to explain the relationship between policies, technology, and social factors in an integrated manner.

The location of this research is in Sidoarjo Regency, East Java Province. The location of this study was chosen because Sidoarjo Regency is a buffer zone of the metropolitan area of Surabaya City, which has shown a significant acceleration trend in

terms of digitization of public services in recent years. Sidoarjo Regency has launched various application-based public services in various government sectors, one of which focuses on managing the district population, especially related to permits and social services. The social composition of the region is very diverse, with varied educational backgrounds and ages. This research focuses on groups in society that tend to be more vulnerable to problems in the use of digital services, especially those who experience administrative barriers in Sidoarjo Regency.

The informants were deliberately selected to fit the research objectives by ensuring that the data from key informants came from marginalized community groups who had first-hand experience in using application-based services provided by the Sidoarjo Regency Government, to ensure that the data obtained represented what actually happened in the practical situation related to the research objectives. This research also involves supporting informants, namely local government officials to access the opinions of officials related to public services. In this case, informants are selected based on research objectives rather than the number of informants. It should be noted that this research was conducted based on the concept of data saturation, which is data collection continued until it reaches the saturation point, where new information becomes minimal to insignificant.

In collecting data, the researcher conducted semi-structured in-depth interviews, limited observations, and document review was used. The informant's subjective experience when interacting with public service applications was explored through in-depth interviews. The discussion is not limited to technical issues, such as operational issues, but also about how informants understand digital workflows and the psychological effects they experience during the process. The interview guidelines are based on the conceptual framework of administrative burden, with an emphasis on the cost of education, compliance, and psychology. Data analysis was carried out through a thematic approach, which included an open coding phase, axial coding, and iterative theme development. After all the interview results were transcribed verbatim, the informant's experience patterns were studied regarding the form, source, and impact of the digital administrative burden.

To understand the use of digital services, selective observations were made. This method allows researchers to directly observe how users interact with the app, including the involvement of other users who act as intermediaries to assist users in using the app. This study presents a careful evaluation, linking the research results with the theoretical framework presented. This research approach provides room for researchers to go beyond just surface descriptions. Not only to photograph the phenomenon that occurs, but also to unravel in more depth the mechanisms that trigger the emergence of obstacles in access to digital-based public services. The analysis process is carried out repeatedly and reflectively, so that the consistency of the findings is maintained while allowing for the deepening of the meaning of the data obtained.

## RESULTS AND DISCUSSION

The results of the study show that the implementation of public services based on sipraja and plavon applications in Sidoarjo Regency causes various forms of digital administrative burden that significantly hinder the accessibility of vulnerable groups. Not only the technical issues associated with using the app, but also the psychological, cognitive, and administrative compliance burdens that are interconnected. The results of the study show that the digitization of public services has not yet functioned as an overall inclusive tool. Significantly, technology is often not user-friendly. In this case, additional challenges are added to certain societies as a result of technology. This is a common view that is in line with the argument of Peeters, who states, "when digitalization is developed without considering the capabilities of different users, the bureaucratic burden can shift from the state to the society [6]."

Among the various forms of digital administrative burden, learning costs emerge as the dimension most strongly felt by vulnerable groups. The elderly and people with low levels of education often face difficulties in understanding the flow of services, technical terms, and stages of using the application. A number of informants assessed that the instructions for use were compiled assuming that all users have the same level of digital literacy. The impact is real. The service process becomes repetitive, time-consuming, and often even stopped before completion. This condition shows that the design of digital services has not taken into account variations in the level of digital literacy of the community. These findings are in line with the results of research by Larsson et al. (2023), who concluded that digitalization often increases the overall cost of learning, especially for those with a low digital skills base. In Sidoarjo Regency, the main learning burden is basically due to the complexity of the application and the lack of an effective, practical, sustainable, but friendly socialization process for application users who have different backgrounds.

As part of the application-based service procedure, the public must compile documents in a specific format, perform scans, and ensure that the quality of uploads is in line with system standards. For vulnerable groups who have limited devices or unstable internet access, these demands become difficult to meet. This condition encourages many informants to rely on the help of other parties, both family members and informal services, to complete the service process. This dependency increases the economic burden and creates new potential vulnerabilities, such as service uncertainty and the risk of abuse. These results are consistent with Baekgaard et al, who stated that administrative compliance responsibilities are often hidden behind seemingly simple digital processes in policy design [7].

The vulnerable group showed a significant dimension of psychological burden. The informants recounted feelings of anxiety, fear of making mistakes, and reluctance to try again after failing to use a public service application. These negative experiences slowly form the perception that digital services are complicated and unfriendly to them. The impact does not stop at the technical aspect alone but also the confidence of citizens

in interacting with public institutions has also decreased. These findings reinforce the argument of Moynihan et al. that psychological burden can hinder citizens' participation in public programs and services. In the context of Sidoarjo Regency, the absence of a fast and responsive assistance mechanism further emphasizes psychological costs as a latent obstacle in accessing services [5].

This study also shows that the three dimensions of digital administrative burden do not stand alone, but are cumulative and mutually reinforcing. A lack of understanding of the app increases the risk of errors, which in turn triggers anxiety and frustration. On the other hand, the social and economic burden increases as citizens depend on third parties due to the inability to meet technical requirements. This pattern suggests that digital management responsibilities cannot be understood in isolation. This is a comprehensive and interconnected experience in the digital environment of public services. Thus, vulnerable groups see the system as a complicated and difficult to access mechanism.

These results are in line with research conducted by Rahmawati et al. on inequality in digital literacy in East Java [15]. Therefore, the digitization of public services must be followed by a more contextual approach and in accordance with the target group and regional characteristics. Practically, the results of this study show that digital public service policies must be more inclusive. This will be achieved by simplifying the process, creating an easy-to-use application, and providing sufficient relief to vulnerable groups. Thus, digitalization can serve as a means of improving the quality of services without creating new forms of administrative exclusion.

Findings in the field show that there are four groups that experience digital administrative burden, such as the elderly and people with disabilities who have difficulty operating menu navigation and understanding technical terms in the system. In addition, there is no accessibility feature (audio/visual) on the Sipraja and Plavon Sidoarjo applications, so the public has an attitude towards Fear of making mistakes in using the application and not understanding the benefits of the application. People in the poor category and those who live in areas with difficult internet access also have other obstacles such as the absence of gadgets and internet quota fees, data synchronization problems in blank spot areas, slow systems and the absence of socialization of assistance in using the sipraja application and sidoarjo ceiling.

From the findings in the field, researchers summarized the impact experienced by the four groups, such as the elderly group who have to use the help of "brokers" or the help of other people who are actually very at risk of the security of the owner's data, as well as people with disabilities who are unable to access population services independently because there are no accessibility features. People in the poor category and those who live in areas where it is difficult to access the internet also have their own problems, such as not being able to manage population documents because they do not have gadget support, causing them to be disconnected from digital social assistance information.

## CONCLUSION

**Fundamental Finding:** The implementation of application-based public services such as Sipraja and Pavon Sidoarjo has not fully succeeded in expanding access to services for vulnerable community groups. The digitalization process has led to a strong digital administrative burden in the form of learning, compliance, and psychological costs, which cumulatively limit the ability of vulnerable groups to access services independently. **Implication:** Digital public services need to account for differences in digital literacy and access to technology. Policies and services should be designed to consider the varying capabilities of citizens, particularly vulnerable groups, and reduce the digital administrative burden. **Limitation:** The study highlights the gap between the government's perspective of digital services as efficient and transparent, and the real challenges faced by vulnerable groups who find it difficult to access services independently. **Future Research:** Future research should explore how to integrate user-centered design and policy evaluation in the development of digital services to ensure more inclusive access and mitigate the administrative burden on vulnerable populations.

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