IMPLEMENTATION OF ONLINE SINGLE SUBMISSION SOFTWARE APPLICATION IN YOGYAKARTA CITY: IDENTIFYING PROMINENT FACTORS OF ORGANIZATIONAL ASPECTS

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Abstract. The purpose of this paper is to identify prominent factors of organizational aspects in implementing online single submission (OSS) software application in Yogyakarta City. This study used a qualitative approach by applying NVivo 12 plus for analyzing and visualizing data obtained from the content of online media news, stakeholders’ statements, and documents of government regulations regarding investment licensing service. This study identified six factors in implementing e-government, including regulation, technology, benefits, structure, leadership, and resources. This study offered four propositions regarding the six factors. This study also considered directions for next research and suggested practical implications.

Keywords: Smart Living; Culture Values; Quality of Life; Yogyakarta City

Background

According to Government Regulation No. 24, 2018, online single submission (OSS) is a business license issued by OSS institutions-for and on behalf of the minister, leader of the institution, governor, or regent/mayor-through an integrated electronic government system. The Yogyakarta City Government has been implementing the artificial intelligence (AI) software in a way to integrate the software to Jogja Smart Service (JSS) program (jss.jogjakota.go.id). The Government concerns citizens who complained of poor public service ([1]; [2]; [3]; [4]; [5]; [6]; [7]; [8]) and then tries to enhance the quality of public services through high technology of e-government ([9]; [10]; [11]; [12]).

Previous studies related to the implementation of e-government in Indonesia focused on three aspects. Firstly, the studies revealed the technical feasibility of implementing e-government [13];[14];[15]. Secondly, the studies predicted the attitudes and behavioral intentions of local government officials in adopting artificial intelligence [16]; [17]. Finally, the previous studies examined the attitudes, behavior, satisfaction, and trust of the public in using the tool to obtain government services [18]; [19]; [20]. However, there are gaps in the study of e-government service implementation, where the studies did not address organizational factors. According to scholars, organizational factors determine the success of e-government service implementation in several countries [21]; [22]. Therefore this study fills in the knowledge gap by identifying factors of
organizational aspects in the implementation of the AI software application. This study addresses the following question: what are the prominent factors of the organizational aspect of the implementation of the AI software application in Yogyakarta City that often appear together in data?

The design of this study is a qualitative research design with a case study in the Yogyakarta City Government in 2020. This study obtained data from online media, stakeholders’ statements, and government documents. This study used the software application of NVivo 12 Plus to analyze, visualize, and categorize data [23].

Implementation of E-Government Services and Artificial Intelligence

E-government is a synonym of internet government, digital government, connected government, and online government. E-government is the use of ICTs by government agencies, such as the internet, extensive area networks and mobile computing, which can be utilized to improve the relationship between government agencies and other government agencies, businesses, and citizens ([24]; [25]; [26]; [27]; [28]; [29]; [30]; [31]; [32]; [33]; [34]). The use of technology is to improve organizational performance ([35]; [21]; [36]; [37]; [38]).

The extension of digital transformation, digitization of information, and development of big data are known as artificial intelligence. Public sector organization are particularly engaged in the provision of policy and public services by leveraging artificial intelligence capabilities [39]. Big data of business license services covering 25 ministries / institutions, 34 provinces, 514 regencies / cities, 13 special economic zones, 4 free trade zones and 111 industrial zones in Indonesia were used in the online single submission (OSS) system.

Organizational Factors Influencing the Implementation of E-Government Services

The European Union (EU) stated that a government that wants to improve public services and participatory democracy must use e-government services combined with organizational reform [40]. Factors influencing the implementation of e-government services projects in Kenya include organizational structure, distribution of authority; an organizational strategy to align information systems, resistance to change, human resource capacity, management, organizational culture, and collaboration [33]. The relationship between e-government and organizational forms of bureaucratic change or institutional arrangements, such as formalization, centralization, and communication channels, organizational actors, e.g. individual roles, organizational cultures, and organizational strategies ([21]; [41]; [27]; [26]; [42]; [24]).

Result and Discussion

Description of OSS Implementation

Figure 1 shows the development of the number of OSS users in Yogyakarta City receiving various kinds of business licenses from 2018 to 2020.

Figure 1. Cumulative users per type of investment licensing services July 2018 – July 2020
Figure 1 showed the number of business licenses carried out through OSS from July 2018 to July 2020. In Yogyakarta City, the highest number of licenses is the number of trade licenses (SIUP) of 1146 licenses that have been processed through Yogyakarta City OSS software application. Besides, the Tourism Business Registration License is the second-highest number of 252 permits. This permit is a representation of the city of Yogyakarta as one of the tourist destinations in Indonesia. At the same time, the licenses that have the least amount are the Hospital Operating Permit, Electricity Support Services Business License, Food Crop Business License and Security Services Business License. Since July 2018, each of these permits has a total of 1 permit submission.

Prominent Factors in OSS Implementation

This study used NVivo 12 plus for identifying prominent factors in OSS implementation. This tool is useful for displaying and visualizing the appearance of shared factors in data.

Figure 2. Prominent Factors of OSS Implementation
In Figure 2, the nodes are the prominent factors in OSS implementation in Yogyakarta city. From Figure 2, the study confirm that prominent factors of OSS implementation often co-occurs with factors regulation (frequency = 49%), technology (frequency = 21%), benefits (frequency = 13%), structure (frequency = 8%), leadership (frequency = 5%), and resources (frequency = 4%). The results of the data showed that the higher the percentage of co-occurrence factors, the more attention in the news of online media, statements of stakeholders, and contents of government documents.

Figure 3 below was a quantitative mapping in the form of a radar code matrix. The matrix coding used a scale of 1-9, which interpreted the data that the larger the scale, the more urgent the factors in the implementation of OSS software applications. Figure 4 provided information that regulation had an enormous scale, which was nine, and then technology had a scale of 3. The findings mean that regulation and technology are critical words in implementing one form of e-government services.

**Figure 3. Matrix Coding of Stakeholders & Online Media**

After processing data through NVivo 12 plus, this study found that prominent factors in the implementation of OSS software applications, from the most to the least, are regulation, technology,
benefits, structure, leadership, and resources. Besides, this study offers four propositions. First, the implementation of the OSS software application requires policies and regulations that contain authority, procedures, and obligations. Second, the implementation of ICTs requires sophisticated technology. Third, the implementation of the e-government services must have benefits for government, private sector, and citizens. Fourth, the implementation of the application requires a flexible organizational structure, adaptive leadership, and adequate resources. The findings of this study add new insight and complement previous theories regarding the implementation of e-government services.

This study has the following practical implications. First, this study found that regulation is the main keyword in implementing OSS software applications. This finding implies that the central government should further clarify policies and rules in such a way that local governments can have specific duties and authorities in preparing standard operating procedures and the duties of employees in implementing the ICTs. Besides, the private sector and citizens can also know their rights and obligations in obtaining public services. Second, this study also finds that technology is the main keyword in implementing e-government services. Therefore, local government agencies must prepare and strengthen the use of advanced information and communication technology so that the business sector and citizens can easily access these public services.

This study has limitations and suggestions for future research. First, because there is currently a covid-19 pandemic outbreak, this study does not use primary data, namely interviews with government officials and users of public services. Consequently, this study may not be able to in-depth explore the thoughts and attitudes and actions of the stakeholders in the implementation of the OSS software application. Therefore, this study suggests further research to conduct field studies when the pandemic has disappeared. Second, this study has limited data regarding online media news, statements of stakeholders, and documents of government regulations. This data scarcity may be due to investment licensing service, which is not exciting news. Therefore, this study suggests that future research should choose the type of public service that many people would prefer to talk about.

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