Government-Owned Digital Services to Overcome the Spread of COVID-19, Case in Indonesia

by PASCASARJANA UIR

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ABSTRACT

The Indonesian government faces challenges in running public services during the COVID-19 pandemic, the pressure to implement digital-based service solutions so that public affairs within the government-run. Our research analyzes social media discourse to understand the joint production of digital-based public services during the COVID-19 pandemic. Our research uses a qualitative method, using a netnographic method approach that is referenced from the Twitter social media data set and analyzed using discourse as a flow to analyze citizen responses to the contact tracer application (CTA) (pedulilindungi.id) owned by the Indonesian government through the Ministry of Health of the Republic of Indonesia in minimizing risks. Our research contributes to the accountability sector for digital-based public services. It provides a scientific understanding of public trust in influencing the development of co-production of digital-based services. This study found a high public sentiment toward the care protection application and a lack of trust in the government's actions in overcoming the COVID-19 problem, especially running CTA. Public responses from Twitter users express disappointment and doubt that data is always not updated. In addition, the digital divide is a problem faced by the public, who have little understanding of the care-protected application services. In the end, we realized that this research has limitations in capturing the public's response directly outside social media to implement digital-based service co-production. We recommend further research to see the public reaction from other approaches, such as social media outside of Twitter.

1. INTRODUCTION

The first time COVID-19 appeared in the city of Wuhan, China's Hubei province at the end of 2019, then the spread of COVID-19 accelerated to various countries [1]. Famous scientists have described the coronavirus outbreak as the severe acute respiratory syndrome virus coronavirus 2 (SARS-coV-2), which is called COVID-19. A number of symptoms result from the COVID-19 virus, such as fever, dyspepsia, pain, a dry cough, and shortness of breath. COVID-19 has the potential to be deadly, attacking the human respiratory tract and causing multiorgan dysfunction [2, 3]. Older humans are more susceptible to COVID-19 attacks, especially those who have pre-existing complications. As the World Health Organization (WHO) officially declared the Corona virus a global pandemic in early March 2020 [4].

The lack of maturity in crisis management or mitigation of non-natural disasters by the state can determine whether COVID-19 spreads quickly or slowly [5, 6]. Indonesia took the quick step of implementing e-government tracking and tracing by creating the PeduliLindungi application to monitor the spread of COVID in all regions. Using the application has a significant influence on understanding COVID-19 prevention in Indonesia [7]. An application developed by the Ministry of Transportation and Information in April 2020 will make it easier to find out the whereabouts of people infected with COVID-19 and the zone of transmission of COVID-19. [8].

Promoting digital-based service technology in the public sphere can form a two-way interaction between the government and citizens [9]. Regional devices are slowly adapting traditional service patterns to digitization [10]. Government productivity is required to provide service innovations by digitizing various aspects of government affairs based on accountability by involving interested actors. Co-production development needs to adjust interactively between stakeholders, such as mutual engagement and collective cognition [11], as well as increasing public oversight of government activities and developments in social issues.

During the Covid pandemic emergency, it requires government administrators to be able to develop digital-based service sector innovations and joint production in a crisis. The pandemic forced the government to adopt new instruments to provide services to the public amidst public pressure and increasingly stringent public supervision. A good government is measured by its ability to deliver new governance during the COVID-19 pandemic but can be received positively by its citizens [12]. Co-production is a concept that plays a vital role because several government policies have been successfully

influenced by the participation of citizens voluntarily working together, such as co-production in the health sector [13].

Our observations regarding the literature on joint production of public services during the spread of the COVID-19 virus are still limited [13]. We find research that discusses the impact of cooperation in governance management during a pandemic [14]. The following study analyzes voluntary citizen participation in co-production [13]. Then we also find previous research on applying the UTAUT model in co-production in the digital service sector [15, 16]. To support the acceptance and willingness of citizens to be involved, digital service technology must take a solid strategy to increase effectiveness, bypassing formal and rational aspects [17]. The UTAUT model suggests that technology acceptance not only relies on user opinions or the role of the social environment but requires collaboration and citizen involvement to be significant [18].

The UTAUT model was a model that was very relevant in the nineties in many sectors, such as TAM, the technology acceptance model, with the consideration that the UTAUT model was relevant in answering user expectations for technology-based services [19]. The UTAUT model is frequently used to evaluate the public's reasons for accepting technology [20]. The UTAUT model analyzes many technology-based services, such as predictive analysis [21], capable of providing recommendations [22], dan chatbots [23].

In the end, in our research, we explored to answer the question of how public acceptance always changes from time to time, starting from the experimental design before use and post-use using the unified theory of acceptance and use of technology (UTAUT) model [19]. UTAUT has always been of interest to many authors as they analyze the acceptance of technology in several research sectors [24, 25].

Considering the complexity of the social environment as a factor influencing technology acceptance discussed by UTAUT, our research focuses on answering this question related to how citizens respond and view the joint production of digital-based public service technology during the COVID-19 pandemic. More specifically, we analyzed the discourses that were discussed by citizens on online social media about the care-protect application that the Indonesian government developed at the time of the COVID-19 outbreak. Discourse is a form of verbal (written) communication language designed to generate responses from citizens [26]. Discourse is a barometer to measure the insights and perceptions of citizens. The narrative built is also more general and easier to understand [27], and discourse can extract social reality comprehensively [28].

Our research uses a netnographic approach [29] and discourse analysis [30] to capture the meaning of the narrative developed by citizens about the care-protect application on Twitter. Our research contributes to the world of literacy on digital-based public service accountability [31, 32] in several stages. First, we mobilized the UTAUT model during the COVID-19 pandemic and proved the importance of social perception in influencing the success of digital service co-production. Second, our research analyzes the need for accountability in the joint production of the public service sector by proving that there will be potential for co-production to fail without poor accountability. Finally, we analyze co-production separately and the impact of social complexities, political developments, policy strategies, debates, and discourses [33].

In detail, we present some parts of the theoretical foundation of this research. Section 3 outlines Indonesia's empirical context for caring for protection socialization during the COVID-19 pandemic. Section 4 describes the methods and approaches chosen in this study. Section 5 shows the main findings of this study. Finally, Section 6 discusses the implications of our findings and provides conclusions.

2. LITERATURE REVIEW

2.1 The concept of shared service co-production

Production in the public sector has become attractive in scientific studies, and it is a manifestation of collaborative governance and participation in a democratic sphere [34-38]. The concept of co-production has been widely requested by scientists in analyzing the digital-based public service sector [39]. Co-production is an innovation in the public service sector aiming to increase effectiveness and efficiency, and public access to co-production is voluntary [40]. During the COVID-19 pandemic, joint production became important as an intermediary media between the government and citizens in accessing information about the development of COVID-19 cases. The contribution of the combined output to the government and citizens is in the form of data on the number of cases of people with COVID-19 and information on regional zones with a high number of COVID-19 cases [41].

In the study of public administration, co-production is formed by various actors together to deliver the services desired by these actors [37]. The findings of many studies show that co-production programs have contributed to various aspects such as the budgeting system [42], the education system [43, 44], the environmental system [45], health systems [46, 47], environmental safety systems [48] and transportation systems [49].

With the complexity and dependence of the service sector co-production, it is necessary to know the boundaries of the permeable co-production domain in practice [50]. When the country is in an emergency, several co-production services must be inclusive and easily accessible to citizens because a crisis can affect all sectors of community needs [51, 52]. Such as emergency vehicles, the COVID-19 pandemic does not only affect the health sector but also affects other sectors such as transportation. Responding to the scope of the concept of joint production in the public service sector, our research is one of the literature that discusses digital-based public services using the theory or concept of collaborative production to improve the application of the concept of joint production in public administration.

The involvement of multi-sector partners such as citizens, companies, community organizations, and NGOs is essential in supporting the concept of joint production, especially in the health or medical sector [53]. The involvement of many supporters such as the government, industry players, and law enforcement [54] will strongly influence effective and efficient joint production. The transformation of digital-based services, such as co-production specifically for the health sector, greatly influences cultural, structural, and resource changes [35].

2.2 UTAUT and the social aspects of co-production of public services

The Unified Theory of Acceptance and Use of Technology

(UTAUT) was pioneered [55-57]. The scope of UTAUT is the diffusion of service sector innovation and the adoption of public service technology. The UTAUT model was developed by Venkatesh, which hypothesizes that technology adoption by individuals is influenced by individual expectations of the benefits of technology, such as the convenience and facilities provided by the technology. The UTAUT model helps analyze public responses to technology in anxiety, trust, personality characteristics, and others [58]. The UTAUT model also motivates other researchers to look at the motives for technology adoption that connects citizens with the government [58-60].

The UTAUT model includes four indicators, namely performance expectations (PE), effort expectation (EE), social influence (SI), condition facilitation (FC), and behavioral intention (BI) and their explanations; Performance-Expectancy is a person's belief in the performance of the technology system as well as about one's belief that new technology can provide benefits and advantages in everyday life [61, 62]. Citizens as technology users must adapt to innovation systems when the technology improves their performance [63]. Effort expectancy is the convenience and comfort provided by the new technology. Previous research has proven that business expectations and actors' intentions are determinant indicators of new technology development [64]. The condition of the facility is also a determinant of the success of the latest technology, and the extent to which the facility can provide something new in technology-based services [65, 66].

The four critical elements recommended by the UTAUT model include performance expectations, effort expectations, social influences, and facility conditions. These four keys influence residents' intention to use technology [57]. In its development, UTAUT also provides indicators of residents' motivation to use technology, such as hedonic motivation, costs/prices, and habits [57]. The actor's intentions are significantly positively influenced by a sense of satisfaction, trust, performance expectations, and business expectations [67].

Since the emergence of the UTAUT model, the model has been widely used to measure the intention of individuals to make decisions to adopt technology in the field of interaction whiteboards [68, 69], short-range information technology [70], health [71], home telehalt service [72]. The UTAUT model provides a framework for measuring technology acceptance in the social environment and can describe its users' characteristics. Thus, our research uses the UTAUT model as a theoretical basis to analyze the public's response to digital services in the health sector (care for protection).

2.3 Empirical context

2020 is the beginning of the spread of the COVID-19 virus worldwide. Due to the distance, several countries have taken lockdown measures to protect the safety of human life and health during the COVID-19 pandemic with an emergency status. After the spread of the corona-19 virus decreased, the government took steps by reopening many sectors, especially the economy, opening the economic activities of citizens with the guidance of the COVID-19 virus-prone map system [73]. Economic recovery after the COVID-19 pandemic faces several challenges surrounding the people's economic recovery.

The use of technology is part of the government's strategy

to respond to and cope with the spread of COVID-19. The pressing need for digitization accelerates the digital transformation of the government service sector [9]. Efforts made by the government for economic recovery and the new normal, the Indonesian government launched digital services that are integrated into the national defense system, namely the care-protect application. CareLindung application is a kind of contact tracker application abbreviated as CTA. CTA tracks the spread of citizens infected with the corona-19 virus [74]. Caring for the protection of digital service is a form of joint production based on citizen volunteerism. CTA was socialized early in some western countries. For example, the Chinese government has promoted its citizens [75], and the state of Qatar has required its citizens to use the application [76]. Applications can be understood based on their benefits if residents have downloaded, installed, and run the application [74]. Empirical evidence shows that the effectiveness of co-production of digital-based services is only around 60% of the total population [77].

Initially, the Indonesian government developed the care-protect application when the COVID-19 pandemic hit Indonesia in April 2020—adopting co-production such as CTA as part of the government's strategy to deal with the pandemic [73]. Including the UK is a country that has adopted CTA [74].

Some moments of the government's choice to develop a CTA; The first launch can be initiated through a community that can receive a proper CTA immediately. The two governments need to socialize the added value and benefits of using CTA, such as information about the spread of COVID-19. Third, by offering cheap or free fees to CTA [74], such stages significantly influence the intentions of Mobile government users [16].

Another important thing related to the development of CTA is the aspect of security and convenience of citizens in using e-government services [16]. An application such as a CTA in the Chinese province that monitors the health status of its citizens from the COVID-19 outbreak [78] resulted in its findings that there were concerns about the citizens of Yang province regarding weak state surveillance of citizens' data. Thus, the government is given the burden of aligning the interests of citizens and the security of citizens' data [16]. In a more concrete conclusion, CTA can be successful if it supports trust and high voluntary participation in the government's digital services [79]. Our research aims to capture the development of empirical evidence about citizens' perceptions of accepting co-production as manifested by citizens on social media.

3. METHODOLOGY

Government policies such as restrictions on public movement and vaccination can strengthen the importance of digital services such as the care-protect application. Social media is a place for citizens and the government to discuss the handling of COVID-19. Social media plays a role in facilitating the discourse of government-owned digital services [80, 81]. Our research also uses the Netnography method [82] and discourse analysis [83] to analyze the public's response to the launch of the Care Protect application.

Social media is a place for public interaction to discuss many aspects [84]. Social media can be used by forums that fight for the value of accountability in shifting agendas of

economic, political, and social issues [85], then overcome administrative barriers that still use traditional patterns [86]. Twitter is a platform that often talks about trending contemporary issues [85]. Other social media forums, such as Facebook and Linkedin, also provide a forum for discussion. Still, Twitter feeds a more critical nuance that is more transparent, providing semi-formal and brief comments [85].

Previous studies have shown that social media can build and communicate accounts that comprehensively reflect public sentiment [83, 87]. Multidisciplinary science has used discourse approaches and netnographic methods [80, 82]. such as dialogical accounting studies, stakeholder engagement, social reporting, and accountability [80, 85, 86]. The netnographic method observes textual discourse and maintains the authenticity of every discussion created and shared freely by many people [80, 88]. Netnography is very helpful in analyzing social phenomena by classifying them based on themes, patterns, and propositions. The netnographic method is equipped with theoretical sampling principles and generalizations and distinguishes between systematic sampling and statistical conception [89].

We consistently use the netnographic method to build and collect comprehensive data in analyzing public discourse on the introduction of caring for the protection applications in public. Twitter social media continuously produces big data that contains public opinion online and freely. We also developed multifaceted as a guide for determining the direction of information. Table 1 below describes the three stages in data collection, coding, and data analysis.

Data: Consistent with the selected data source, namely content on Twitter as a public arena, by identifying two directions of discourse related to our research. The first is "government-to-citizens," which is related to promotion by the Indonesian Ministry of Health using the official Twitter account belonging to the Indonesian government. We are interested in the community's response via Twitter to the announcement of introducing the Care Protect application when the trial application is released. The following message was published on the Indonesian Ministry of Health's official account (297 responses). We have collected a number of tweets on Twitter using the hashtag #pedulilindungi. Next, we collect public response data on the @pedulilindungi account, which belongs to the Ministry of Health of the Republic of Indonesia. The data collected is only tweets on accounts and hashtags that we have previously explained, with the aim of limiting data that is not relevant to this research.

"Let's download the #pedulilindungi application. This application protects yourself, your family, and other closest people and stops the spread of COVID-19. Available on Google Play & AppStore" - @pedulilindungi (Ministry of Health of the Republic of Indonesia).

The data collection we did in stage 1 and the initial analysis around this discourse. Overall, we collected all the Twitter messages from official government accounts with numbers.

Coding stage: The tweet results are encoded using the Nvivo 12 Plus application focusing on tweet content. The research team has undergone a selection process to maintain the data's accuracy relevant to this research's needs. A code is entered into the data set when a match is made between coders. As reinforcement for appropriate interpretations, we then carried out several stages of analysis [90], focusing on the meaning of tweets [91] rather than actual conditions and the words used by informants [89]. Some tweets can be done on more than one defined code.

Table 1. Research analysis stages

	Stage 1: Government-to-citizens		
Objective	- Public reaction to the official government account regarding the introduction of the Cares Application on Twitter social media		
Approach	- Identification of tweets and patterns of public reaction : Collection of tweets and retweets and comments from official government accounts		
Data acquired	: @Pedulilindungi		
Stage 1 analysis	: Encoding data content sourced from the unit of analysis: individual tweets (1566 codes)		
	Stage 2: Citizens-to-citizens		
Objective	- Recognition of public voices - Exploration of data richness and identification of themes		
Approach	: Search by search by keyword "lawancovid19" or "cares for protection"		
Data acquired	: 1566 tweets in 297 discussions Twitter		
Stage 2 analysis	: Data coding originating from individual tweets: Identification five additional initial themes: individual choice, coercion, interoperability, procrastination (unfulfilled commitments, mission drift)		
	Stage 3: Analysis, interpretation and theorization		
Objective	- Creation of integrated topic understanding - Contextualization of themes and generating the "big picture"		
Approach	- Multiple rounds of analysis - Topic identification fusion		
Data	: Stages 1 and 2 collect data combine		
Outcome	: Systematize the theme code into eight combined topics: "performance and security," "effectiveness," "decentralization." and "freedom and abuse"		

Next, we coded the substance of twitter messages to find emotions [92]. Emotional observation shows the writer's feelings towards the context of the problem, thereby showing affirmation, indifference, or partiality. Positive and negative sentiments are identified in statements that clearly demonstrate belief by tweeting. Other tweets are coded neutral. Examples of neutral messages such as sharing some information about caring and protecting that are not included in positive or negative sentiments. Here's an example of a tweet with negative emotion.

"I'm confused about caring to protect, submitting complaints wherever there is no response. Please respond to people's complaints. I asked to email but couldn't, told to call, but no response. Where else should I file a complaint?"

Figure 1 below shows four public sentiments through social media tweeters towards the care-protect application, including 10.51% statements with a very negative view, 32.02% moderately negative, 28.52% relatively positive, 28.94% very positive.
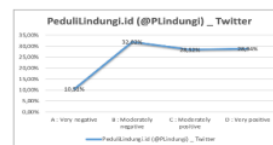

Figure 1. Social media sentiment analysis of care-protect application

Analysis: This study uses a discourse analysis approach in interpreting and compiling codes. The concept of 'discourse' is a textual and symbolic representation of ideologies, beliefs, and practices embodied in policy [93]. For us, discourse analysis is necessary to detail how the analytic process transforms raw data to arrive at an informed interpretation [94]. Discourse analysis as a constructivist approach to qualitative research positions language as constitutive of and determined by social relations and power structures [95]. Discourse analysis usually focuses on analyzing the relationship between discourse and social institutions, such as power relations, ideology, and social identity, on finding solutions to problems [96].

Furthermore, the analysis in stage 3 explains the findings of the interaction between discourses from the government to the public and from the public to the public. Discourse analysis of the government. The third stage is in line with the theory that eight interesting topics were found from the initial 20 topics (Table 2). The eight dominant issues that emerged were divided into two. Namely, four were categorized in technical aspects and four in social aspects. Comprehensively, the theme or topic is analyzed based on the UTAUT concept and social elements (trust, accountability, and social environment). The frequency of each issue being collected in data is then calculated to find more profound understanding results. The way that section titles and other headings are displayed in these instructions, is meant to be followed in your paper.

We perform the stage of compiling findings from each tweet around the most discussed topics, starting from topics that talk about technical issues to topics that address aspects of social impact. Frequency basis, we will group cases based on the highest number.

Table 2. Combined topics and dominant frequency

Technical aspect: Performance and effort expectations		Social aspect: Trust, accountability and social environment	
Theme	Frequency	Theme	Frequency
Decentralization	1.71%	Accountability and Transparency	2.99%
Effectiveness	34.19%	Freedom and Abuse	2,99%
Individual choice	14.53%	Distrust	12.39%
Performance and security	25.64%	Privacy and Surveillance	5.56%

4. RESULT AND FINDINGS

We analyzed the public discourse on Twitter social media with the findings of a high public response to the Pedulilindungi application developed by the Indonesian government. We observe a polarization in the discourse in every government tweet and the tweets of fellow citizens. Two factors influence the polarization firstly the debate about the government's not seriousness in creating the care-protect application. The second debate is about population data that is out of sync with the care to protect application during the public's dependence on the application for administrative purposes of travel in Indonesia.

In this section, we use UTAUT analytical knife to answer research questions about how citizens respond to digital-based

public services during the COVID-19 pandemic. It further recognizes the role of the social environment related to trust, and accountability between stakeholders. In the following, we will present our research findings on public perceptions of the launch of the care-protect application; first sub-chapter technical aspects 4.1 and both social elements 4.2.

4.1 Technical aspect: Performance and expectations

The presence of digital-based public services can be accepted in the community if the e-government services can impact solving problems in the public service sector [97]. Second, all people can access digital-based public services easily [98]. So, in this subsection, you analyze topics related to the technical aspects of care-protect applications, topics related to (de)centralization, security, effectiveness, and personal requirements.

Several data sourced from tweets we have analyzed, residents regret that the input data is not in sync with the results published on the Care Protect application. For example, vaccine certificate data is slow to be published in applications, while urgent community needs require vaccine certificates for administrative purposes. Some tweets from netizens gave negative sentiments:

"How to change the wrong date of birth in a digital certificate. The paper certificate given after the vaccine was correct, but when the digital certificate was sent, the date of birth was wrong (inverted)" @nyoman_ria.

Next, we analyze the performance and security of the care that protects the application. Security and performance sector expectations are important to minimize the occurrence of malfunctions such as misuse of application data and care to protect. For the first time, the Care Protect application was promoted through social media, including Twitter. The first tweet was about the government's recommendation to the public to download the Care Protect application. Besides that, there was also a tweet about information about several of the Care Protect application service features. The public's response to the launch of the Caring Protect application in the first tweet was still positive, followed by questions about the usability of the application. This indicates that the public welcomes the public's enthusiasm for applying new digital services to tackle COVID-19.

In practice, it turns out that the government cannot ignore the public's disappointment about the weakness of the care protection application at work. Several application features do not run optimally. A public tweet expressed his disappointment over the issue of data not being updated on the care protect application on his cellphone.

"It has been downloaded, but the application is crashing, so open it and exit again. Please fix it......" @Ressy62186975" and "The validity of the data is doubtful; it's even making people anxious about who installs the application." @imbams. "Most of the fairness we receive, but from the fairness, there is no improvement. I was told to download only the problematic turn to disappear from the face of the earth. Make it hard for people. There are many obstacles that I receive for the vaccine only! I was told to email. I've emailed and told the phone, "To be picked up." @FikaOktavia13.

Several public replies in the first tweet about Care Protection related to public anxiety about vaccine certificate data that is not updated, the Care Protection application that always crashes, data errors that cannot be corrected, and the information on vaccine schedules offered by Care Protecting

is not clear.

The application's ease is the government's expectation of digital-based services. The ease and difficulty of using the application are problems in public complaints. Such as user errors in inputting mobile phone numbers, so it is difficult to change the data, especially among the elderly and women.

"At the time of the second vaccine, a relative had the wrong cellphone number. What was the solution? To download the vaccine certificate. Thank you." @dyan_swas and "What is the solution if the first registered number is wrong" @attiin21.

It takes concrete efforts by the government to overcome the lack of public understanding in using applications, namely by offering training or increasing the socialization of application procedures. Because remember that the Care Protect application is an optimal e-government service during the COVID-19 pandemic. The government has serious challenges in addressing the digital divide in the e-government sector [99]. The right concrete solution to overcome the digital divide problem is to offer it to the public with a manual method. Still, the Indonesian government does not have other services offline for vaccine certificates and other data.

The next discussion is related to the effectiveness of the Care Protect application, so the public question regarding the point of the Indonesian command is whether the Care Protect application is the right solution to respond to the COVID-19 problem. In particular, the public has doubts about the care protection application, which is based on the security of the data entered into the care protection application. Public and private data is an initial need for care to protect applications, but the leakage of such data is an excessive public concern.

"Hello, care, protect me. I have failed five times with vaccines because the vaccine care provider reads that other people have used the NIK. Care to protect also cannot—attached image. Please provide a solution because vaccines are important and urgent" @sunuwardana.

Regarding the misuse of cell phone number data in the Care Protect application, the government has not provided certainty about their data security. Data security is the essential thing that the public needs in the concept of e-government applications.

Specifically discussing the area of public expectations in terms of technical or application performance regarding the technical protection of the service, we conclude that many public responses from Twitter users express disappointment and doubt that data is always not updated. In addition, the digital divide is a problem faced by the public, who have little understanding of the care-protected application services.

4.2 Social aspect expectations; Trust, accountability

In addition to discussing the expectations of the social aspect, social aspects are also important, and public trust in the care-protect application is an essential segment for us to analyze in this section. From the Twitter data analysis, four essential points always appear in public tweets; mistrust, accountability, transparency, and freedom/abuse. The discussion about public trust in government digital services in dealing with COVID-19 is the hottest issue in 2021 until now. Here we can discuss four findings from the public response to the first Twitter media regarding trust;

"I think an independent agency should monitor this because I have high doubts about government oversight considering there are many data leaks when monitored by the government, namely care about the protection and so on" @callmehunter12.

Furthermore, several tweets also indicate the potential for dysfunction in the care protection application. The dysfunction is the misuse of identity by public persons to manipulate travel administration. In addition, it is also difficult for application users to delete their data in their applications which are stored in a centralized system.

"As far as I know, the vaccination location cannot be changed by the system. Once the data has been entered, it cannot be changed. Unless you want to delete data to care for protection, but that's an even longer procedure" @jihansalimah.

Solution to the problem of difficulties in deleting personal data in the Care Protect application, the government has not been able to provide a solution to the Care Protect application service.

The theme of public trust also appears frequently in the data we collect. Public awareness of government-owned digital services is natural because trust between two parties is an essential requirement in joint production services [100]. The public's indifferent attitude is also shown in his tweets on Twitter which contain a lack of trust in the Indonesian government's care-protect application. Such a critical public response is a general description of the government's handling of the COVID-19 pandemic [79]. The following is one of the public tweets about distrust of the care protection application;

"It's useless to download, and I want to check the certificate, but I can't. I've sent an email, but it still doesn't work; the application is fake. They say how come the government program is an amateur application, that's clear" @SunuArdja. "I don't trust the security of data protection. Moreover, to register, you must provide a photo of your e-KTP. "@MohArifWidarto.

Tweets that suggest distrust of citizens are related to data security that is easily leaked, followed by the government's ability to maintain applications that are easy to error, making it difficult for the public to provide vaccine certificate services. A number of these comments show public distrust that the government can guarantee the privacy of citizens' data. In addition, public concerns will be left without a clear instrument.

In the next paragraph, we analyze the accountability and transparency of the care-protect application belonging to the Indonesian government. The discourse on the care-protect application is still not optimal in disseminating the care-protect application, such as introducing the care-protect position as a vital application in handling COVID-19 or only supporting applications for digital-based administration. During the socialization of the application, one of the residents made a tweet questioning the process of launching the care-protect that was not open enough, both in the financial sector and the vendors, who were not well known to the public. The following is the tweet.

"Now. What is the care budget? Who is the vendor? Who with? What did you do last night? @ruliemaulana".

The public tweet above has the potential for lack of transparency felt by citizens in procuring the care-protect application. Even though the government has not informed the public, at least citizens need to know that the Care Protect application involves external parties in the development of the Care Protect application.

Next to the idea of app freedom and abuse, we found citizens' tweets about concerns about app abuse;

"Hello, care, protect me. I have failed five times with vaccines because the vaccine care provider reads that other

people have used the NIK. Care to protect also cannot—attached image. Please provide a solution because vaccines are important and urgent" @sunuwardana.

Indications of misuse of citizen data occur in the care-protect application, data that is prone to misuse of applications such as vaccine certificates. Unscrupulous officers use potential population data to trick officers when traveling during the season of restrictions on residents' activities outside the home.

In short, we can conclude from this social aspect that the care-protect application has complex and varied problems. Technical issues, individual freedom, accountability, and trust are often discussed. More specifically, we provide an analysis that the government has not been optimal in disseminating the care to protect the application to the public about its role and function.

5. DISCUSSION AND CONCLUSION

During the COVID-19 pandemic, the government is trying to provide optimal services for its citizens, one of which is digitalization services. Our research aims to see the public's response regarding supervision and citizens' concerns about the care to protect the application. Our analysis provides something new in the research world on its influence on social aspects of digital services, such as accountability, trust, and user confidence [101]. Our research examines the ability of digital services to work optimally if they receive positive support from the community. However, the response of Indonesian citizens shows a complex character towards the care-protect application.

In the following sections, we will discuss and describe the findings of this study; co-production: our research is one of the contributing factors in the world of literature regarding joint production in handling the spread of COVID-19, such as the transparency approach and bureaucratic barriers that can affect the handling of COVID-19 [102]. The importance of the involvement of citizens, NGOs, and the government in overcoming COVID-19 through joint production [53]. Government stakeholders must continue coordinating systematic efforts to support joint product development to avoid failure [35]. Handling COVID-19 through joint production can be successful if it is supported by many actors, including the government, the health industry sector, regulations, and citizens [103]. After several new studies emerged with the finding that co-production had developed during the COVID-19 pandemic, however, the concerns of users of the care-protect application that we examined found a need for a stronger understanding of the expectations of the social environment sector. We analyze the pessimism of citizens. When sensitive data appears, such as the presence of personal data, citizens' fear of misuse of data can substantially affect public distrust of the proposed digital service. Although citizens are always motivated by the government to participate in digital services as active partners in the co-production process, residents still have concerns about providing their data to co-production. Our study uses the commonly used UTAUT approach [104] by presenting limitations on citizen involvement in co-production [74].

Accountability and trust are also fundamental aspects to be reviewed in the discourse of digital-based joint production of the public service sector in handling COVID-19 [37, 100, 105]. Regarding accountability and trust, we consider this aspect a social investment by the government to guarantee the storage of valuable data [88, 85]. This research focuses on accountability in the discourse of government-owned co-production. Doubts over data security are a potential dilemma because individual freedom in accessing co-producers is too high. Our findings analyze that citizens' perception of accountability for joint production owned by the government is still low, so collaborative output has the potential to experience less than optimal development. We contribute to the form of empirical evidence that the government needs to play an accountability strategy for the success of joint production [33].

In the context of technology acceptance by citizens, in this third stage, we are concerned with the importance of social aspects and public boundaries to accept technology in the public service sector. Our identification of public conversations on social media Twitter revealed public discussions about social issues and government technical issues in dealing with the outbreak of COVID-19 [81]. Empirical evidence from several studies in various countries confirms that citizens' satisfaction with the government is low in responding to the COVID-19 outbreak [79, 106]. The success or failure of the government in dealing with the COVID-19 problem can be seen from the overall performance of the government, starting from the strategies used to the policies adopted by the citizens. In this aspect, we suggest not focusing on one service only. Still, more broadly, we need to be supported by other government actions and services, such as political developments and other digital-based public services [107].

Our research is limited in identifying the government's progress in dealing with COVID-19. Our limitations are in revealing why individuals express their opinions on Twitter. These limitations are our reasons for recommending further research to examine the impact of the development of Long-scale joint production and the implications of accountability in launching the Care Protect application. Further research can also analyze collaborative output in other sectors such as the economy and education during a pandemic.

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