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EFFECTIVENESS ANALYSIS OF PEDULI LINDUNGI IN COMMUNITY ACTIVITIES RESTRICTIONS DURING THE COVID-19 PANDEMIC

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ABSTRACT

The government has intensified the use of the Peduli Lindungi application in limiting community activities. However, until now, academically, there has been no research related to the effectiveness of Peduli Lindungi. This research aims to analyze the effectiveness of utilizing the Peduli Lindungi Application to organize social activities. The research design used descriptive quantitative with google form instrument filled by 130 respondents used Peduli Lindungi which are spread all over Indonesia. Based on component system quality, Information quality, Service quality, user intention, user satisfaction, and the net benefit listed in the questionnaire, user effectiveness is more than 70% which can be called effective. Peduli Lindungi Application is a newly growing application that presents a mapping case Covid-19, but that application provides many features that support health service and travel planning with restricted activities. There is no value effectiveness more than 80% indicate to required to meet society's needs. Application development with more complete and interactive facilities is needed. Regular evaluation and two-way communication service system of application features will be more interesting for presenting the information.

1. Introduction

Ministry of Communication and Informatics, Ministry of Health, Ministry of State-Owned Enterprises, and National Board for Disaster Management (BNPB) have collaborated developing Peduli Lindungi apps to cope and prevent Pandemic COVID-19. The application was initially named "Trace Together" designed to help the community guard and protect Corona Virus Disease (COVID-19), discontinued the mode of transmission (Fadli, 2020). Peduli Lindungi apps were developed to purpose helping government agencies do tracking to stop the COVID-19 spread. The application gives information for the community when entering the affected COVID-19 area, health facility location, and tracking in a potentially COVID-19 infected environment. This application relies on community participation to share their location data while traveling, thus helping to trace contact history with people with COVID-19 (Kementerian Komunikasi dan Informatika, 2020).

Peduli Lindungi Application has been developed by the government currently used by 32.8 million users, with the average addition of users per day reaching 500000 users. Ministry of communication and informatics Johnny G. Plate explained that as of August 29, 2021, the

total population screened using Peduli Lindungi Apps in some public sectors, like a shopping center, industry, gym, and others, has reached 13.6 million users. There are 462 thousand people in the red category, so they were not allowed to continue an activity by the system (Kementerian Komunikasi dan Informatika, 2021).

Disaster Management Communication is a comprehensive effort to prevent and reduce disaster risk by managing the production process of messages or information about disasters, disseminating messages, and receiving messages from pre-disaster, during the disaster and post-disaster stages (Friska et al., 2021). how to convey information in disaster communication must be done appropriately. Miscommunication can create uncertainty that will worsen the situation (Putri & Hamzah, 2021). The communication approach can use the wider community's current digital communication in this situation.

One of the government policies related to information and communication system in COVID-19 prevention is by obliging every community who wants to enter all public facilities like a shopping center, town square, travel long distances using transportation a train, a plane goes to a restaurant, and other public facilities to scan barcodes on the Peduli Lindungi application. Peduli Lindungi Application is the part of health communication that aims to make people comply with regulations made by the government. The purpose of the communication concept using health communication is to convey health information. Second, health communication aims to influence others, ranging from cognitive, affective, and psychomotor. The use of applications connected to the internet is a form of health communication that utilizes the Internet of Things (IoT) (Kencana, 2020).

Based on research and survey, public trust is still minimal to accept and use Peduli Lindungi Application (Kurniawati et al., 2020). That matter is undoubtedly an obstacle and needs to be handled by the government to reduce COVID-19 spreads through the Peduli Lindungi Application. In addition, there has been no research related to the effectiveness of the use of Peduli Lindungi Application in its role in limiting community activities. Therefore this research was conducted to determine the level of Peduli Lindungi Application effectiveness in terms of system quality indicators, information quality, service quality, user intentions, user satisfaction, and net benefits to be an illustration for policy implementers to improve application quality so that community can use it effectively and efficiently in preventing the spread of COVID-19.

2. Method (Cambria Bold, 12pt)

This research uses a quantitative design with a descriptive approach. Quantitative research can be measured by numbers and understanding what was studied with variable intensity (Sulistyo & Basuki, 1993). In contrast, descriptive research can describe a variable character (Martono, 2012). The research population is a user of social media, which uses the Peduli Lindungi Application. Sampling technique using simple random sampling by accidental. The sample used in this study was 130 respondents who had filled out the questionnaire instrument through distributed online google form.

Table 1. Concept Operational and Variable Indicator

Variable	Concept Operational	Measuring Scale
System quality	1. Statement 1 (S1) The statement is "Peduli Lindungi Application never had any problems while using it" 2. Statement 2 (S2) The statement is "Peduli Lindungi Application provides complete features" 3. Statement 3 (S3) The statement is "Peduli Lindungi Application can be accessed anytime and anywhere"	Likert Scale: Strongly Agree (SA) = 5 Agree (A) = 4 Quite Agree (QA) = 3 Disagree (D) = 2 Strongly Disagree (SD) = 1 Maximum Score:

	4. Statement 4 (S4) The Statement is "Peduli Lindungi Application easy to use" 5. Statement 5 (S5) The Statement is "Peduli Lindungi Application easy to use via computer and smartphone"	5 x 5 = 25 Minimum Score: 5 x 1 = 5
Information Quality	1. Statement 6 (S6) The Statement is "Peduli Lindungi Application provide clear and reliable information" 2. Statement 7 (S7) The Statement is " Information of Peduli Lindungi Application is relevant with user needs is provided" 3. Statement 8 (S8) The Statement is " Information of Peduli Lindungi Application available on time when needed" 4. Statement 9 (S9) The Statement is "Information of Peduli Lindungi Application is complete" 5. Statement 10 (S10) The Statement is "Peduli Lindungi Application easy to understand"	Likert Scale: Strongly Agree (SA) = 5 Agree (A) = 4 Quite Agree (QA) = 3 Disagree (D) = 2 Strongly Disagree (SD) = 1 Maximum Score: 5 x 5 = 25 Minimum Score: 5 x 1 = 5
Service Quality	1. Statement 11 (S11) The Statement is "Peduli Lindungi Application reliable to get information" 2. Statement 12 (S12) The Statement is " Information Servicaccesses in Peduli Lindungi application is fast" 3. Statement 13 (S13) The Statement is " Information service Peduli Lindungi Application has an accuracy guarantee" 4. Statement 14 (S14) The Statement is "Peduli Lindungi Application have a nice communication in meeting information needs" 5. Statement 15 (S15) The Statement is "Peduli Lindungi Application access already supported by the hardware, software, and internet connections"	Likert Scale: Strongly Agree (SA) = 5 Agree (A) = 4 Quite Agree (QA) = 3 Disagree (D) = 2 Strongly Disagree (SD) = 1 Maximum Score: 5 x 5 = 25 Minimum Score: 5 x 1 = 5
User Intention	1. Statement 16 (S16) The Statement is "Using Peduli Lindungi Application to access case development COVID-19" 2. Statement 17 (S17) The Statement is "Using Peduli LSndungi Application to access public service and travel plans" 3. Statement 18 (S18) The Statement is "Access Peduli Lindungi Application to use health services (vaccine, Covid-19 test and the other of Health Service)"	Likert Scale: Strongly Agree (SA) = 5 Agree (A) = 4 Quite Agree (QA) = 3 Disagree (D) = 2 Strongly Disagree (SD) = 1 Maximum Score: 5 x 5 = 25 Minimum Score:

		5 x 1 = 5
User Satisfaction	1. Statement 19 (S19) The Statement is "Peduli Lindungi Application help to get information of Covid-19" 2. Statement 20 (S20) The Statement is "Peduli Lindungi Application help to get service travel information" 3. Statement 21 (S21) The Statement is "Peduli Lindungi Application Lindungi help to get service public information"	Likert Scale: Strongly Agree (SA) = 5 Agree (A) = 4 Quite Agree (QA) = 3 Disagree (D) = 2 Strongly Disagree (SD) = 1 Maximum Score: 5 x 5 = 25 Minimum Score: 5 x 1 = 5
Net Benefit	1. Statement 22 (S22) The Statement is "Peduli Lindungi Application can save cost" 2. Statement 23 (S23) The Statement is "after using Peduli Lindungi Application you will recommend to others" 3. Statement 24 (S24) The Statement is " since there are Peduli Lindungi Applications make you more often update Covid-19 case development" 4. Statement 25 (S25) The Statement is "Peduli Lindungi Application save time to get information"	Likert Scale: Strongly Agree (SA) = 5 Agree (A) = 4 Quite Agree (QA) = 3 Disagree (D) = 2 Strongly Disagree (SD) = 1 Maximum Score: 5 x 5 = 25 Minimum Score: 5 x 1 = 5

The variable of this research includes indicators system quality, Information quality, Service quality, user intentions, user satisfaction, and net benefits. Each indicator in the research instrument was adapted based on research on the effectiveness of the ipusnas application (Prastiwi & Jumino, 2018), which has been tested for validity and reliability. The data obtained are processed and presented quantitatively in a frequency table based on the percentage calculation. Percentage calculation to analyze the effectiveness of the variables using the formula for the effectiveness of variables as (Bungin, 2009):

$$P = \frac{f}{n} \text{ x } 100\%$$

Description:
P: Percentage
f: frequency
n: total sample

The percentage results that have been obtained are then matched with the effectiveness category based on the class interval calculation:

Interval Length Class $= \frac{Range\ (R)}{n\ class}$

Range (R) = score maximum – score minimum

Score maximum = score maximum x total question in the questioner

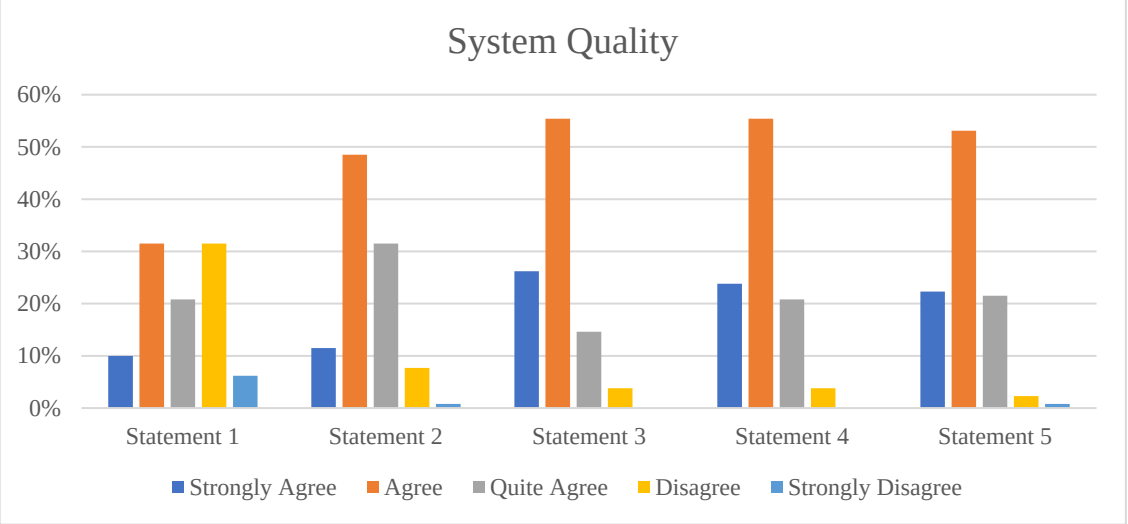
Score minimum = score minimum x total question in the questioner

3. Results and Discussion

Results Analysis of Peduli Lindungi Applications on Effectiveness Indicators

The results of the study are seen based on each indicator of the effectiveness Peduli Lindungi application which consists of system quality, information quality, service quality, user intentions, user satisfaction, and net benefits (De Lone & Mc. Lean, 2003). The 130 respondents have filled out the questionnaire based on each indicator in the form of closed statements with answer choices Strongly Agree (SA), Agree (A), Quite Agree (QA), Disagree (D), and Strongly Disagree (SD):

1. Quality System



Picture 1. Distribution Graphic System Quality

Statement 1 (S1) the statement is "Peduli Lindungi Application never had any problems while using it" showed as many as 13 respondents (10%) stated strongly agree, 41 respondents (31.5%) agreed, 27 respondents (20.8%) stated quite agree, 41 respondents (31.5%) disagreed, and as many as 8 respondents (6.2%) stated strongly disagree.

Statement 2 (S2), the statement is "Peduli Lindungi Application provides complete features" showed as many as 15 respondents (11.5%) stated strongly agree, 63 respondents (48.5%) agreed, 41 respondents (31.5%) stated quite agree, 10 respondents (7.7%) disagreed, and 1 respondent (0.8%) stated strongly disagree.

Statement 3 (S3) the statement is "Peduli Lindungi Application can be accessed anytime and anywhere" showed as many as 34 respondents (26.2%) stated strongly agree, 72 respondents (55.4%) agreed, 19 respondents (14.6%) stated quite agree, 5 respondents (3.8%) disagreed, and as many as 0 respondents (0%) stated strongly disagree.

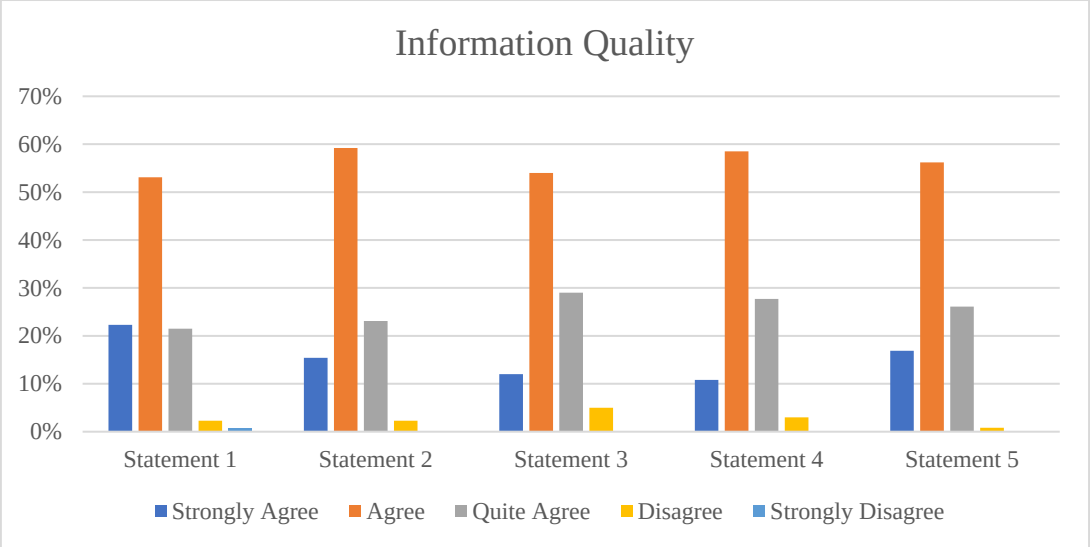
Statement 4 (S4), the statement is "Peduli Lindungi Application easy to use" showed as many as 31 respondents (23.8%) stated strongly agree, 72 respondents (55.4%) agreed, 27 respondents (20.8%) stated quite agree, 5 respondents (3.8%) stated disagree, and as many as 0 respondents (0%) stated strongly disagree.

Statement 5 (S5) The Statement is "Peduli Lindungi Application easy to use via computer and smartphone" showed as many as 29 respondents (22.3%) stated strongly agree, 81 respondents (62.3%) agreed, 16 respondents (12.3%) stated quite agree, 4 respondents (3.1%) disagreed, and as many as 0 respondents (0%) stated strongly disagree.

Effectiveness which includes system quality indicators reliability, is the endurance of Peduli Lindungi Application from damage or interference during use that can interfere comfortable user (Gable, 2008). Complete features are provided to support the ease and knowledge of using the application. The system's flexibility is application access that can

be done anytime and anywhere. User convenience can be seen from the application that is easy to understand and use. The answers from the five available statements have the most significant percentage in agreeing on statements. Some respondents still choose to disagree, which means improving the quality of the application system needs to be improved.

2. Information Quality



Picture 2. Distribution Graphic Quality Information

Statement 6 or S6 the Statement is “Peduli Lindungi Application provide clear and reliable information” showed that 29 respondents (22.3%) strongly agreed, 69 respondents (53.1%) agreed, 28 respondents (21.5%) stated quite agree, 3 respondents (2.3%) disagreed, and 1 respondent (0.8%) stated strongly disagree.

Statement 7 (S7) the statement is “Information of Peduli Lindungi Application is relevant with user needs is provided” showed as many as 20 respondents (15.4%) stated strongly agree, 77 respondents (59.2%) agreed, 30 respondents (23.1%) stated quite agree, 3 respondents (2.3%) disagreed, and as many as 0 respondents (0%) stated strongly disagree.

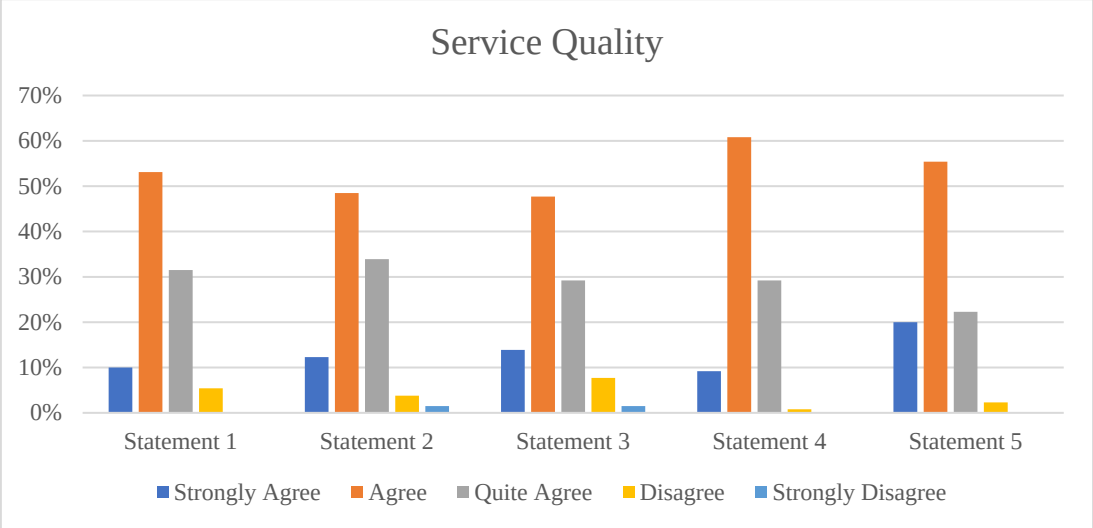
Statement 8 (S8) the statement is "Information of Peduli Lindungi Application available on time when needed" showed as many as 16 respondents (12%) stated strongly agree, 70 respondents (54%) agreed, 38 respondents (29%) stated quite agree, 6 respondents (5%) disagreed, and as many as 0 respondents (0%) stated strongly disagree.

Statement 9 (S9), the statement is "Information of Peduli Lindungi Application is complete” showed as many as 14 respondents (10.8%) stated strongly agree, 76 respondents (58.5%) agreed, 36 respondents (27.7%) stated quite agree, 4 respondents (3%) disagreed, and as many as 0 respondents (0%) stated strongly do not agree.

Statement 10 (S10), the statement is "Peduli Lindungi Application easy to understand” showed that as many as 22 respondents (16.9%) stated strongly agree, 73 respondents (56.2%) agreed, 34 respondents (26.1%) stated quite agree, 1 respondent (0.8%) disagreed, and as many as 0 respondents (0%) stated strongly disagree.

The quality of information is accuracy, relevance, completeness, and ease of provided information by the application to reach the user without changing the value or meaning of the information provided in the application (Urbach & Müller, 2012). The respondent's definitive answer shows that most answers give an agreement statement, which means that the quality information of the Peduli Lindungi application is good.

3. Service Quality



Picture 3. Distribution Graphic Service Quality

Statement 11 (S11), the statement is "Peduli Lindungi Application reliable to get information" showed as many as 13 respondents (10%) stated strongly agree, 69 respondents (53.1%) agreed, 41 respondents (31.5%) stated quite agree, 7 respondents (5.4%) disagreed, and as many as 0 respondents (0%) stated strongly disagree.

Statement 12 (S12), the statement is "Information Servicaccesses in Peduli Lindungi application is fast" showed as many as 16 respondents (12.3%) stated strongly agree, 63 respondents (48.5%) agreed, 44 respondents (33.9%) stated quite agree, 5 respondents (3.8%) disagreed, and as many as 2 respondents (1.5%) stated strongly disagree.

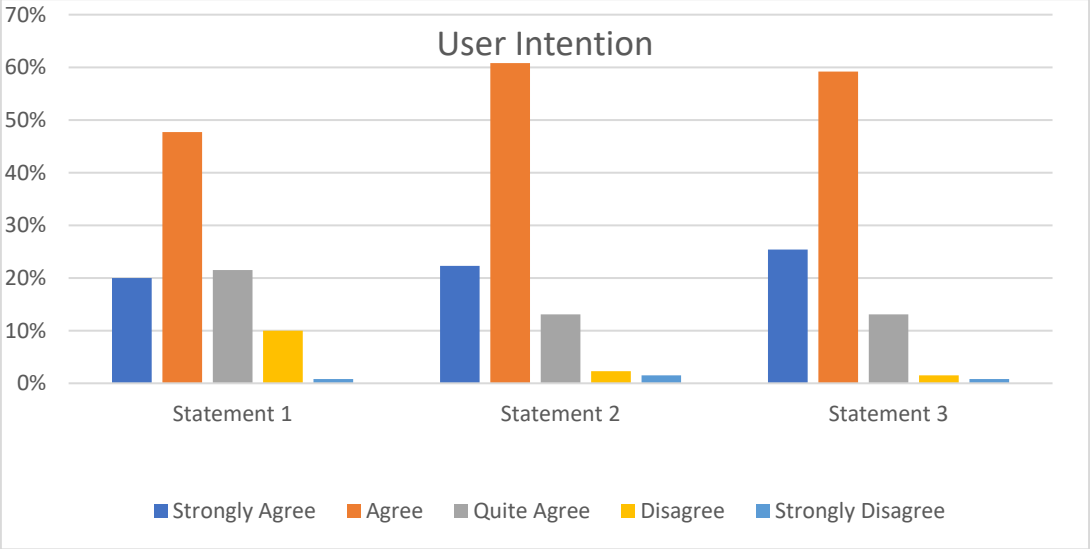
Statement 13 (S13), the statement is "Information service Peduli Lindungi Application has an accuracy guarantee" showed as many as 18 respondents (13.9%) stated strongly agree, 62 respondents (47.7%) agreed, 38 respondents (29.2%) stated quite agree, 10 respondents (7.7%) disagreed, and as many as 2 respondents (1.5%) stated strongly disagree.

Statement 14 (S14), the statement is "Peduli Lindungi Application have a nice communication in meeting information needs" showed as many as 12 respondents (9.2%) stated strongly agree, 79 respondents (60.8%) agreed, 38 respondents (29.2%) stated quite agree, 1 respondent (0.8%) disagreed, and as many as 0 respondents (0%) stated strongly disagree.

Statement 15 (S15), the statement is "Peduli Lindungi Application access already support by hardware, software, and internet connections" showed as many as 26 respondents (20%) stated strongly agree, 72 respondents (55.4%) agreed, 29 respondents (22.3%) stated quite agree, 3 respondents (2.3%) stated disagree 0 respondent, and 0 respondent (0%) stated strongly disagree.

The indicator of service quality covers *reliability* to help users get information as needed, *empathy* in the form of communication access for users, and *tangible*, which is the supported application implementation by *software* and *hardware* (Urbach & Müller, 2012). Users can access Peduli Lindungi Application in the *play store*, *app store*, and website. Call center service is available for the user if having trouble. The statement of graphic shows that the majority of respondents' answers agree with the five available statements, which means that the service quality is good.

4. User Intention



Picture 4. Distribution Graphic User Intention

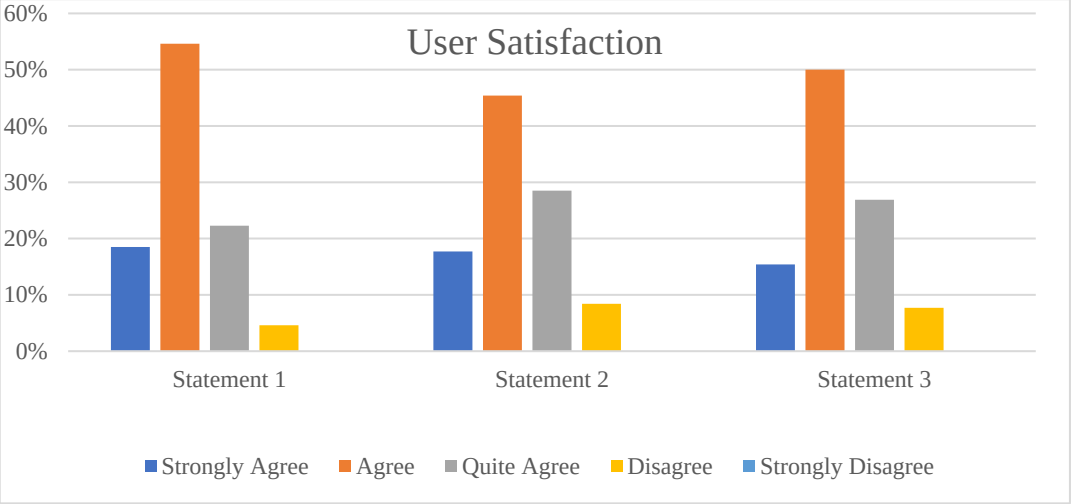
Statement 16 (S16), the statement is "Using Peduli Lindungi Application to access case development COVID-19" showed that 26 respondents (20%) strongly agreed, 62 respondents (47.7%) agreed, 28 respondents (21.5%) stated quite agree, 13 respondents (10%) disagreed, and 1 respondent (0.8%) stated strongly disagree.

Statement 17 (S17), the statement is "Using Peduli Lindungi Application to access public service and travel plans" showed as many as 29 respondents (22.3%) stated strongly agree, 79 respondents (60.8%) agreed, 17 respondents (13.1%) stated quite agree, 3 respondents (2.3%) disagreed, and as many as 2 respondents (1.5%) stated strongly disagree.

Statement 18 (S18), the statement is "Access Peduli Lindungi Application to use health services (vaccine, Covid-19 test and the other of Health Service)" shows 33 respondents (25.4%) strongly agree, 77 respondents (59.2%) agree, 17 respondents (13.1%) quite agree, 2 respondents (1.5%) disagree, and 1 respondent (0.8%)) strongly disagree.

User Intention of Application can be influenced by factors of benefit and ease of use. Quality systems and services also indirectly influence users accessing applications as needed (Indriyarti & Wibowo, 2020). The results of this research show system quality and quality service are good, user intentions based on respondents' answers based on three statements indicate the majority of answers agree, which means it is good.

5. User Satisfaction



Picture 5. Distribution Graphic User Satisfaction

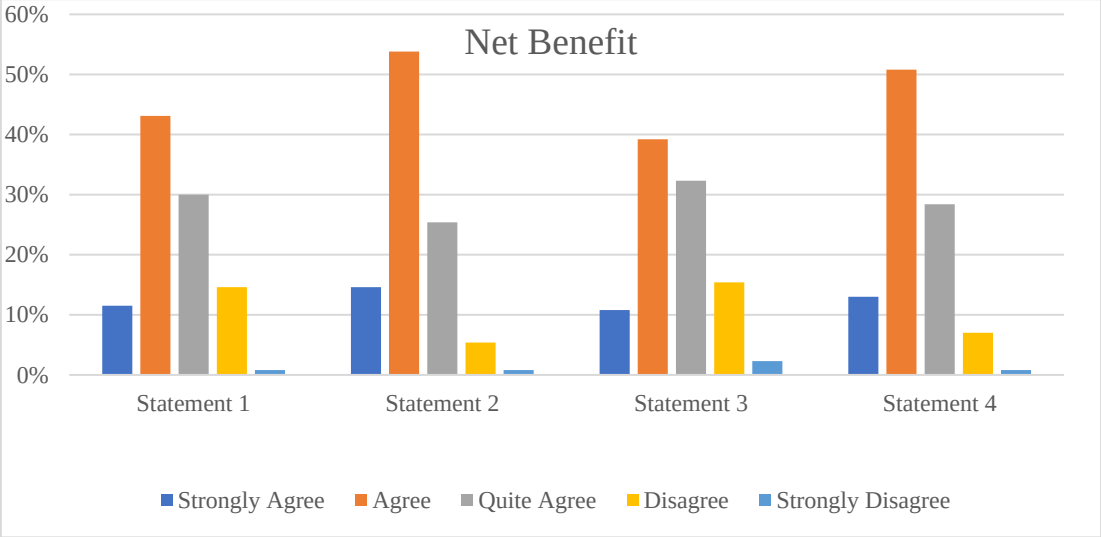
Statement 19 (S19) the statement is "Peduli Lindungi Application help to get information of Covid-19" showed as many as 24 respondents (18.5%) stated strongly agree, 71 respondents (54.6%) agreed, 29 respondents (22.3%) stated quite agree, 6 respondents (4.6%) disagreed, and as many as 0 respondents (0%) stated strongly disagree.

Statement 20 (S20) the statement is "Peduli Lindungi Application help to get service travel information" showed as many as 23 respondents (17.7%) stated strongly agree, 59 respondents (45.4%) agreed, 37 respondents (28.5%) stated quite agree, 11 respondents (8.4%) disagreed, and as many as 0 respondents (0%) stated strongly disagree.

Statement 21 (S21) the statement is "Peduli Lindungi Application Lindungi help to get service public information" showed as many as 20 respondents (15.4%) stated strongly agree, 65 respondents (50%) agreed, 35 respondents (26.9%) stated quite agree, 10 respondents (7.7%) stated disagree, and as many as 0 respondents (0%) stated strongly disagree.

User satisfaction is an overall evaluation of the system's perceived experience and the potential impact of using the information system. User satisfaction in the information system can be influenced by the quality of the system and the quality of information (Tulodo & Solichin, 2019). Percentage respondents answer gives the most agree response to the three statements given. However, the comparison of disagreeing responses in the user satisfaction indicator is greater than the other previous indicators: system quality, information quality, and user intention.

6. Net Benefit



Pict 6. Distribution Graphic Net Benefit

Statement 22 (S22), the statement is "Peduli Lindungi Application can save cost" showed as many as 15 respondents (11.5%) stated strongly agree, 56 respondents (43.1%) agreed, 39 respondents (30%) stated quite agree, 19 respondents (14.6%) disagreed, and 1 respondent (0.8%) stated strongly disagree.

Statement 23 (S23) the statement is "after using Peduli Lindungi Application you will recommend to others" showed that 19 respondents (14.6%) strongly agreed, 70 respondents (53.8%) agreed, 33 respondents (25.4%) stated quite agree, 7 respondents (5.4%) disagreed, and 1 respondent (0.8%) stated strongly disagree.

Statement 24 (S24) statement is " since there are Peduli Lindungi Applications make you more often update Covid-19 case development" showed as many as 14 respondents (10.8%) stated strongly agree, 51 respondents (39.2%) agreed, 42 respondents (32.3%) stated quite agree, 20 respondents (15.4%) stated disagree, and 3 respondents (2.3%) stated strongly disagree.

Statement 25 (S25) the statement is "Peduli Lindungi Application save time to get information" showed as many as 17 respondents (13%) stated strongly agree, 66 respondents (50.8%) agreed, 37 respondents (28.4%) stated quite agree, 9 respondents (7%) disagreed, and 1 respondent (0.8%) stated strongly disagree.

Perceived usefulness can be measured using some indicators that are useful, beneficial, effective, and productive (Oentario et al., 2017). Most respondents who answered the four available statements gave an agreeable response. However, as with the indicators of user satisfaction, the response to disagree was also quite a lot given by respondents.

The Effectiveness of Peduli Lindungi Applications in Restricting Community Activities

The study results were obtained from the percentage of the Peduli Lindungi Application effectiveness compared to the category of effectiveness levels. The effectiveness category is made based on the class interval calculation as follows:

Interval Length Class = $\frac{Range\ (R)}{n\ class}$

Range (R) = score maximum – score minimum

Score maximum = score maximum x total question in the questioner

Score minimum = score minimum x total question in the questioner

So we get:

Score maximum = 5 x 25 = 125

Score minimum = 1 x 25 = 25

Range (R) = 125 – 25 = 100
Interval Length Class = $\frac{100}{5}$ = 20

Table 2. Effectiveness Category of Using Peduli Lindungi Applications

Score	Class	Category
0-20%	1	Very Ineffective
21-40%	2	Ineffective
41-60%	3	Less Effective
61-80%	4	Effective
81-100%	5	Very Effective

Source: Processed by researchers based on the results of questionnaire data

Based on the data that has been obtained by researchers and based on the results of filling out questionnaires to 130 respondents regarding the effectiveness of using the Peduli Lindungi Application in limiting community activities during the COVID-19 pandemic, the calculating of effectiveness using Likert scale formula, the results of responses from respondents:

Table 3. Conclusion on the Effectiveness of Peduli Lindungi Applications in Restricting Community Activities during the COVID-19 Pandemic

Indicator	Score Total	Percentage
System Quality	2440	75%
Information Quality	2498	77%
Service Quality	2431	75%
User Intentions	1517	78%
User Satisfaction	1472	75%
Net Benefit	1830	70%

The data shows the results of the analysis of processed data indicators which include the quality of the system with an effective of 75%, information quality with an effective 77%, service quality with an effective 75%, user intentions with an effective 78%, user satisfaction with an effective 75%, and net benefit with an effective 70%. So we can say if Peduli Lindungi Application is effective. However, application improvements need to be improved to increase application quality to manage COVID-19 effectively.

4. Conclusion (Cambria Bold, 12pt)

Based on the research results described, the conclusion is that using the Peduli Lindungi Application in limiting community activities can be categorized as effective. Nevertheless, the results of this study need to be a concern for policy implementers, especially the government, to continue to improve systems and services for the Peduli Lindungi Application further to expand the benefits and impacts on the community so that Peduli Lindungi application can contribute to the effective management of COVID-19.

Acknowledgment ***(Cambria Bold, 12pt)***

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