Mapping Cases of Violence Against Women and Children in Pekanbaru City

Susi Erlinda, Sayyid Husein, Ambiyar, Triyani Arita Fitri, Mardainis

*Abstract***:** *Protection of women and children is a mandate contained in the laws of the Republic of Indonesia to the government to protect women and children from acts of violence or discrimination. The mandate is carried out by the government through several efforts to handle and prevent it through government programs that are made every year. However, until now the municipal government of Pekanbaru through the women's empowerment and child protection office does not yet have data on mapping the protection of women and children disaggregated by sex, age, type of case, and location of cases so that many child protection programs are not properly targeted according to the level of violence and types of violence in areas exposed to cases of violence. The application of the mapping application is a solution to this problem because, with computerized data on the protection of women and children, the government will make it easier to design management and prevention programs. This application displays complete indicators including data on violence mapped in the geographic form of the city of Pekanbaru which is divided into the scope of the sub-district and given a color as an indicator of high or low cases of violence in the area, violence data is displayed disaggregated according to gender, age, types of cases and locations of incidents and in addition, this application applies a case-control design to provide recommendations to the government regarding handling and prevention programs in areas exposed to cases of violence against women and children. This application will make it easier for the government to design programs to protect women and children and to reduce the number of violence against women and children which always increases every year.*

*Keywords***:** *Case-Control, Violence Against Women And Children, Android, Pekanbaru.*

I. INTRODUCTION

Violence against women and children is an act that violates the rights, dignity of women and children as human beings [1-3]. [4] explains fulfillment of constitutional rights and efforts to improve the quality of life of women and children is one of the mandatory affairs which becomes the duty, authority, and responsibility of the Regional Government. Data obtained from the Integrated Service Center for Women and Children Empowerment (P2TP2A) Pekanbaru City in 2020 there were 105 cases of violence against women and children. Types of violence that occur against women and children include physical, psychological, sexual violence, neglect, trafficking, and exploitation [5].

However, in implementing the mandate of protecting women and children, there are often obstacles in the field such as no data to support the government in planning programs protecting women and children, this is because data is not well-computerized, and not selected data is according to sex, age, and gender [6]. Cases and locations of incidents, so that the protection program so far has not been implemented according to the needs of the community per district, this has resulted in the protection program not being distributed on target.

Based on these problems, the solution to be proposed in this study is to use technology by designing an Android-based application that functions to map cases of violence against women and children according to the district by displaying accurate information from incoming data disaggregated by gender, age, type of case. and the location of the incident by applying the case-control design to find out how far the risk factors influence the occurrence of cases of violence to produce recommendations to the government in determining strategic steps to implement programs for handling and preventing cases of violence.

II. RESEARCH METHODS

This research begins with analyzing the system to find out the root of the problem. Followed by problem analysis, software design, and data design [7-9].

A. Analysis system

To complete the system to be made then the required software is used as a tool in building the system, as for the software used in this study as follows: 1) Operating System Windows 10 64-bit operating system to run on a PC system; 2) The application Dream Weaver is used as a text editor for the program back end administrator; 3) Application Android studio that is used as a tool in making applications android; and 4) Google Chrome works to display the back administrator's end and firebase console.

B. Problem analysis

Pekanbaru City Women and Children Empowerment Office have currently implemented a website-based system that functions to record cases of violence against women and children,

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but this system does not produce a mapping of protection of women and children, disaggregated by sex, age, type of case, and location. incidents so that the government often finds it difficult to design programs for handling and preventing violence due to the absence of mapping data on the protection of women and children, so the authors create a system that can provide useful information for the government to find out the distribution of cases of violence in Pekanbaru City in a disaggregated manner and provide recommendations for protection programs with assistance in design case-control so that through the mapping application into application mobile.

This application is expected to be a solution to the current problem of protecting women and children, this application will also integrate data on the protection of women and children and a geographical map of Pekanbaru City to be able to map locations/zones exposed to cases of violence in real-time. based on data disaggregated according to sex, age, type of case, and location of the incident. With this feature, the government will find it easier to find out the level of distribution of cases of violence in Pekanbaru City and can make it easier for the government to plan programs for protecting women and children properly on the target, to minimize budget waste and channel protection programs optimally. This function is implemented by registering the application created on the page Google Developers Console to get the key to the API required. Here's a description of how to get the key API: 1) Go to Google Cloud Platform; 2) Create or select a project; 3) After entering the page Google Developers Console, click the Library menu to activate API the required; and 4) On the credentials page, click on the get key button API.

C. Case-control design

The following are the steps using the Odds Ratio formula which functions to determine the risk factors for cases and controls.

Odds Ratio (OR) = Case Odds (A/B)/Control Odds (C/D)

The results of the calculation of the odds ratio (OR) are the multiplication of the risk of cases of violence against women and children in areas that lack or do not receive violence protection programs. women and children. The next step is to classify the Odds Ratio (OR) into color indicators.

D. Software

The design includes making the system display interface, input, output, and access management of the system. With the design of the software, it will be easier to explain the final results to be made. In this study, software design uses Unified Modeling Language (UML) which describes the workflow or a general description of the system being developed. In the system there are 2 (two) actors, namely admin and user with use cases as namely 1) Admin, has access to the backend administrator and firebase console whose main task is to manage form violence, manage form protection and manage notifications; and 2) User, has access to the android application that has full rights to detailed information about mapping, download reports and get the latest notifications.

III. RESULTS

Software implementation is a stage used to show output as a result of implementation. Software implementation

activities include database implementation and system implementation. In this system, there are 2 (two) access rights, the first in the back and administrator used by the admin to manage the content of the second application, namely the android application that is used by users to be able to access information in the application of mapping for the Protection of Women and Children. Meanwhile, notification management is used the Firebase Cloud Messaging feature from Google's Firebase Console which is also managed by the admin. The following is a complete description of the implementation of the system being built.

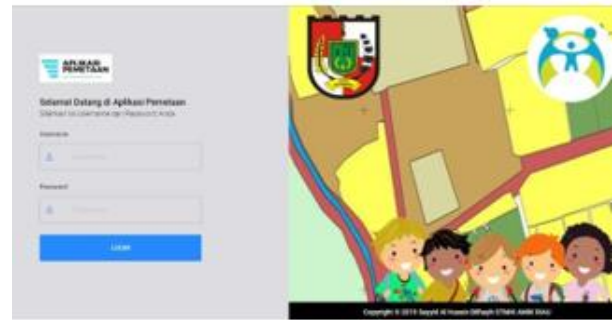Go to the backend administrator and log in via a web browser.

Fig. 1.Page login administrator

The appearance of the mapping application used after the splash screen will display the dashboard view of the application, on the dashboard, there is some information including total case data, total protection data, and districts. The purpose of displaying some of this information is so that users can find out mapping information globally [1-8].

Fig. 2.Mapping application display page

Below is a mapping view. Mapping is a list that displays various information violence against women and children per sub-district in Pekanbaru City along with case-control information.
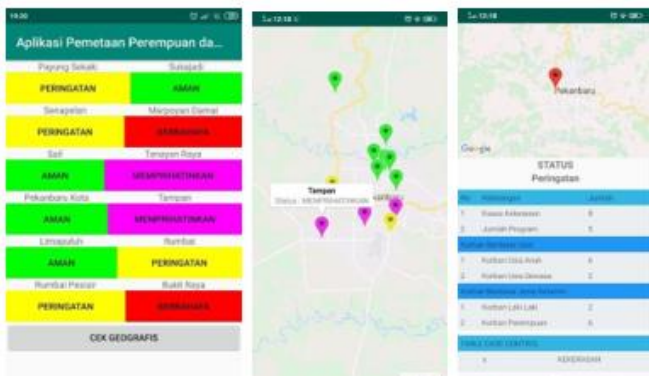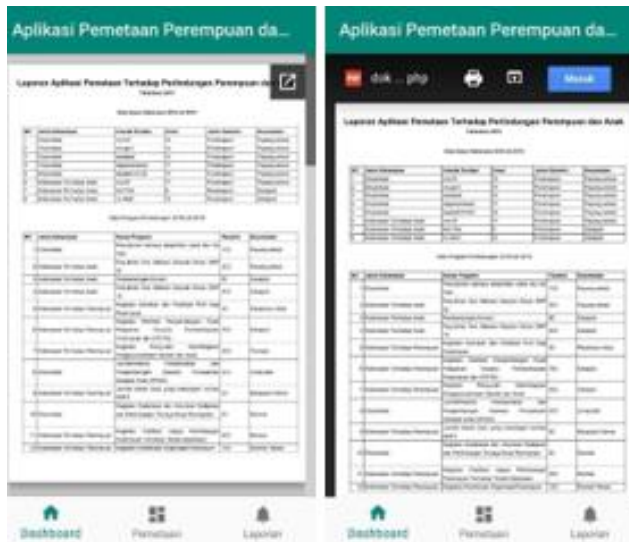
Fig. 3.Mapping page display mapping

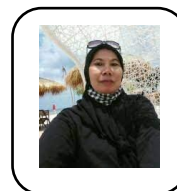**Fig. 4.Mapping report display**

IV. CONCLUSION

From the analysis and discussion that has been carried out in the descriptions of the previous chapters, the conclusions obtained from the results of this study include: 1)The application can provide mapping information on Protection of women and children in Pekanbaru City includes data on violence and protection programs arranged in a disaggregated manner by applying a case-control design to determine the status of violence in each sub-district in PekanbaruCit; 2) Applications can assist the government in determining priority programs each year so that protection programs can be channeled effectively and efficiently; and 3) The application can be used as material for evaluating government performance each year objectively by referring to the Case-Control design, so that it is hoped that the government can improve performance every year and as one of the bases for submitting additional budgets to BAPENDA (Regional Revenue Agency) based on the need and urgency of the case status violence against women and children in Pekanbaru City.
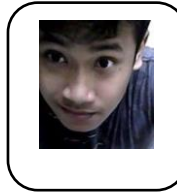
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