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ANALYSIS OF STATISTICAL DATA PROCESSING IN THE DATA PRESENTATION OF THE CENTRAL STATISTICAL AGENCY OF WEST NUSA TENGGARA PROVINCE IN 2021/2022

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Abstract

This research study is about "Processing analysis in presenting data from the West Nusa Tenggara Province Central Statistics Agency. The aim is to apply statistical data in the form of presenting quantitative data at the Central Statistics Agency (BPS). This research report was created as an illustration of the results of the coordination function of Statistical Processing Integration and Dissemination specifically at the Integrated Service Center (PST). This research uses quantitative data for the 2021/2022 period at the Central Statistics Agency (BPS) of West Nusa Tenggara Province.

The data processing stage really determines the level of accuracy and precision of statistical data produced. BPS is a pioneering agency in the use of computers with the following stages:

- 1. Download, rename and organize Official Statistics News files based on category and year of publication, namely from 2008 to 2022.*
- 2. Fill in the statistical items*
- 3. Create slides or power points regarding the Implementation of Statistical Activities and Practical Steps in Surveys and Compromising.*
- 4. Fill in the data supporting the preparation of the 2022 West Nusa Tenggara Province IKPLDH document.*
- 5. Download the statistical table on the official website of the Central Statistics Agency (www.bps.go.id).*
- 6. Fill in poverty data from the Region in Figures (DDA) of West Nusa Tenggara Province for 1990-2022.*

Furthermore, data processing and analysis activities are carried out in the coordination function of statistical processing and dissemination, especially integrated statistical services, namely downloading and compiling Official Statistical News data, filling

in IPDS statistical items, creating and recapping the results of the Aladin BPS NTB application questionnaire using the Google form, and fill in the data desired by government agencies

Keywords: *Data Processing Analysis, Central Statistics Agency, West Nusa Tenggara Province*

1. INTRODUCTION

1.1. Background

Indonesia is a country where education is a very important sector for the nation's progress. Education in Indonesia is defined as a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble morals, and the skills needed by themselves, society, the nation and country. The government has made various efforts to improve the quality of education in Indonesia with the aim of improving the quality of human resources through the world of education. The government, assisted by the Ministry of Education and Culture, the Directorate General of Higher Education, has made various efforts to advance Indonesian education.

The West Nusa Tenggara Province Central Statistics Agency is the allocated internship/work practice agency. The Central Bureau of Statistics is a data provider to meet the needs of the government and society regarding data, develop and promote technical standards and statistical methodology, and provide services in the field of statistical education and training. As well as building cooperation with international institutions and other countries for the benefit of Indonesia's statistical development. And to get data from the Central Statistics Agency, many partners are involved. This partnership system was implemented due to limited human resources at the Central Statistics Agency who had to complete so many surveys within a certain time period so that recruiting partners became the main solution in carrying out data collection and processing activities.

With this MB-KM activity, the University and the Central Statistics Agency are collaborating to place students who take part in the internship/work practice program as partners. In this collaboration, both parties benefit each other, be it the University or the Central Statistics Agency. Meanwhile, the Development Studies Economics study program can improve the quality of education as a center for implementing the MB-KM program as a channel for knowledge gained on campus, and through this collaboration it can help students carry out learning activities outside campus for one semester so that students gain work experience at the Agency. Statistics Center. And for the Central Statistics Agency, the benefit is the completion of simple tasks assisted by internship/work practice students.

1.2. Problem Formulation

- What is the data processing system at the West Nusa Tenggara Province Central Statistics Agency?
- How to display statistical data in ready-to-serve data tables.
- What are the steps in resolving the problems encountered during the data reporting process.

2. LITERATURE REVIEW

2.1. General Information About the Institution

The Central Statistics Agency is a Non-Departmental Government Institution that is directly responsible to the President. Previously, BPS was the Central Bureau of Statistics, which was formed based on Law Number 6 of 1960 concerning Census and Law Number 7 of 1960 concerning Statistics. As a replacement for these two laws, Law Number 16 of 1997 concerning Statistics was enacted. Based on this law, which was followed up by the statutory regulations below, the name of the Central Bureau of Statistics was formally changed to the Central Bureau of Statistics.

Material that constitutes new content in Law Number 16 of 1997, includes:

- Types of statistics based on the purpose of their use consist of basic statistics which are fully maintained by BPS, sectoral statistics which are carried out by Government agencies independently or jointly with BPS, as well as special statistics which are carried out by institutions, organizations, individuals and/or other elements of society independently. or together with BPS.
- The results of statistics held by BPS are announced in the Official Statistics News (BRS) regularly and transparently so that the public can easily find out and/or obtain the necessary data.
- A reliable, effective and efficient National Statistics System.
- Establishment of the Statistical Community Forum as a forum to accommodate the aspirations of the statistical community, whose task is to provide suggestions and considerations to BPS.

Based on the law mentioned above, the roles that must be carried out by BPS are as follows:

- Providing data needs for the government and society. This data is obtained from censuses or surveys conducted by ourselves and also from other government departments or institutions as secondary data.
- Assisting statistical activities in departments, government agencies or other agencies, in building a national statistical system.
- Develop and promote statistical technical and methodological standards, and provide services in the field of statistical education and training.
- Building cooperation with international institutions and other countries for the benefit of the development of Indonesian statistics.

Vision

Provider of quality statistical data for developed Indonesia

Mission

- Providing quality statistics with national and international standards.

2. Fostering K/L/D/I through a sustainable National Statistics System.
3. Realizing excellent service in the field of statistics for the realization of a National Statistical System
4. Building superior and adaptive human resources based on the values of professionalism, integrity and trust.

Duties, Functions and Authorities

The duties, functions and authority of BPS have been determined based on Presidential Regulation Number 86 of 2007 concerning the Central Statistics Agency and Regulation of the Head of the Central Statistics Agency Number 7 of 2008 concerning the Organization and Work Procedures of the Central Statistics Agency.

1. Tasks

Carry out government duties in the field of statistics in accordance with statutory regulations.

2. Function

- a. Study, preparation and formulation of policies in the field of statistics.
- b. Coordinating national and regional statistical activities.
- c. Determination and implementation of basic statistics.
- d. Establishment of a national statistical system.
- e. Guidance and facilitation of government agency activities in the field of statistical activities, and
- f. Providing guidance and general administrative services in the fields of general planning, administration, organization and management, personnel, finance, archives, public relations, law, equipment and household.

3. Authority

- a. Preparation of macro national plans in their fields
- b. Formulation of policies in the field to support macro development
- c. Determination of information systems in the field
- d. Determination and implementation of national statistics
- e. Other authorities in accordance with the provisions of applicable laws and regulations
- f. Formulation and implementation of certain policies in the field of statistical activities
- g. Prepare guidelines for conducting sectoral statistical surveys.

Data processing

The data processing stage really determines the level of accuracy and precision of the statistical data produced. BPS is a pioneer agency in using computers because it has started using them since around 1960. Before using computers, BPS used calculators and Sipoa calculating tools to process data.

The computer technology specified in BPS is always adapted to developments in information technology and also refers to needs. Personal computers, which are generally cheaper and more efficient, have been tried to replace mainframes. Since the 1980s, personal computers have been used in all provincial BPS offices, followed by computer use in all district and city BPS since 1992.

By using personal computers, regional statistical offices can immediately process data processing, which is a series of activities starting from data collection, then entering raw data into the computer and then sending the data to central BPS to be processed into national data.

Data processing using personal computers has long been an example of processing applied by technical directorates at central BPS, especially if the directorate has to publish the results obtained from surveys conducted.

The 2000 Population Census data processing used a scanner machine, the aim was to speed up data processing activities. The positive effect of using computers by the technical directorate is that apart from being faster, it can also motivate the employees involved to take responsibility for producing as much statistical data and indicators as possible in a timely and accurate manner than before. Apart from that, the use of computers really supports BPS in producing various statistical data and complex indicators such as poverty, Input-Output (I-O) tables, Social Accounting Matrix (SAM), and various kinds of composite indices in a relatively short time.

In 1993, BPS began developing a geographic statistical information system, especially for processing regional data down to the smallest administrative units, which had been created manually since 1970. This regional data was created specifically to present prominent regional characteristics needed by policy formulators in planning. Development processing data, BPS has also developed various application programs for data entry, editing, validation, tabulation and analysis using various languages and computer packages. BPS is responsible for developing various computer software and transferring its knowledge and expertise to regional BPS staff.

The development of information technology infrastructure at BPS is based on the objectives to be achieved, namely following developments in demand and needs in processing statistical data, carrying out updates/innovations in terms of better work methods and making it easier for the public to obtain statistical information.

According to the regulation of the Head of the Central Statistics Agency Number 38 of 2020 concerning main performance indicators within the Central Statistics Agency for 2020-2024, the duties, functions and main performance indicators of the Provincial Central Statistics Agency are as follows:

a. Tasks

Carrying out basic statistics in accordance with the provisions of applicable laws and regulations.

b. Function

1. Review of the preparation and formulation of policies in the field of statistical activities;
2. Implementation of basic statistics;
3. Coordination of functional activities in implementing BPS duties;
4. Facilities and guidance for the activities of Government agencies in the field of statistical activities; and
5. Providing guidance and general administrative services in the fields of general planning, administration, organization, management, personnel, finance, archives, public relations, law, equipment and household.

6. Main Performance Indicators
7. Percentage of data users who use BPS data as a basis for national development planning and evaluation;
8. Presentation of statistical publications that apply accuracy standards as a basis for national development planning and evaluation;
9. Percentage of K/L/D/I implementing recommendations for statistical activities;
10. Presentation of sectoral and special metadata preparation by K/L/D/I according to standards;
11. Percentage of K/L/D/I that are able to independently carry out sectoral statistics in accordance with NSPK;
12. Results of the SAKIP assessment by the Inspectorate;
13. Percentage of data user satisfaction with Provincial BPS service facilities and infrastructure.

2.2. Statistical Data Analysis

Statistics is widely used in various fields, such as market research, business intelligence, data analysis, finance, and so on. As technology develops today, many businesses understand the field of data. Where, business people are starting to realize that data is really needed as a basis for strategic decision making. One of the reasons companies use statistical analysis is to predict future trends and minimize risks.

Statistical data analysis is the process of collecting and analyzing data to identify patterns and trends. This is a method of using numbers to try to eliminate any bias when reviewing information. Additionally, it can be considered a scientific tool that can inform decision-making.

Statistical data analysis does more for business intelligence than most other types of data analysis. Apart from that, it is also known as descriptive analysis. As a variety of quantitative research practice in which you collect and analyze categorical data to discover meaningful patterns and trends. Statistical data analysis is often applied to survey responses and observational data, but can also be applied to many other business metrics.

Types of Statistical Data Analysis

Before starting statistical data analysis, you need two parts:

- The raw data set that you want to analyze statistically
- Predefined analysis methods

Depending on the data you're working with, your desired results, and how it's presented, you may want to choose one of these two types of analysis:

1. Descriptive Statistical Analysis

This type of statistical analysis is all about visuals. Raw data doesn't mean much, and the amount can be overwhelming to digest. Descriptive statistical analysis focuses on creating basic visual descriptions of data or turning information into graphs, charts, and other visuals that help people understand the meaning of values in data sets. Descriptive analysis is not about explaining or drawing conclusions. It's just the practice of digesting and summarizing raw data, so that it can be better understood.

2. Inferential Statistical A

3. Inferential Statistical Analysis

The practice of inferential statistics involves more up-front hypotheses and follow-up explanations than descriptive statistics. In this type of statistical analysis, you focus less on the entire raw data set. Instead, you will take a sample and test your first hypothesis or estimate. From these samples and experimental results, you can use inferential statistics to draw conclusions about other data sets.

Benefits of statistical analysis

In general, statistics will help identify trends that would go unnoticed without this method. Analysis also includes objectivity in decision making. With good statistics, precise decisions are not necessary.

To be more specific, statistical analysis has proven itself in many cases. Statistics show where the most sales occur, where the sales have the most value and what marketing is attached to those sales. This allows increased efficiency in every aspect of sales and marketing. If the company has accurate data and is analyzed in the right way. Of course, this can improve company performance.

Likewise, statistical analysis can help work efficiency. In many cases, providing the right tools will get the best results from employees. Statistical analysis will allow employers to carefully research the effectiveness of each tool and focus on those that perform best. Of course, you can also learn this about statistical data analysis in Coding Studio. So, are you interested in having the skills to analyze data? Just check out our courses page.

CHAPTER IV. RESULTS AND DISCUSSION

3. Field of Activity

The implementation of data collection and field data processing at the Central Statistics Agency agency will be carried out in February 2023 starting with data identification and data distribution and grouping of data to be entered into the system. The data that will be analyzed statistically related to data processing and reporting systems are in section i Coordination Function, Integration of Statistical Processing and Dissemination.

The Statistical Processing and Dissemination Integration Coordination Function has three sections, namely the Data Processing Integration section, the Statistical Network and Reference section, and the Statistical Dissemination and Services section. In this function, the activities carried out are statistical data processing, website (ntb.bps.go.id), Regions in Figures (DDA), consumer satisfaction surveys, and data services and consultations. In this function, interns are placed in the Dissemination and Statistical Services section. In this function, interns receive several tasks from the coordinator of this function, including:

1. Download, rename and compile the Official Statistical News data based on category and year of publication, namely from 2008 to 2022.
2. Fill in the IPDS STATISTICAL items.
3. Create slides regarding the implementation of statistical activities and practical steps in surveys and compromises.
4. Fill in the data supporting the preparation of the 2022 West Nusa Tenggara Province IKPLDH document.

5. Download the static table on the Central BPS website (www.bps.go.id).
6. Monitoring table updates on the NTB Province BPS website.
7. Download the DDA (Area in Numbers) sub-district per district.
8. Create a BPS NTB Aladin application questionnaire using Google Form and summarize the results of the Aladin application questionnaire in Excel.
9. Create an opening narrative regarding BPS NTB innovations.
10. Fill in unemployment data from NTB in figures from 1990 to 2022.
11. Filling in data regarding statistics helps the government.
12. Fill in request data from the Tourism Office regarding hotels.
13. Register incoming books at the West Nusa Tenggara Province Central Statistics Agency Library.

3.1. Implementation of Data Processing Activities

The implementation is guided by coordinators in the Statistical Processing and Dissemination Integration Coordinator Function, especially in the Dissemination and Statistical Services sub-function of the West Nusa Tenggara Province Central Statistics Agency. Here are some details of the work interns do:

1. Download, rename and organize the Official Statistics News files based on category and year of publication, namely from 2008 to 2022.

In this activity, interns are given their first job by one of the coordinators in the Dissemination and Statistical Services section. In this activity the intern is explained how to do this work. After understanding, the interns started downloading the files on the website www.ntb.bps.go.id, the number of files reached 702 files. This downloading process took more than a week due to network problems in the Statistical Service Center room.

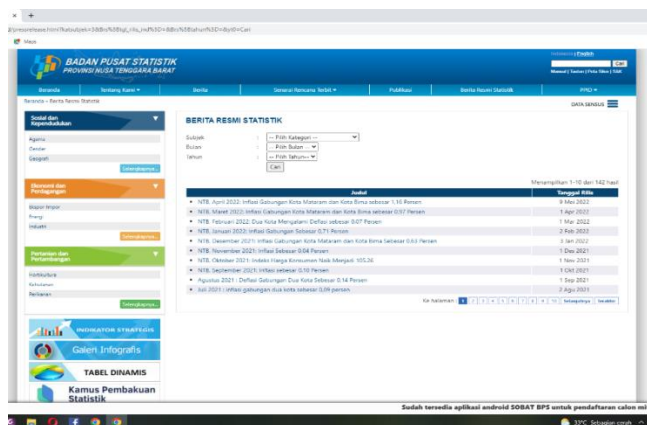


Figure 1. Official News Statistics Menu

(source: www.ntb.bps.go.id, 2022)

After all the files have been downloaded, the intern is assigned to rename (change) the names of the files so that they match the original contents of the file. Then arrange the Official Statistical News files based on category and year of publication. This aims to make it easier when there are data consultations, because the

network often has interference if there is a BPS NTB event using the zoom application. So that when data seekers look for data related to the Official Statistics News, it will make it easier to provide data by the service coordinator.

2. Fill in the IPDS Statistics items

This work is related to reports from the Function of the Integration Coordinator, Processing and Dissemination of Statistics regarding activities or work that have been completed, such as Sakernas, Susenas, RD, PMBT activities, Mapping and Updating of Statistical Work Area Content, Sectoral Statistics, Data Requirements Survey, SPHRB, and DDA. In filling in this data the intern is given a document and it is made in Excel form.

The image shows a screenshot of an Excel spreadsheet with the following columns: No.Uraian, Nama Kegiatan, Butir Kegiatan, Nama butir, Satuan, Angka Kredit, Bukti Fisik, Pelaksana, and Volume dgn Nilai Max. The data is organized into sections for 'SAKERNAS' and 'SUSENAS' with multiple rows detailing specific activities, their descriptions, and the responsible personnel.

Figure 3. IPDS statistical items

(source: Statistical Processing and Dissemination Integration Function)

3. Create slides or power points regarding the Implementation of Statistical Activities and Practical Steps in Surveys and Compromising.

In this activity, the intern is assigned by one of the coordinators of the Dissemination and Statistical Services section to make slides that will be used for a meeting with a government agency. The work is done with Power Point.

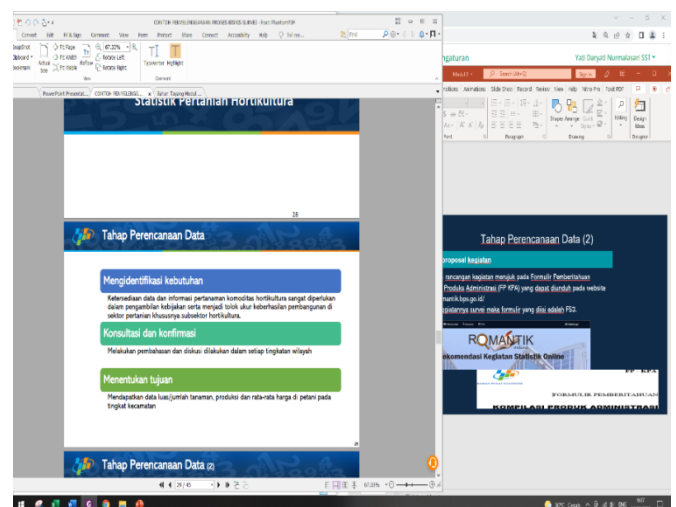


Figure 4. Silde of Implementation of Statistical Activities

(source: Statistical Processing and Dissemination Integration Function)

4. Fill in the data supporting the preparation of the 2022 West Nusa Tenggara Province IKPLDH document.

This data processing activity is assigned by one of the coordinators of the Dissemination and Statistical Services section. This is a request for data from a government agency to complete their documents. In the process of filling in this data, interns are directed to download West Nusa Tenggara in Figures for 2021 on the Publications menu on the official BPS NTB website. In preparing the IKPLDH document, several supporting data are required, such as the area by Regency/City, the number of sub-districts and villages by Regency/City, and Gross Domestic Product at Current Prices.

In this work, interns are directed to download West Nusa Tenggara in Figures for 2021 on the Publications menu at www.ntb.bps.go.id. Then the intern transfers the data obtained to Excel.

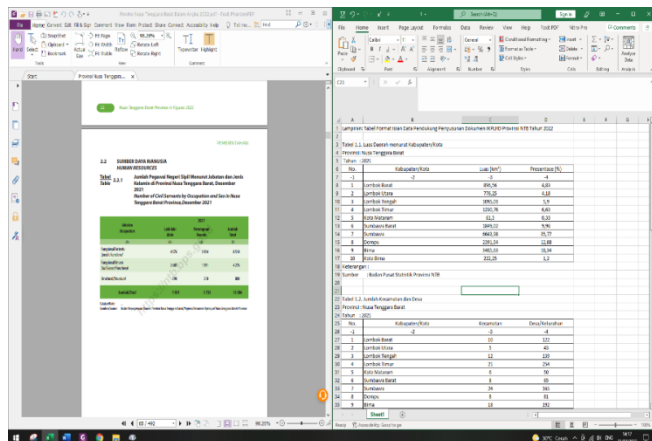


Figure 5. West Nusa Tenggara IKPLDH document

(source: West Nusa Tenggara Central Statistics Agency)

5. Download the static table on the official website of the Central Statistics Agency (www.bps.go.id).

This activity is assigned to complete the data for the Dissemination and Statistical Services section and also to increase the knowledge of the intern. Because the data in this static table reaches thousands of data, the coordinator of the Dissemination and Statistical Services section provides one section each. Interns receive a Social and Population section, this section also consists of several sub-sections, namely as follows:

- c. Gender
- d. Geography
- e. Climate
- f. Human Development Index
- g. Poverty and Inequality
- h. Population
- i. Health
- j. Consumption and Expenditures
- k. Environment
- l. Government
- m. Education
- n. Housing

- o. Politics and Security
- p. Village Potential
- q. Social and Cultural

Labor

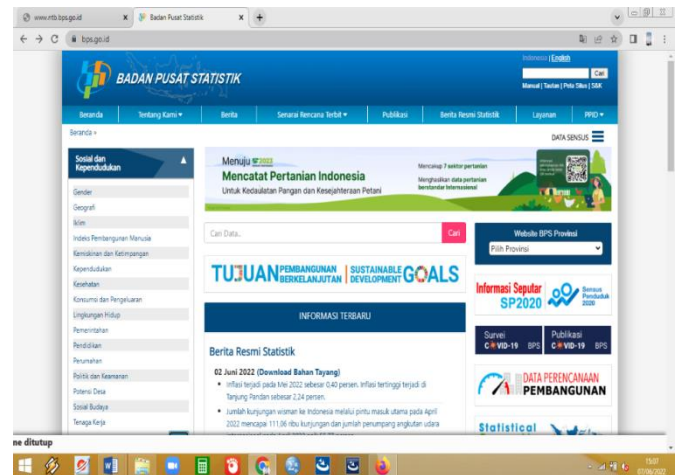


Figure 6. Social and Population Statistics Table

(source: www.bps.go.id)

6. Monitoring updating tables on the official website of the West Nusa Tenggara Province Central Statistics Agency.

In this activity the apprentice is directed by two coordinators at once and this work is carried out by three people. Interns monitor data totaling 191 data related to Social and Population. In the process of carrying out this assignment, it was carried out via Google Spreadsheets.

7. Download KCA (District in Figures) Bima Regency, Dompu Regency and West Sumbawa Regency.

In this assignment, the internship is given by one of the coordinators in the Dissemination and Statistical Services section. This task is given to anticipate requests for related data and also to anticipate if the internet network is experiencing problems.

In this work, the intern is directed to the official website of the West Nusa Tenggara Provincial Central Statistics Agency in the Publications menu. Interns get a share in downloading sub-districts in numbers in Bima, Dompu and West Sumbawa districts. Once completed, these files are handed over to one of the coordinators in the Dissemination and Statistical Services section.

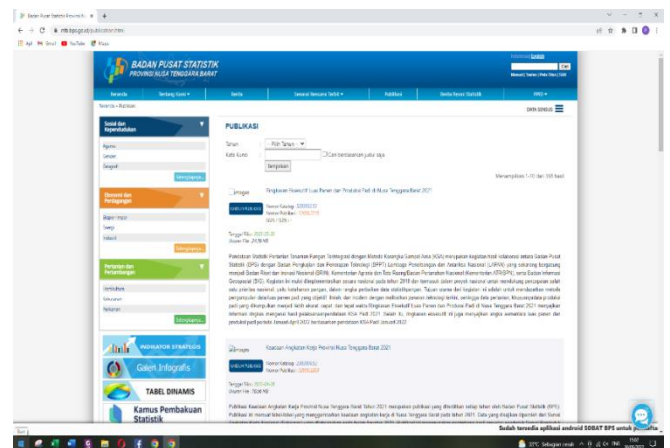


Figure 8. BPS NTB publication

8. Create and summarize the Aladin application questionnaire for the Central Statistics Agency of West Nusa Tenggara Province.

In this activity, the Dissemination and Statistical Services section works with other interns. Previously, the Aladin application (Official Travel Application) was one of the applications used for employees who went on official trips.

In carrying out the task of making this questionnaire, interns are directed together with other interns. Interns are directed to hold an impromptu meeting to explain the process of making this questionnaire, starting from the stage of discussing what will be filled in, how to discuss it well, how to make it, and themes that are suitable for each application. This activity is carried out using a Google form, always supervised by one of the coordinators. After completing the process, the apprentice waits for a customer to fill it in and waits for the results to be processed.

And the final stage is to recap the results of the Aladin application questionnaire. At this stage the apprentice is given directions for the work, and what is used is Word and Excel. Word is used to summarize data from Google Forms and Excel is used to process the recap results into graphs and so on.

CONCLUSION

Obstacles Faced

During the process of inputting and processing data, the coordinator of the Dissemination and Statistical Services section is assisted. However, during the processing and analysis of statistical data, it is in accordance with the existing guidelines and data input system at the Central Statistics Agency, as follows:

- a. Official Statistics News download activity

This download process takes time to import the data because the obstacle faced is a network problem in the office. So, interns still complete the assigned tasks but take a long time.

- b. Data preparation has been organized according to the needs of the data to be processed and analyzed which takes one week to enter the data base so that it can be published.

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