

MICRODATA STATISTICS FOR PUBLIC POLICY IN THE SOCIETY ERA 5.0

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ABSTRACT

The era of society 5.0 brings a new concept so that people can enjoy technology in life comfortably. The problem faced today is about the gap in access to technology. The government needs to solve this problem by knowing the socio-economic conditions of the population as a whole. This research uses the type of library research. Based on the results of the 2021 Data Needs Survey, 92.52 percent of consumers use BPS data for development planning, monitoring, and evaluation. Seen by type, only 13.86 percent of BPS data consumers use micro data. In the context of government, micro-statistical data has been used to see development achievements. It is hoped that in the future, more public policies will be produced by various parties, supported by factual data and evidence.

Keywords: *Micro Data, Policy, Statistics*

INTRODUCTION

The rapid development of technology has accompanied human activities, as can be seen from the emergence of the industrial era 4.0. The industrial revolution 4.0 brings the concept of automation carried out by machines without the need for human labor in its application. Gilchrist (2016) explains “the name industry 4.0 refers to the fourth industrial revolution, with the first three coming about through mechanization, electricity, and IT”. Various new innovations were presented in the industrial era 4.0, including the Internet of Things, Internet of Service, Big Data, Artificial Intelligence, genetic engineering, and smart machines. The industrial era 4.0 brings many advantages, including increased business competition, increased productivity, increased net profits, increased job opportunities in the IT sector, optimal production processes, and increased service quality.

The internet takes a big role in the development of the industrial revolution 4.0, especially with the emergence of the Internet of Things where work is connected and run through the internet. Internet penetration is a challenge in implementing technology in the industrial 4.0 era. According to BPS data, in 2021 as many as 62.10 percent of the population aged 5 years and over accessed the internet in the last 3 months. Only about six out of ten residents access the internet. Judging by the area where they live, there are differences in population internet access, where urban residents have reached 71.81 percent, while rural residents have only reached 49.30 percent. If viewed by province, there is a relatively large gap in this achievement, the lowest is 26.49 percent in Papua Province and the highest is 85.55 percent in DKI Jakarta.

The gap in population internet access is not only caused by uneven infrastructure problems, but also the ownership of ICT equipment by the population. BPS data (2021) shows that only 65.87 percent of the population aged 5 years and over will own a cellular phone in 2021. If the ownership of a cellular phone is only 65.87 percent, it is still difficult to achieve higher internet penetration than this figure. The socio-economic gap of the population also contributes to the inequality of internet access of the current population. Progress in the

industrial era 4.0 is not easy to follow and benefit the entire population today. The development of national digital infrastructure is one of the 10 national priorities for "Making Indonesia 4.0" with a macro achievement target of the top 10 world economies by 2030.

Not long ago entering the industrial era 4.0 with its various challenges, we are already faced with a new era of society 5.0. The term society 5.0 first appeared in Japan 2016. Since then, it has been spreading and its underlying concept continues to be shaped. Society 5.0 can be defined as a society of intelligence, in which physical space and cyberspace are strongly integrated (Salgues, 2018). Industry 4.0 is seen as reducing the role of humans and replacing them with machines, while society 5.0 builds a human-focused society based on technology. Society 5.0 is here to harmonize economic achievements and solving social problems, by anticipating the role of humans being completely replaced by robots.

The era of society 5.0 brought many digital transformations. There is a trend shift in the economy, from previously industry-based to digital technology-based. Facing this shift, in the future there will be fewer conventional jobs, including cashier, bank teller, customer service, and several other jobs. On the other hand, new types of jobs have started to appear in line with technological advances, including programmers, IT managers, web developers, data analysts, and several other jobs.

Many things must be prepared to face the era of society 5.0. Prospects and challenges towards the era of society 5.0 need to be formulated to facilitate steps. Identification of prospects and how the challenges may be faced is the first step in the roadmap to society 5.0. Accurate data and information are needed for evaluation of achievements and identification of problems encountered. It's not easy and it's not in the right direction to build without data. George R. Terry in Chaniago (2017) explains that the basis for decision making can be classified into five namely intuition, experience, facts/data, authority, and rationality. Policy making without data-based requires large costs but small impact (high-cost low impact).

In the era of information disclosure as it is today, a lot of data can be easily accessed. As a basis for evaluation, planning, and control of development, not all data meet the criteria to be used. Quality data according to BPS Regulation Number 4 of 2019 concerning NSPK for the Implementation of Sectoral Statistics by Regional Governments, must meet the criteria of being relevant, accurate, timely, easily accessible, easy to interpret, and consistent. One of the data that meets the criteria and can be used is microdata which is available and widely accessible to the public through the Central Statistics Agency (BPS).

Various microdata from census/survey results can be accessed by the public for various purposes, one of which is used in policy making. Data becomes the most important aspect in all interests. Microdata is widely used for policy making and scientific research purposes. Microdata plays an essential role as a primary data source in the production of official statistics. In addition to their use for statistical purposes, the potential of microdata for policy and scientific purposes has been increasing recognized over recent years (Bujnowska, 2019). Bujnowska further explained that many National Statistics Office (NSO) provide data in microdata format that can be accessed by the public, including the Central Statistics Agency in Indonesia.

Microdata is very appropriate to be used for planning, monitoring, and evaluation because the available data contains much more complete and comprehensive information. Cross-variable and cross-regional analysis within the specified characteristics is possible

because the data are available up to the individual level. In the past, data were typically released in the form of aggregate statistics (big data): while providing a first layer of protection to the individuals to whom the statistics relate, as no specific data of single respondents (i.e., the individuals to whom data items refer) are (apparently) disclosed (Capitani, in Livraga 2019). This study will discuss the availability and use of microdata primarily to support policy planning and evaluation so far in Indonesia.

METHOD

In this study, the author uses a type of library research (library research). Literature research is carried out by reading, reviewing, recording various literature and reading materials that are in accordance with the subject matter and processing research materials. Several types of library materials were used in this research, including:

1. Statistical Publications

Analysis of statistical publications is done by reading a number of statistical publications to be used as a reference or reference. The statistical publications referred to in this study are official publications containing statistical data and published by the Central Statistics Agency (BPS).

2. Planning Documents

Analysis of planning documents is carried out by reading a number of books related to development planning which explain the use of data in policy making

3. Research journal

This study uses several journals as a reference to adapt to new knowledge.

RESULTS AND DISCUSSION

A. Microdata Availability and Access

Various institutions provide microdata that can be accessed by the public, one of which is BPS. Data from the results of certain censuses and surveys, in addition to presenting the results in the form of dynamic tables and publications, are also available in microdata set files. Quoted from <https://sillastic.bps.go.id> There are much microdata currently available, including: Population Census results, National Labor Force Survey, National Socio-Economic Survey, Village Potential Data Collection, Inter-Census Population Survey, Happiness Level Measurement Survey, Economic Census, Agricultural Census, Foreign Trade, Survey Annual Large/Medium Industrial Companies, Inter-Census Agricultural Survey, etc.

Microdata available at BPS can be obtained through the Statistical Service Information System at the link <https://sillastic.bps.go.id>. For starters, service users are asked to register to then be able to submit the necessary microdata requests. Microdata purchase transactions are subject to a Non-Tax State Revenue (PNBP) fee referring to Government Regulation Number 7 of 2015.

In accordance with Central Statistics Agency Regulation Number 2 of 2019, certain parties may submit requests for data of Rp. 0.00 (zero rupiah), including Central and Regional Agencies, Domestic Educational Institutions, State Institutions, Representatives of foreign countries, and International Institutions. These parties are subject to a zero-rupiah tariff for activities carrying out state and/or government duties, scientific research and development, community empowerment, and international obligations/commitments. There are several

impositions of zero-rupiah tariffs which are explained in the regulation. Until now, many government agencies have used the zero-rupiah tariff to obtain microdata to support government tasks.

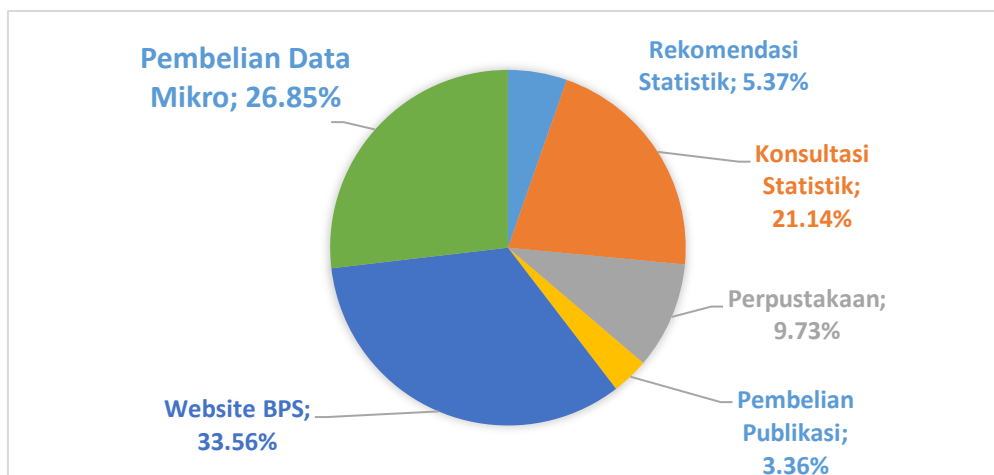


Figure 1. Percentage of Consumers in BPS PST by Type of Service

The results of the 2021 Data Needs Survey (SKD) conducted by BPS showed 26.85 percent of consumers used the services at the Integrated Statistical Service (PST) to purchase micro data. This figure has increased compared to 2017 which was recorded at 23.47 percent. This increase is one indication of the increasing number of service users who are aware of the existence of microdata and choose to use microdata for various purposes.

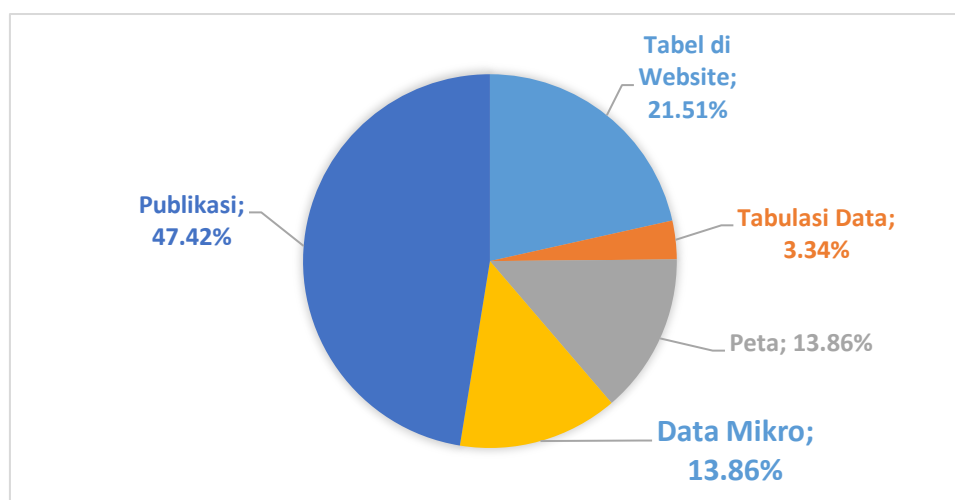


Figure 2. Percentage of Data Acquisition by Type of Data Source

As an agency providing statistical data, BPS offers various forms of data source media, including publications, microdata, maps, data tabulations, and tables on the website. The results of the 2021 SKD show that 13.86 percent of the total BPS data acquisition is obtained by consumers through microdata sources. The wealth of information stored in microdata is the reason more and more service users submit requests for microdata.

B. Utilization of Microdata for Planning, Monitoring and Evaluation

Microdata has an important role in planning, monitoring, and evaluating current policies. Complete and linked microdata should allow better setting of policy objectives and targets, better policy design and better measurement of policy outcomes in terms of the ultimate

objective of citizen well-being (Langedijk, 2019). Langedijk explained that complete microdata can be used to design policies and measure the achievements of a policy that leads to people's welfare.

Development planning is the process of formulating alternatives or decisions based on data and facts that are used as material for carrying out a series of activities. Monitoring is observing the implementation of activities and anticipating problems that arise so that action can be taken as soon as possible. Development evaluation is an objective assessment of the implementation and results of the interventions that have been carried out.

Brodjonegoro in Bappenas (2017) said "The ability of policy makers to utilize various data sources, including digital data trails can help the government to make decisions quickly and accurately. High quality data will make the provision of correct information to policy makers to design, monitor and evaluate policies.

Based on data from SKD2021, nationally 92.52 percent of consumers of Ministries/Institutions/Regional Apparatus Organizations use BPS data for development planning, monitoring, and evaluation. If viewed by region, there are six provinces where all K/L/OPD consumers use BPS data for planning, monitoring and evaluation of development.

In the era of Big Data, Sustainable Development Goals (SDGs), and Nawacita, information on the achievement of development targets becomes the main data source for policy makers. Various data from various sources are available for planning, monitoring, evaluation, and accountability measurement, one of which is the results of the National Socio-Economic Survey (Susenas). Through Susenas microdata, indicators can be obtained that provide an overview of progress in the social and economic fields. These include indicators for macro development targets, indicators for the National Medium Term Development Plan (RPJMN), and indicators for the SDGs.

The medium-term development target of 2020-2024 is to realize an independent, advanced, just and prosperous Indonesian society through accelerating development in various fields by emphasizing the establishment of a solid economic structure based on competitive advantages in various regions supported by quality and competitive human resources. (Regional Cabinet Secretariat, 2019). Of the 11 macro development targets that have been set for 2020-2024, 3 targets were calculated using Susenas microdata, namely the poverty rate, the Gini ratio, and the Human Development Index (IPM).

The success of development in realizing Indonesia's vision is carried out through nine missions known as the second Nawacita. Nawacita is outlined in 7 development agendas. Susenas microdata supports the availability of indicators in 5 of the 7 established development agendas. The five development agendas that use indicators sourced from Susenas microdata are:

1. Strengthening economic resilience for quality growth (9 indicators)
2. Develop areas to reduce inequality and ensure equity (4 indicators)
3. Improving quality and competitive human resources (14 indicators)
4. Mental revolution and cultural development (1 indicator)
5. Strengthening infrastructure to support economic development and basic services (8 indicators)

In the Sustainable Development Goals/SDGs, there is not a single goal that does not use Susenas microdata in its indicators. Based on the second edition of the SDGs metadata, of the

289 indicators, 114 indicators are the responsibility of BPS to prepare the data. Of the 114 indicators, 43 of the SDGs indicators produced by BPS are sourced from Susenas microdata.

Microdata Susenas in planning is used to determine the achievements in the base year (baseline). For each indicator a value is set at the baseline as a reference for calculating targets that must be achieved at the end of the development period. Monitoring or monitoring of indicators that is carried out every year also utilizes Susenas microdata to measure periodic achievements. This becomes very important to know developments and progress as well as input for determining activities, policies, or programs in the following year. As a management function, monitoring is also useful for identifying problems in management and implementation so that in the next period the same risks can be resolved.

In the context of evaluation, Susenas microdata can be used to measure achievement using a goal-based approach and decision making. In the goal-based approach, Susenas microdata is used to assess the achievement of goals and objectives by comparing the baseline and progress data up to the end of the period. In the decision-making approach, Susenas microdata is used as a source of information whether the program is running effectively, should it be continued, and how the program should be modified.

CONCLUSION

The era of society 5.0 will soon come with a new concept for the purpose of making people really enjoy technology in life and feel comfortable. This is a solution to the problems that emerged as part of the industrial revolution 4.0 which is feared to degrade humans. The industrial revolution 4.0 has at least six main pillars, namely digital society, smart mobility, healthy living, sustainable energy, civil security and technology in the workplace.

Currently, Indonesia is still faced with the problem of the digital literacy gap of its population. There are still quite a lot of people who have not tasted and enjoyed the fruits of the industrial revolution 4.0. On the other hand, some residents are ready to welcome the new era of society 5.0. This is a challenge for the government, especially in realizing the targets of equitable development and applying the SDGs principle "no one left behind".

Understanding the social and economic conditions of the population is a prerequisite for the government to know what to do in the face of the society 5.0 era. All of this can be realized by utilizing the various microdata currently available. This is quite reasonable because microdata is very informative to the smallest level of households, even individuals. Individual profiles and behavior can be easily identified through statistical microdata exploration. Spatial analysis between regions can also be done by exploring existing microdata. Planning, monitoring, and evaluation are some of the stages in development by the government that has utilized microdata statistics at this time. It is hoped that in the future, more public policies will be produced by various parties, supported by factual data and evidence (Evidence Based Policy).

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