# Development of labor market information system in Indonesia towards world class

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## Abstract

The demographic dividend can provide benefits for Indonesia. The proportion of the working-age population in Indonesia until 2021 is reaching 205.36 million, which is 68.08 percent of the workforce. The labor force participation is 93.74 percent, with the informal sector as much as 59.6 percent, and the number of unemployed reaches 6.26 percent. The labor force structure profile is challenging for the Indonesian government to encourage the population to participate in the industry. The development of the Labour Market Information System (LMIS) is one of the government to gather job seekers and employers to reduce unemployment. This study aims to evaluate and analyze the LMIS developed by the Government of Indonesia and formulate an LMIS development strategy to meet international standards. This study uses qualitative analysis methods. Sampling using purposive sampling technique by taking samples of several provinces categorized as densely industrialized and with a high unemployment rate. LMIS, owned by Indonesia, is still classified as a basic level to the middle class. Based on the problems that occur in LMIS development and the low level of utilization, the LMIS development method must be based on and pay attention to the needs of stakeholders.

**Keywords**: Labour Market Information System, Employment Information System,  Roles and Functions of LMIS

## INTRODUCTION

Based on a 2018 World Bank study results, the Indonesian government's labor market information system is currently at the basic to intermediate level. This condition shows that Indonesia still needs to catch up in developing a LMIS. Indonesia's LMIS must be pushed even harder to lead to an ideal job market system like in South Korea, which has five indicators: relevant, reliable, efficient, client-focused, and comprehensive (Intan, 2021). When referring to a world-class LMIS, four main functions must be possessed: career guidance, job matching, and labor market analysis, and they can be used as the basis for active employment policies (Santia, 2021).

Indonesian LMIS needs to function more effectively so far. This condition indicates a high mismatch between the skills possessed by graduates of formal/informal education and the skill requirement of the industry. This condition impacts many youths with higher secondary education who must be more qualified. On the other hand, it is difficult for the industry to fulfill the requirement of highly skilled employees (Santia, 2021). Labor Market Information is information regarding the characteristics of the need and supply of labor, information

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related to job vacancies must be easily obtained and accessed by the public (Setiawan et al., 2018). With the availability of reliable labor market information, it is expected to overcome the problems of the labor market in Indonesia, namely the mismatch of education-work needs, inefficient job matching, the lack of a workforce that matches work needs, and low labor productivity.

The government's improvement of the labor market information system will impact employment significantly. The service and management process of national-scale labor market information uses the Employment Information System (SISNAKER) developed by the Ministry of Manpower. The Ministry of Manpower's programs needs support from related stakeholder. An integrated labor market information system with industry data will make allocating workers easier for the government and companies (Fauzan, 2021). The Ministry of Manpower continues to strive to develop a labor market information system by integrating data on training, certification, and placement of workers in a complete and adequate business process to bring together job seekers with job market demands (Intan, 2021). Preparing an integrated national labor market information system is the responsibility of all stakeholders, namely the world of industry, education, job training institutions, local governments, Central Government, and others (Charles, 2021). Integration involving all interested parties is expected to have a positive impact on all stakeholders eventually.

This research related to the importance of providing a labor market information system in Indonesia to reduce the unemployment rate and increase the link and match between the world of education and the business world has been widely carried out in various provinces, cities, and regencies in Indonesia. The Public Service Development Model for registration and placement of job seekers following current conditions is a development model that utilizes information and communication technology to make it easier for job seekers and employers to access information quickly, easily, and freely (Husain, 2019). The Manpower Office supervises the service for providing labor market information systems in the regions at the Provincial/City/Regency Level. One of the roles of the Department of Manpower in placing workers and expanding job opportunities is by submitting job vacancy information according to company needs. Efforts to improve the labor market information system include planning across regions and sectors through job fairs, social media, and websites to accelerate filling job vacancies, including improving services for the placement of workers abroad (Hariyati & Dama, 2019).

One of the efforts made by the Manpower Office of the Sleman Regency to reduce unemployment is to improve the policy of the labor market support program by encouraging the formation of labor market information and the implementation of job market activities (Cahyohadi, 2019). Errors in choosing technology to convey information will result in not being right on target. White-collar jobs will differ from blue-collar jobs in using technology to convey information. The first field of work will be on target when using internet technology. The use of simple technology, such as through radio or television, is more targeted at blue-collar job seekers (Martono, 2011). Information & communication technology is the perfect medium to support the demand for employment services. It brings a vast network to job seekers so that job seekers and employers can easily communicate (Husain, 2011). The labor market information system can reduce the open unemployment rate caused by a lack of information, known as frictional unemployment, which means that the demand for labor and the supply of labor can be reconciled more quickly (Mantra, 2003). Through online job market information services, it is hoped that every job seeker or company who comes to the officer in charge of the workforce at the provincial/district/city level can be directly served online, and their data can be sent directly to the center (Yani, 2017).

## LITERATURE REVIEW

Other studies discuss improving the function of the labor market information system both nationally and regionally. To increase the effectiveness of the implementation of online job market information, it is necessary to disseminate information regarding the existence of online job market information, to maximize the role of functional introductory workers or inter-work workers, as well as the need for planning for human resource requirements that handle future workforce placement services (Cahyohadi, 2021). Coordination between ministry agencies and between sectors needs to be improved regarding the direct involvement of institutions/

companies in discussing the implementation of the labor market information system (Suryadi et al., 2011). It is necessary to improve the abilities or skills of employees or staff in agencies that have developed digital-based information systems by holding self-development training and training related to technology and information so that problems that become obstacles can be adequately resolved (Dariah, 2015).

Based on the results of the studies above, the Indonesian government needs to continue to develop job market information based on digital technology. Developing a reliable labor market information system is expected to overcome the high unemployment rate and create a link and match between education and industry. Previous studies have discussed the labor market information system carried out by local governments through the relevant agencies as the person in charge of labor issues. As for the research conducted on the national-scale labor market information system, which the Ministry of Manpower has developed, little has been done. This study aims to analyze and evaluate the national-scale labor market information system that the central government has developed through the Ministry of Manpower. This study aims to capture the extent to which the labor market information system owned by the Government of Indonesia can be widely accessed by people throughout Indonesia and can meet the needs of job seekers and employers, which in turn is expected to reduce the open unemployment rate. This study also discusses the weaknesses that still exist in the labor market information system owned by the Indonesian government and strategies to overcome them.

## METHOD

This study uses an interactive model of analysis, which has three components: data condensation, data presentation, and concluding/verification. (Miles et al., 2014). Sampling in this study used a purposive sampling method, namely the sampling method based on the specific objectives of the researcher. Sampling was conducted in several provinces: West Java, Banten, the Special Region of Yogyakarta, Lampung, and South Sumatra. The criteria used in the selection of the sample are provinces that have pretty complex employment problems, including in terms of a high open unemployment rate or a large number of industries. The data used in this study are primary data and secondary data. Primary data was obtained through in-depth interviews, focus group discussions (FGD), and observation. FGD and were held in 5 sampling provinces. FGD invited components of stakeholders in every province, such as regional employment offices, regional education offices, job training institutes, professional certification bodies, and the representative of the job seeker. The results of the FGD would be the mapping material to be clarified in an in-depth interview. Clarification cannot be held during FGD because of limitations and confidential information.

The secondary data were obtained through a literature review from journals, mass media, laws and regulations, and other related documents. The informants in this study are considered to understand. They can provide more explicit information about various aspects of the Labor Market Information System developed by the Ministry of Manpower. Key informants in this study consisted of; Structural officials and related functional officials within the central, provincial, district/city government.

## RESULTS AND DISCUSSION

### a. The Role and Function of the Labor Market Information System for Indonesia

The demographic bonus can benefit Indonesia by being free from the trap of middle-income countries (Ikhsani, 2022). From the structure of the Indonesian population, more than 75percent consists of Generation X, Millennials, and Generation Z. This condition has a golden opportunity as a demographic bonus, just managing human resources so that the demographic bonus can be an economic bonus (Kusumawardani & Richard, 2020). In the employment case, there is still a mismatch phenomenon in the labor market, namely a mismatch between demand and supply. Based on BPS data between 2008 and 2018, the number of graduates from higher education increased to 131.33 percent, vocational school graduates to 67.47 percent, and high school graduates to 28.31 percent. Meanwhile, the proportion of workers with junior high school education and below continues to decline (Hasibuan & Handayani, 2021). There are two types of mismatch, namely vertically, when

workers work not according to their level of education, they work in fields that require competency at one level below, something needs to be more qualified so that in terms of economic calculations, waste occurs. Another factor regarding the high level of mismatch in Indonesia is the heterogeneity of demand for skills in the labor market. Each sector in the labor market has its characteristics that require specific skills. Prayudhani (2020) found that the level of mismatch in Indonesia differs by sector. As for the mismatch from the flat side, there is a mismatch between educational background and work. Work and education should be different, but there will be waste in the development of human resources. Something that is taught needs to be practiced optimally. This is a challenge to the workforce.

The function of the Ministry of Manpower is unique. Not all Ministries and Institutions can have a function in the supply and demand of Employment. This is what the Ministry of Manpower encourages to develop labor market information because its two functions are complete. The urgency of developing labor market information is to optimize the role of the labor market as a link between supply and demand. To speed up the meeting of the two variables, an intermediary must take on this role so that both sides can obtain adequate information. The labor market is the meeting between the demand and supply of labor (Marheni et al., 2017). The Labor Market Information System is a set of institutional arrangements, procedures, and mechanisms designed to coordinate the collection, processing, storage, retrieval, and dissemination of labor market information to address the needs of labor market participants. Job market information service is intended for job seekers to obtain information about the desired job and for employers to obtain labor information following their company's needs. (Dariah, 2015). The Ministry of Manpower has the authority and responsibility to develop and supervise the use of the labor market information system following the following provisions; UU no. 7 of 1981 requires all employers to provide information related to Employment, including job vacancies, to the agency that deals with this issue, Law no. 13 of 2003 concerning Manpower covers all areas of labor administration including labor market information systems and employment services, ILO Convention No. 88 of 1948 which was ratified by Indonesia in 2002 and guarantees the provision of free public employment services for citizens (Anonymous, 2015).

The function of labor market information is not only to get a job but this labor market information it can be used to get the proper updates to develop other policies from the supply side. Study and training programs can be prepared to update the competency standards of workers to encourage them to do up-skilling and re-skilling. The government, from the supply side, encourages short-term and long-term policies. In the long term, it encourages vocational institutions, while in the short term, it is through skills training programs, for example, through the pre-employment card program. The Labor Market Information System (LMIS) supports the vocational education and training system. At this time, Indonesia has the resources to develop Technical and Vocational Education Training (TVET) under the authority of the Ministry of Manpower, Ministry of Education and Culture, Ministry of Research and Technology, and others. The Indonesian government has tried to redefine education and TVET by applying the vocational concept based on demand for labor or a demand base. It is necessary to introduce how to do labor mapping. The government must have a map of comprehensive labor demand so that the role of LMIS becomes crucial. LMIS is a system for mapping labor needs in the short term. LMIS is a labor market clearing system, real-time supply, and demand for labor today. LMIS can be used as a human resources training guide for up-skilling and re-skilling. LMIS can also identify what skills do not exist in Indonesia, so expertise must be imported from outside. LMIS is part of the reform of the education and vocational system that emphasizes a demand-driven approach. In the Medium Term Development Plan, one of the priorities for the vocational reform strategy is mapping expertise needs, including strengthening LMIS. A labor market information system must be developed immediately to support education and training policies automatically. Incorrect presentation and analysis of LMIS data will result in inappropriate education and training policy-making.

The development of LMIS is also one of the policies to protect Indonesian Migrant Workers (PMI). Not only can access job vacancies or employment conditions in the country, but LMIS can ensure that PMI is protected by providing access to adequate skills. The following function of LMIS is to play a role in developing regional advantages. LMIS can be a means of planning how to prepare a sufficient workforce to meet the needs of a new growth center. Job market information can reduce the mismatch between supply and demand, helping the

government distribute employees currently based on Java-centric. With reliable job market information, there will be no labor shortage when opening a new industry in Suawesi or Kalimantan. This will automatically encourage investment in specific sectors. If the human resources, training institutions, and educational institutions in a location are adequate, it can encourage the opening of new investment areas.

Users of labor market information can be from various parties, namely; the government for policy formulation, companies to be able to get information when recruiting employees, students to be able to identify what skills they will pursue and identify jobs that match their interests and talents, for job seekers to look for job opportunities, educational and training institutions to be able to see the needs of the business world and industry, as well as for counselors to assess job vacancies and training or skills requirements and offer advice to job seekers or students.

For labor placement services to be maximized, especially in providing labor market information, it can be done based on digital technology so that the public, especially job seekers and employers, can obtain job market information quickly and up to date (Fitrani et al., 2011). Digitizing labor market services to provide digital-based services and information for society without using manuals is one of the implementations of Law No. 11 of 2020 concerning Job Creation, which was later revealed to Government Regulation No. 37 of 2021 concerning the Job Loss Guarantee. In article 18, a person who loses his job gets three benefits: cash, training, and information on the job market. Regarding job market information, it should benefit people who have lost their jobs. As mandated in the Job Creation Law, job market information must be valuable so that its value can be equal to or even more than other benefits, namely, getting cash and access to training. It is a considerable challenge to respond so that when people access job market information, they get something of value, not the ordinary information they can get from the internet, but having to provide something different.

The problem faced by the Indonesian government is the business structure, which micro and small companies dominate. How can they also be included in labor market information? It is not easy for informal businesses to be pushed into the labor market information system, even though they must recruit employees. With the information on the labor market, it is hoped that all formal and non-formal businesses can embrace micro, small, medium, and large businesses. Micro and small businesses need extra encouragement to be able to enter everything into the labor market information system. Not all graduates of formal training and education enter the job market, some enter the industry, and they need to enter labor market information to recruit their employees. This graduate must be prepared together in developing labor market information.

## b. The Concept of Developing a Labor Market Information System in Indonesia

The concept of the labor market information system developed in Indonesia is part of the employment service ecosystem, which is a service that can integrate all sub-systems in Employment, starting from the Indonesian National Work Competency Standards (SKKNI), accreditation, training, certification, Karirhub, and other employment services. With the integrated data concept, it is hoped that any data will be obtained through the employment service ecosystem. Indonesia's labor market information system is part of the Employment Information System known as "SISNAKER," built in 2018 and continues to be developed with a single sign-on system. Sisnaker is a digital ecosystem that becomes a platform for all types of public services and employment activities at the central and regional levels. Part of Sisnaker, Karirhub is a service that combines job seekers and employers using Artificial Intelligence technology. The Sisnaker and Karirhub Service Architecture can be seen in Figure 1.

Karirhub is Indonesia's existing LMIS. Karirhub is one of the Sisnaker services provided to job seekers to find work by providing a system that can bring together employers and job seekers. Through Karirhub, job seekers can get jobs that match their talents, interests, and abilities, while employers can get workers according to their needs.

**Figure 1: Sisnaker and Karirhub Service Architecture**

Karirhub is designed to provide safe, guaranteed, and valid information because it is integrated with the Compulsory Employment Report Company (WLKP) application so that companies will fill job vacancies at Karirhub, must first enter WLKP. Every company that adds planning data on the use of labor in WLKP will automatically publish vacancies to Karirhub. Job seekers who are accepted as employees will be automatically sent to the WLKP in the Manpower section and immediately verified for Social Security because it has been integrated with the Employment Social Security Administration (BPJS) for Employment. Karirhub provides information on formal, non-formal (individual), and freelance job vacancies. Job seekers can access Job Fairs held by the Ministry of Manpower/Provincial/District/City Offices because they are integrated with the Job Fair Application. Foreign job vacancies will also be included in Karirhub, both formal and non-formal, currently still in progress. Job seekers can search for vacancies that match their certification competencies because Karirhub will be integrated with the National Agency for Professional Certification (BNSP) certification application. Karirhub will be developed to include a Self-assessment function using artificial intelligence so that employers can find out; the personality of the job seeker, the advantages of the job seeker, and the right career for the job seeker.

The LMIS concept developed in Indonesia is known as the 3 in 1 concept, which includes Training-Certification-Placement. Trainees who have attended the training will be advised to take the certification or apply for jobs according to their expertise. Training participants who have completed the certification will receive an offer to work according to their expertise. Companies post job vacancies and make selections, job seekers who receive placement data will be sent directly to WLKP, and applicants who do not qualify will be directed to participate in training. The matching system is built using machine learning technology so that the matching is more leveraged, as described with the flow of labor placement in Figure 2.

The National Development Planning Agency (Bappenas) and the World Bank researched the LMIS function that still needed to be created in Sisnaker and Karirhub. Based on the results of research by Bappenas and the world bank, LMIS in Indonesia at that time was still at the basic to intermediate level, which meant that it could provide essential services. From the side of the actors involved, it still involves a small amount of the public sector, has started job matching, and has started to unite LMIS with the company registration process. Several things must be considered; namely, the owned LMIS system must provide real-time data on expectations to achieve the advanced level of LMIS standards. When Indonesia wants to pursue the advanced LMIS owned by Korea, more improvements must be made to the LMIS in the Sisnaker.
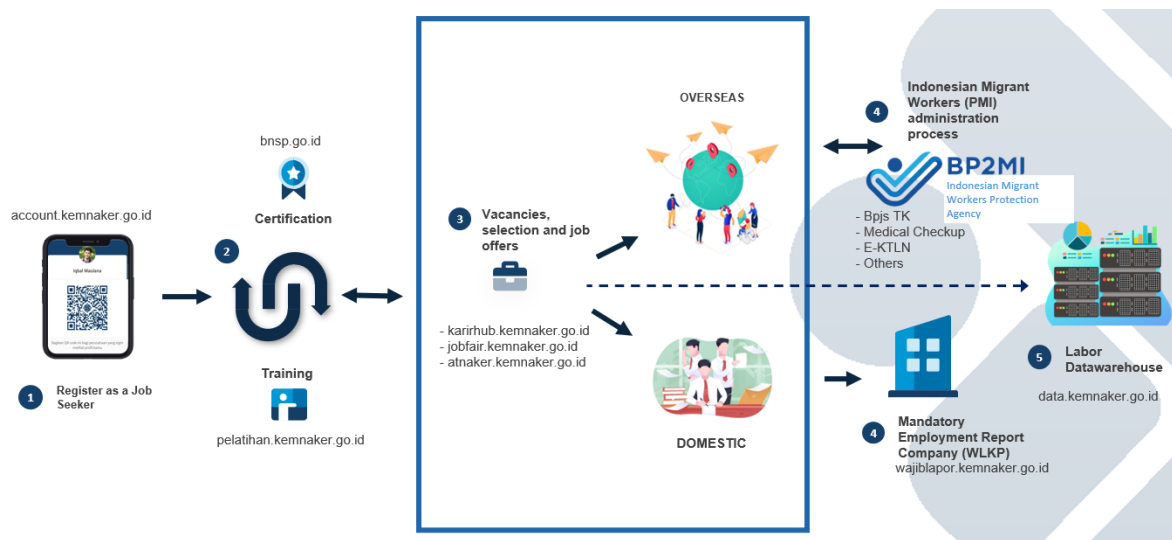
**Figure 2: Workforce Placement Flow Through Karihub in the Sisnaker Employment Digital Ecosystem**

Work-net is a workforce information system platform the South Korean Employment Information Service (KEIS) manages. In 2018, registered users reached around 16 million (a labor force of around 30 million). In 2017 as many as 2.2 million jobs were placed through Work-net. Through Work-net, the South Korean government has succeeded in establishing partnerships with 172 public and private job portal organizations. The government selects and ensures the quality of the information received is displayed on the Work Net. Work-Net can provide suitable job recommendations based on job seeker profiles. Work-Net connects training and education platforms, job insurance, and migrant worker permit systems. KEIS optimizes researchers to conduct employment analysis, and the results are widely accessible. KEIS optimizes the information in the Work Net to help design, monitor, and evaluate public policy. KEIS provides employment data such as employment trends, labor supply, and demand. Indonesia's position has advanced slightly from the elementary to the intermediate level, but there is still much homework to do to pursue LMIS, as Korea has achieved.

**Table 1: Levels of Current Indonesian LMIS**

| LMIS ELEMENT | BASE | MEDIUM | ADVANCED |
|---|---|---|---|
| Data and Information | Provide basic information through statistical indicators using national survey data and administrative data. | Provide labor market intelligence using other data sources outside of surveys. | Provides multiple information subsystems and digital means to collect, generate and disseminate up-to-date (sometimes real-time) information using big data. |
| Service Function | Provide basic labor market information services with statistical data. | Provide basic services to several stakeholders, generally job seekers and companies. | Provide several services tailored to user needs. |
| Actors Involved | Engaging few actors in the public sector. | Engage more actors in the public sector, including the education system, job guidance and job-matching services, social security, statistical offices, and company registration. | Involve public and private sector actors as users and producers of data and services. |

Keterangan:
Gray = Already owned
Yellow = Still needs to be developed
Pink = Not owned yet

Source: World Bank and KWPF, "Toward a World-Class Labor Market Information System for Indonesia: An Assessment of the System Managed by the Indonesian Ministry of Manpower", 2018

**Source:** Anonymous, 2018

Developing a national labor market information system in Karirhub in Sisnaker requires cooperation and cannot be carried out only by the Ministry of Manpower. Developers of labor market information have tried cooperating with stakeholders such as ministry agencies, training institutions, local government agencies, and private job portals. In collaboration with various parties, it is hoped that Karirhub will become like a big house to provide the information needed by job seekers and companies such as employers, Apindo, Kadin, industrial estates, MSMEs, and academics. Developing labor market information is not the work of the Ministry of Manpower alone but involves a vast ecosystem. For example, making a pre-employment card platform takes extraordinary effort. How can you embrace the digital platform so that it can be entered into the digital system together? The Ministry of Manpower does not need to create it from scratch and does not need everything in the Ministry of Manpower but can embrace existing digital platforms to enter the labor market information ecosystem so that everything can play in an integrated manner with the existing system. The concept of developing LMIS in Indonesia towards an advanced level can be seen in Figure 4.
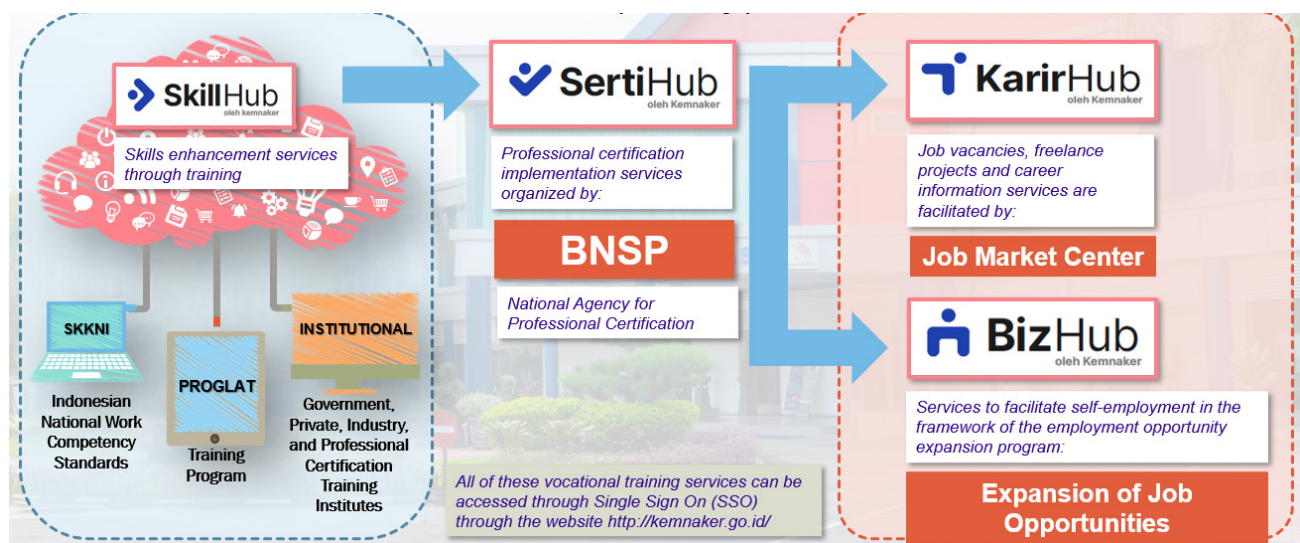


**Figure 3: Indonesia LMIS Ecosystem Integrated Development Concept**

Digital-based job market information systems can be synergized and collaborated with the platforms that have been developed. Many local governments have created their platforms. Coordinating with all the platforms that have been built is not effortless. The first step must be to identify the platforms that have been built and can be integrated with the national LMIS. In the future, all the platforms the regional government has developed can be interrelated with the national platform. What must be considered for full digital it is necessary to think about and encourage in terms of regulations so that it can embrace all relevant parties in the digital ecosystem. LMIS may be entirely digital, but we must remember services in areas that are face-to-face. Local governments must be ensured to inclusively provide services involving all parties and be integrated, for example, with social security providers and other institutions. Services can only be entirely carried out digitally by providing direct services.

a. *Problems Still Faced in LMIS Development in Indonesia*

Based on the results of primary data collection using in-depth interviews and FGD methods, many things could be improved in optimizing LMIS and developing LMIS in Indonesia to become world-class. The LMIS, which the central government has developed, in this case, the Ministry of Manpower, has a complete function to connect job seekers and employers. The main obstacle in optimizing the use of LMIS is that the system still needs to be fully understood by local governments at the provincial or district/city level and the wider community. Provincial, Regency/City Manpower Service apparatuses, in general, have never received socialization about the LMIS contained in the Sisnaker employment digital ecosystem. They need to understand in detail what functions are in the LMIS. In general, they only know the facilities visible on

the dashboard. However, the central government has yet to massively socialize what can be utilized by job seekers and employers.

The limited understanding of the LMIS developed by the central government inhibits local governments from socializing and encouraging employers to use LMIS in submitting job vacancies and employee recruitment. If there are job seekers who come to the local manpower office, the service apparatus is only able to direct them to be able to input data online through Karirbub. However, they often need help because only a few provincial/district/city-level companies submit job vacancies through Karirhub. To increase company awareness in utilizing the LMIS that has been developed, solid and binding regulations are needed both at the central and provincial government levels and develop strategies to increase the attractiveness of the LMIS so that job seekers and employers realize that they will benefit from utilizing LMIS.

Sisnaker users who are direct end users, not users represented by operators, still need to be higher than the number of workers and companies in Indonesia. The workforce in Indonesia until February 2021 reached 139.81 million people, while based on statistical data on Sisnaker users, the growth of Sisnaker users per day is between 11,000 to 80,000 per day. Based on the average user growth in 2020, it is predicted that user growth in 2021 will only reach 6,643,000 people. Sisnaker user trends and monthly visitor statistics can be seen in Figure 4.
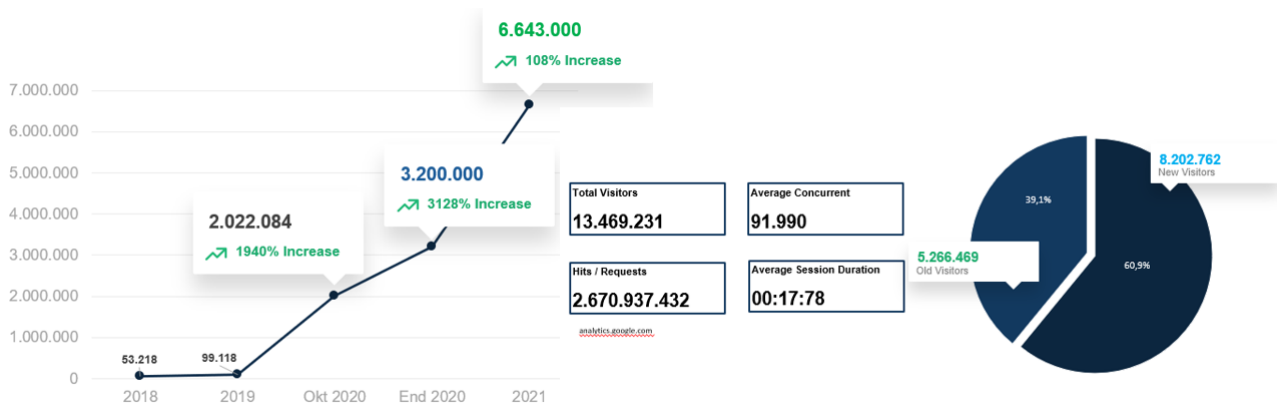


**Figure 4: Growth Trends Statistics and Visitors Per Month Sisnaker**

Another problem that can cause the use of LMIS in Indonesia still needs to be improved. Namely, the local government feels that the LMIS developed by the central government is inconsistent, often changing systems starting from "Online Job Market Information," "Let's Work," "Online Job Exchange," last changed to "Karirhub" which is part of Sisnaker. For local governments that already have their own LMIS and follow instructions to integrate their data into the LMIS developed by the central government, it is an unpleasant experience. The migration process did not run smoothly, so when the central LMIS underwent a system change, the data owned by the local government could not be accessed, so the manpower office lost data. This change often results in the loss of data owned by the local Manpower Office because there is no backup process for the data in the application system developed by the central government. Due to the many problems faced by local manpower officials in using the LMIS developed by the central government, finally, local governments have developed their own LMIS to meet the need to provide information that can connect job seekers and employers. The central government must develop strategies and plans to integrate the LMIS contained in the Sisnaker and the LMIS that the local manpower office has developed.

An example of a local government that has developed an LMIS on a regional scale is the Banten Provincial Manpower Office. The Banten Province Manpower Office once built a job market application called Siloker. This application is only local to the Province area and has a simple function. Namely, companies can submit job vacancies in Siloker, and job seekers can access vacancies through Siloker. Job

seekers in Banten Province are more familiar with the Siloker application than Karirhub. The obstacle faced in using Siloker by the company is that there are still mafias who act as liaisons to offer job vacancies to job seekers, especially in industrial areas. It can be one of the reasons for companies not to open job vacancies through applications that the central government and local governments have provided.

The Lampung Provincial Manpower Office has also developed an LMIS named SiGajah-Lampung. SiGajah-Lampung is a web-based information technology platform that provides employment information services, including job vacancies, job training, job apprenticeships, and consultation on employment issues in Lampung Province. SiGajah-Lampung will be part of the official information system universe belonging to the Lampung Provincial Government in the official domain of Lampungprov.go.id. The Lampung Provincial Government has utilized information technology in managing labor market information. The service and labor market management process is carried out using the Regional Employment Information System (SIGAJAH).

West Java Province, to provide employment services related to Indonesian Migrant Workers (PMI), has developed the "Jabar Service Center" application program. This application aims to reach remote areas by providing information about PMI and monitoring PMI before, during, and after work. It is necessary because there are many risks with not monitoring the PMI. This program has been coordinated with the regional apparatus and is integrated with the information systems of the Disdukcapil, Immigration, Police, and BP2MI. Several employment services from the West Java Provincial Manpower Service are already online, such as the Online Job Fair. Initially, job fairs were held in several locations. After the condition of the Covid-19 pandemic it was forcing the organizers to innovate in making online services. However, the problem in terms of the ability of job seekers to understand information technology is different. Job seekers still need to gain knowledge and skills in using information technology. Another obstacle faced is the limited facilities and infrastructure that can be used to access LMIS.

b.  *LMIS Development Strategy in Indonesia Towards World Class*

To overcome employment problems, significantly reduce the unemployment rate, and create links and matches from the supply and demand side, Indonesia must have an LMIS that meets the characteristics of Relevance, Reliability, Efficient, Clients at the Center, and Comprehensive following world-class LMIS standards. A relevant LMIS means being able to collect, collect and coordinate large amounts of quantitative and qualitative data and turn it into relevant information for a variety of users. LMIS has high reliability if it has a robust data management system and information technology and security system that ensures the validity, relevance, and continuous accessibility of data. An LMIS can be efficient if it can apply technology to connect users to the system, improve the services provided, and monitor results for service and policy improvements. LMIS can function as Clients at the Center if it can respond to users, is easy to access and navigate, and is user-friendly. Finally, the LMIS must be comprehensive. It is part of a broader development policy, serves multiple stakeholders, and meets diverse needs.

To realize the development of LMIS towards a world-class, support from various sides is needed, namely the use of technology, collaborative partnerships, and institutional arrangements. The system must use a strong and sophisticated technology base (including advanced algorithms, artificial intelligence, and big-data techniques) to share data efficiently and analyze and disseminate available information. LMIS development should encourage active partnerships with public and private (employees, companies, policymakers, researchers, and practitioners), who will use and generate the information in the system. In developing LMIS towards world-class, it must be accompanied by building robust institutional arrangements involving key stakeholders such as policymakers and the education system.

Various strategies must be prepared by the central government, specifically the Ministry of Manpower as a leader in the development of LMIS in Indonesia. The first step that can be taken is to strengthen regulations. Strengthening regulations is the legal basis to encourage collecting job vacancy data from companies. The central and regional governments must prepare regulations that are not optional but mandatory for companies that have and require the recruitment of new automated employees, all of which

must be included in the LMIS, no longer optional. How to push regulations so there is no need for sanctions, but even if there are no sanctions, the company will not ignore these regulations. The point is that if the company can feel the benefits of LMIS, it will be happy to take advantage of LMIS. What needs to be addressed is how to provide benefits for the company.

LMIS must use the latest technology to collect, select, and disseminate to help analyze data effectively and efficiently. Enter the LMIS ecosystem, in terms of infrastructure, technologically will be relatively easy. However, the challenge is collaborating with various digital platforms, not all developed by the Ministry of Manpower. It is no longer like that, but how to synergize and collaborate with all digital platforms so that LMIS will be an excellent portal and the public will benefit from this system.

The next effort that needs the Indonesian government's attention to develop LMIS is to increase the quantity and quality of human resources who operate the system to analyze data on labor conditions and predict employment demand. The government needs to pay attention to the development of LMIS so that it can be accessed by all people, even in remote areas. The application developed must be easily understood by urban people who are already accustomed to using digital technology and access to job seekers who have yet to be touched by digital technology. Although, in general, the Indonesian people in rural areas are accustomed to using gadgets in the form of cell phones, they only understand the use of social media and communication via WhatsApp. It is necessary to develop human resources up to the village level to use LMIS.

In developing the LMIS, the Ministry of Manpower must be able to continue to establish partnerships with existing job portals, education and job training platforms, and related Ministries/Agencies that organize or provide employment programs and data. Regarding human resources for the development of the Ministry of Manpower's LMIS, there is no need to worry because it can hire from a digital platform for the management, maintenance, and data upgrade processes based on the occupation list. An extraordinary ecosystem can be built if partnerships with related stakeholders can be carried out. It is necessary to collaborate with many educational and training institutions whose authority is not only in the Ministry of Manpower but other Ministries. Partnerships and collaborations must be created to synergize in developing a genuinely confidential and significant LMIS.

The last effort that needs to be made by the central government is to synergize with the Regional Government in the development of LMIS. The central and regional governments have shared responsibilities in managing the workforce information system so that complete and comprehensive data are formed at the Regency/City and Provincial levels. Socialization to state civil servants in provinces, districts/cities is vital because so far. However, only one or two people already know about the Job Market Information in Sisnaker. They have yet to have time to disseminate information to others. In addition to the need for socialization, it is also necessary to appoint special operators who work on an ongoing basis and be given guidance in using LIMI in Sisnaker. The speed of rotation and mutation of employees in the regions often interferes with the continuity of regeneration in reducing information, so it will not be accessible if the information is needed from the apparatus that has been transferred. The development of LMIS must also pay attention to the aspirations and needs of the community in various regions in Indonesia, which can be conveyed through the manpower office at the Provincial/City/District level.

## CONCLUSION

LMIS owned by Indonesia is still basic to an intermediate-level category based on international LMIS standards. To reach an advanced level like the LMIS, which the South Korean government owns, the Indonesian government still needs to do a lot, especially the Ministry of Manpower as a Leader in the development and development of LMIS. Strategies that need to be developed immediately include strengthening regulations so that companies can be encouraged to enter job vacancies and recruit workers through LMIS, providing adequate infrastructure so that the wider community can access LMIS at the rural level, improving the quality and quantity of human resources who can operate LMIS and can provide guidance/training to the community in using LMIS, establish collaborative partnerships with relevant stakeholders from the government and private sectors. The

central government must always strive to coordinate with local governments in developing and using LMIS. Until now, many local governments do not understand what facilities are contained in the LMIS developed by the Ministry of Manpower, so they cannot carry out widespread socialization to the community regarding the use of LMIS. Local governments have developed their own LMIS because they feel that the central government needs to meet their needs in providing labor market information to the public. The central government must develop a strategy to integrate LMIS developed by local governments into LMIS on a national scale.

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