

Digitalization: The Economic and Policy Potential of the Crucial Labor Market

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DOI: <https://doi.org/10.52403/ijrr.20230451>

ABSTRACT

The purpose of this study is to determine the analysis of the technological adaptability of countries in the world and its comparison to readiness in Indonesia. This is because the ability to adapt technology has a close relationship to the economy in a country, both in terms of economic contribution and the labor market sector. This study hypothesizes that Indonesia's level of technological adaptation in particular has increased with the rate of large labor market changes. The parameter data used are Gross Market Value (GMV), Global Connectivity Index (GCI), and GDP. As well as data on industry development in Indonesia. This research was conducted with a descriptive analysis method that uses content analysis steps to interpret the results of existing statistical exposure. The results of the research analysis show that a very significant government policy today is an investment in technology and communication infrastructure. Then to boost the economy, financing is the most needed factor today. Readiness to meet the demographic bonus can be done by developing the digital skills of the workforce in all sectors. Therefore, infrastructure, financing, and scientific integration of technology are the most crucial policies today.

Keywords: GMV, GCI, GDP, MSME, Digital Talent

INTRODUCTION

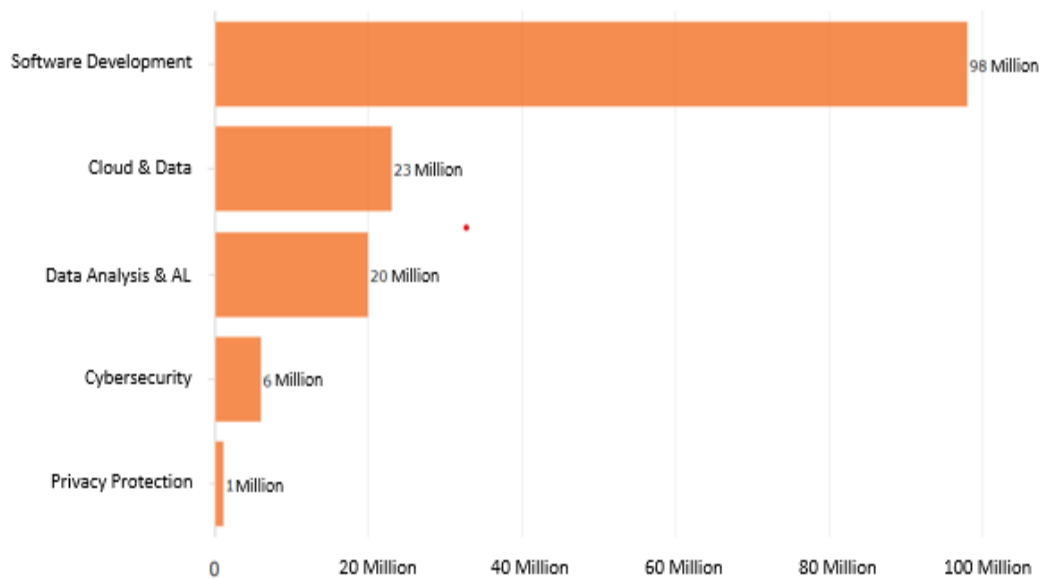
The discovery of various efficient technologies has become a benchmark in development in all sectors. Artificial Intelligence (AI) and the Internet of Things

(IoT) are growing rapidly. The Covid-19 pandemic has limited people's space for movement due to isolation to break the chain of spread. This is also felt by the people of Indonesia. The use of technology has changed the media of community interaction and created a new WFH (Work from Home) work culture on all fronts. Thus, the pandemic has accelerated the adaptation of Indonesian society to the use of technology.

The efficiency of companies in terms of massive technology utilization can be a threat to some jobs that have been replaced by AI or other forms of technology. However, as mentioned by Dhyanasari (2020), lost positions are replaced by job opportunities on the potential of digital talents in the labor market. This is because technology has increased industrial productivity which can drive a greater amount of demand. A faster production turnover will certainly require more labor.

The jobs needed are certainly inseparable from expertise in the field of big data where software developers occupy the top position touching 98 million. In Indonesia, the results of Widodo's research (2019) show that platforms like project.co.id have become a forum for freelancers in Indonesia to communicate with employers without geographical or distance restrictions. Thus, digital talent opportunities are borderless in terms of geography and competition. Based on data from the databox (2022), here are

some digital talent jobs needed in the next few years:



Sources: Databoks (2022)
Figure 1. Job Potential in the Digital World

Economic development is in line with the integration of technology in all sectors. Digital literacy is the first step in increasing awareness of the importance of applying technology in the economy. Das et.al.'s research, (2018) shows that around 26 million jobs will be open in Indonesia, especially in the Micro, Small, and Medium Enterprises (MSMEs) sector.



Source: McKinsey (2018)
Figure 2. E-commerce Improvement Data in 2022

Awareness of the importance of expertise in technology comes if people understand economic developments both globally, nationally, and locally. The ability to understand this phenomenon must certainly be supported by government policies that facilitate the community learning process.

Therefore, analysis related to the intensity of digital economic transactions as well as various policy formulations is expected to be able to provide input for policymakers.

LITERATURE REVIEW

Economic Growth Theory: Human Resources

Economic theory has evolved to increasingly complex in evaluating variables that are significant in driving a country's economic growth. Smith's (1776) classical economic theory states that both the value of capital and labor have a significant impact on economic growth. An economist who also pays great attention to aspects of human resources in the economy of a country is Theodore Schultz.

Schultz, TW (1961) in his writing stated that the assessment of human resources can be seen on both quantitative and qualitative sides. In terms of quantitative, the amount of labor that exists will have an impact on the level of production produced. Knowledge and skills, it is a qualitative aspects that can be measured. In this case, education and expertise in using technology are one of the factors that can explain the surge in income in the economy, The ability to produce more effectively and efficiently

leads to better levels of worker productivity. Therefore, human resources are an economic factor that must be maximized.

Digitalization and the Labor Market

Digitalization is the result of the development of the industrial revolution that continues to grow in the massive use of technology. Research conducted by Piroasca et al. (2021) shows the importance of digital skills which have direct implications for wages and income. Therefore, it is important to pay attention to the accessibility aspect of the community to internet use.

MATERIALS & METHODS

This research was conducted by the quantitative descriptive method. This study contains various data and literature studies collected for further study to obtain interpretations and conclusions. This study uses Indonesian state parameter data for the period 2017-2021. The parameters observed in this study are Global Connectivity Index (GCI), Gross Market Value (GMV), and Gross Domestic Product. The population and sample in this study are data on technological development and economic value of countries globally and Indonesia in particular. The analysis method used is to

use the content analysis method (content analysis).

RESULT

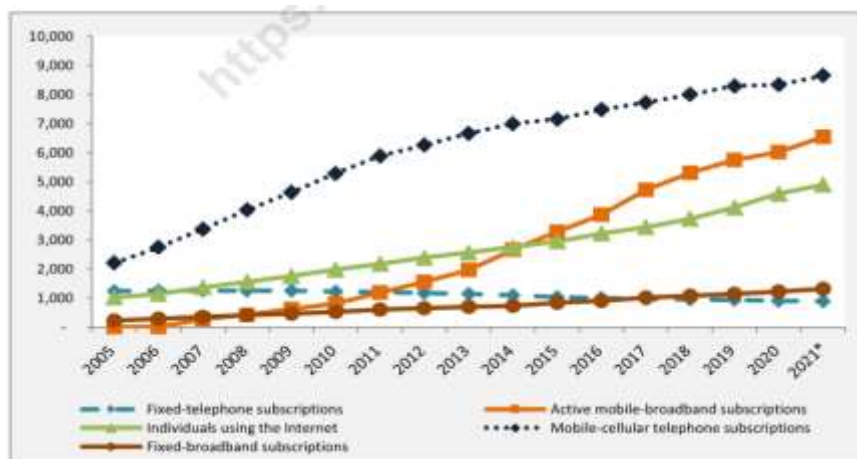
Digitalization has now become a topic of discussion not only carried out by the government but also by private institutions. This is because research related to technological efficiency will be able to provide a maximum economic contribution.

The Development of Technological Adaptation

In the International Telecommunication Union (ITU) report in 2022. The level of technological development is based on 5 categories:

1. Fixed telephone subscriptions
2. Individuals using the internet
3. Fixed broadband subscriptions
4. Active mobile – broadband subscriptions
5. Mobile – cellular telephone subscriptions

The overall category indicates how far people's mobility in internet use is from both regular phones and mobile phones. Active mobile broadband subscription rates showed the most significant spike in 2005 – 2021.



Source: International Telecommunication Union (ITU), 2022
Figure 3. Global ICT Development Rate 2005 – 2021

The same thing also happens in Indonesia, there is an increase in mobile broadband users per 100 population. The level of

internet users also increased to reach 62.10% in 2021.

Huawei (2022) calculated the Global Connectivity Index (GCI) which evaluates 79 countries in digital infrastructure development by looking at 4 "enabler categories" (broadband, cloud, IoT, and Artificial Intelligent (AI)) and 4 economic

pillars (supply, demand, experience, and potential). The achievement value of indicators is divided into 3 (three) groups, namely Starters, Adopters, and Frontrunners.

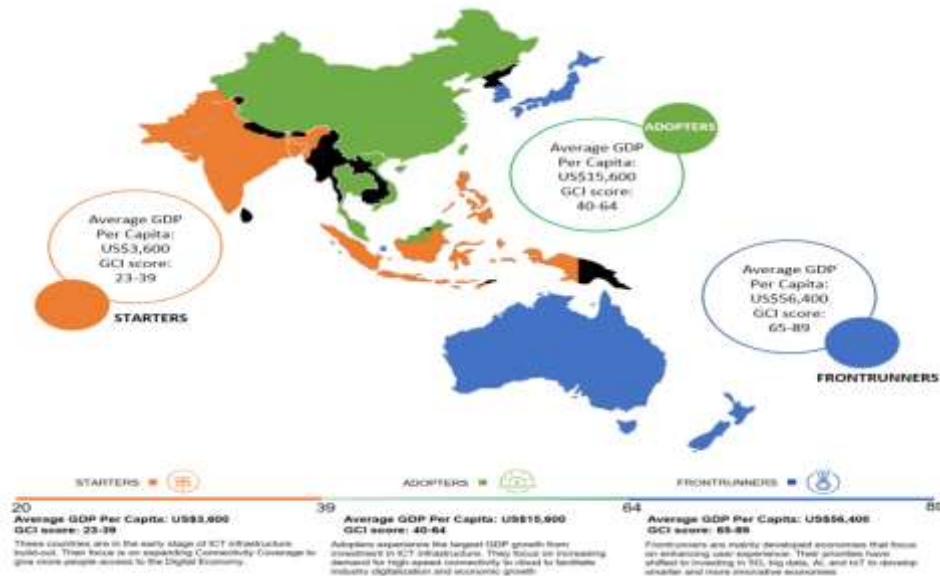


Figure 4. GCI Indicator Cluster Classification (Huawei, 2022)

The group of "starters" countries are countries that are still in the early stages of developing communication and information technology infrastructure throughout the region. Countries classified as starters include India, the Philippines, Bangladesh, and Pakistan.

Adopters are the group of countries with the largest contribution to GDP coming from the development of communication and information technology infrastructure. The affordability of internet use is already at a qualified stage with adequate infrastructure. Countries such as Thailand, Malaysia, and China.

Frontrunners are dominated by developing countries that have transformed the use of technology more efficiently. The direction of technological development will focus on improving user experience towards the accessibility of more sophisticated technology.

Economic Potential Gross Market Value

Based on e-Conomy SEA (2022) data, overall, from 2019 to 2022, Indonesia's digital economic contribution reached a Compounded Annual Growth Rate (CAGR) of more than 23%. CAGR is a calculation made by looking at the trend of increasing average growth over several periods. Thus, the average growth multiple will be even greater.

There are 4 (four) online-based sectors that are currently growing rapidly in Indonesia, namely e-commerce, transportation and food, travel services, and online media. Although the surge in the CAGR value of the e-commerce sector is not greater than other sectors, in nominal terms, the e-commerce sector is the largest contributor to GMV value in Indonesia. This shows that in a very short time e-commerce can make a maximum contribution to the economy. If in quantity e-commerce has provided excellent performance, the output provided will be

maximized with policies that support industry integration of e-commerce.

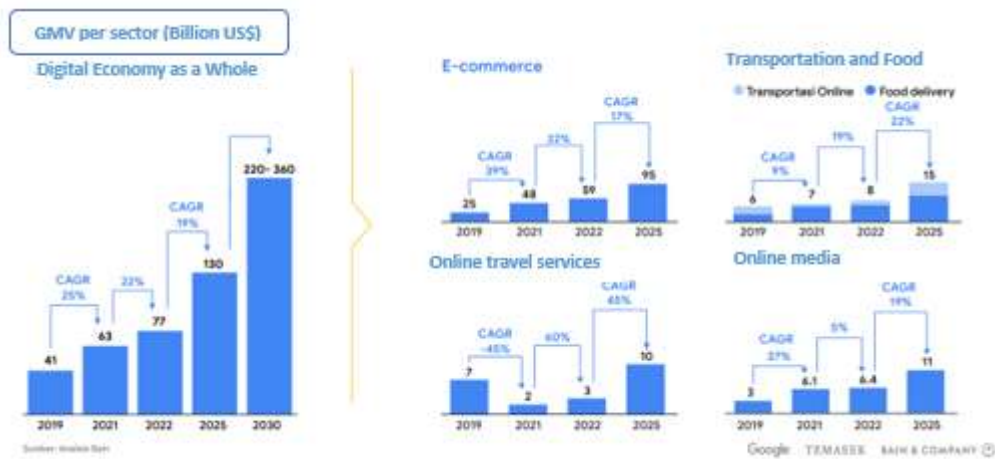


Figure 5. GMV Value Per Indonesian Sector. (e – Conomy SEA, 2022)

Development of Micro, Small, and Medium Enterprises

Based on MIKTI data (2021), there is an increase in the number of start-ups. 40% of startups have been established for 5 – 10 years. In the business category, there have been more specific and digital-based

variations. Some of them are based on social media marketing such as content creators even with the highest value of 16.48% among other sectors. Accessibility that continues to be promoted by the government has provided access to anyone who wants to take part in cyberspace.

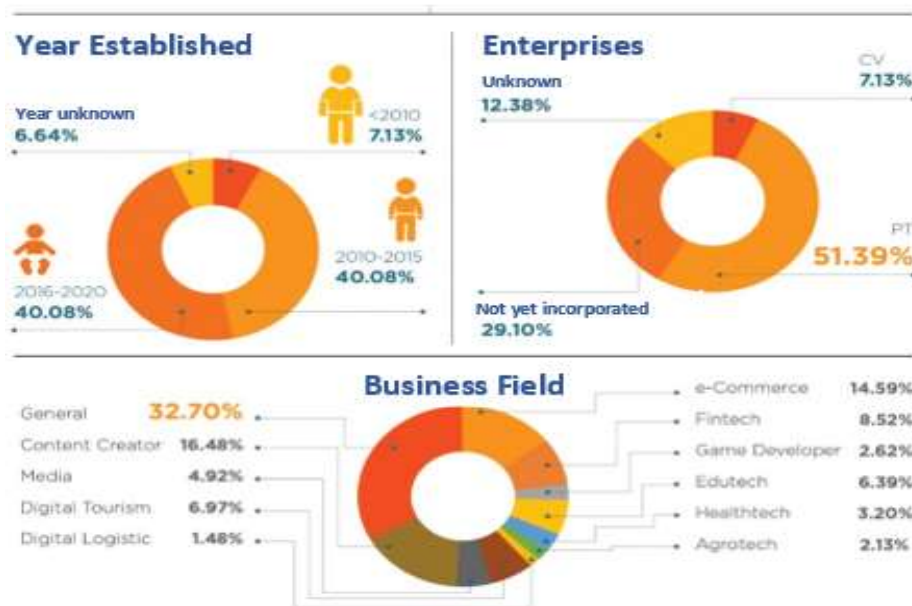


Figure 6. Startup Data in Indonesia, MIKTI (2021).

Another thing that is also of concern is the integration of technology into aspects of tourism, logistics, education, banking, health, and agriculture. Current business resilience for the entire sector must be supported by the use of technology which refers to technology skills for the workforce across existing sectors.

Digital Talent and the Labor Market

Indonesia, which has a large population with exponential development potential, certainly needs to consider programs that support workforce readiness. Based on Huawei data (2022), the amount of demand and supply for digital talent in Indonesia as

a country in the "starters" category still can increase.



Figure 7. Demand and Supply Matrix for Digital Talent, Huawei (2022)

Further analyzing the role of the industry, the steps taken by Huawei as one of the leading IT companies, are by conducting various competitions and infrastructure assistance. First, the competition held is useful for capturing young talents who have the potential to continue working. Second,

certification of various expertise in the IT field. This certification will be a portfolio for users while getting more applicable learning. Third, infrastructure development in the form of laboratories or devices/tools that support the progress of archiving documents digitally.

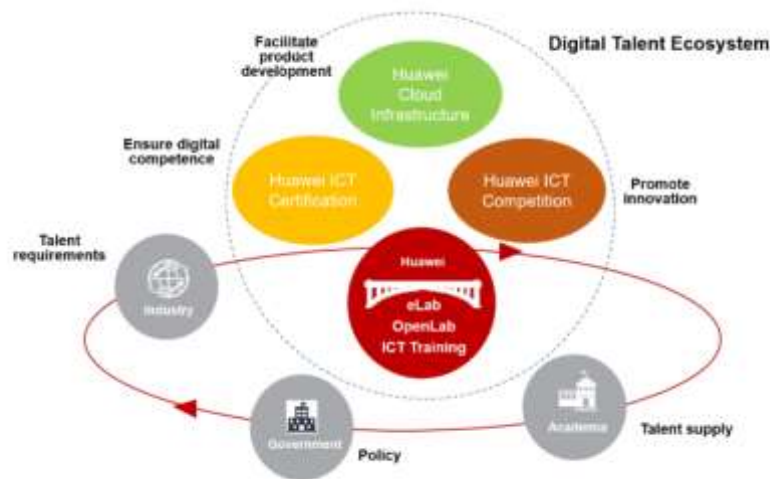


Figure 8. Digital Talent Ecosystem Scheme (Huawei, 2022)

DISCUSSION

Alignment of Connectivity and Acceleration of Technology Adaptation

Huawei (2022) summarizes 4 (four) pillars in digitalization development, namely supply, demand, experience, and potential. The supply aspect is more directed towards investment in 4 technology enablers while

demand refers to industry needs for the installation of technology enablers. The experience category refers to the use of enablers within the industry. The last category, potential, is dominated by frontrunners countries where these countries are already in a position to enrich innovation in the use of technology.

Digitalization and Economic Growth

The level of economic digitalization calculated by variable internet use by ASEAN countries shows that economic digital variables have a partially significant positive influence on GDP growth (Wibowo, 2018). In addition, Nizar & Sholeh (2021), digitalization also has an impact on a better level of business resilience. Industries based on the Communication and Information sector, fintech industry (financing technology industry), and e-commerce can make the best contribution and support the Indonesian economy during Covid-19.

Digital economic transactions show very positive figures in their contribution to GDP development. As a country with a large

population, Indonesia has a large number of internet accessors as well. So the opportunity for cumulative economic development in this digital platform is still very promising.

Digital Economy and Digital Talent Development Policy

Based on the discussion above, 2 policy programs have been summarized that will be closely related to economic and labor development in Indonesia:

Economic Development

Micro-scale enterprises have decreased in proportion until 2019. However, the scale of micro-enterprises in Indonesia still dominates by 48.10%.

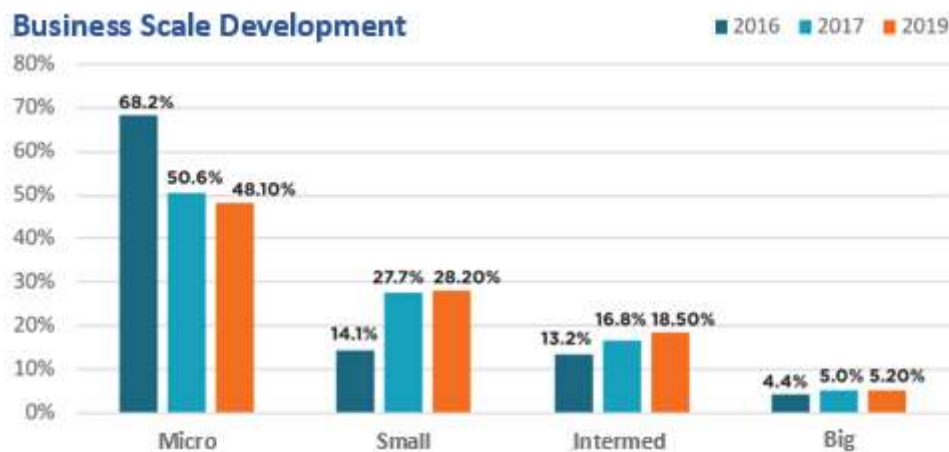


Figure 9. Business Scale Development in Indonesia 2016 – 2019, MIKTI (2021).

Therefore, access to funding and development of technology-savvy entrepreneurial capabilities are government priority programs to be able to provide sufficient assistance for business actors.

Workforce Development

Technology skills development is not only focused on the information and technology industry sector. Based on AlphaBeta data (2023), workers in the non-technology sector who have digital skills have a higher contribution to GDP in Indonesia in 2019. As the industry adapts to technology, so does the expected demand for workers' digital skills.

CONCLUSION

The results of the analysis show that digitalization still contributes greatly to the Indonesian economy. Access to capital, human resources, and entrepreneurship are the main factors preventing Indonesia's economic growth difficult. Countries with large populations benefit from the number of transactions carried out by their residents. The e-commerce sector, which is the biggest pillar of the economy, is key in the industrial and trade development program that can be accessed in all directions. Thus, adequate infrastructure is the right step for the government that has been implemented today.

SUGGESTION

The government must accelerate the improvement of the digital skills of the workforce in Indonesia before the biggest demographic bonus will occur. Areas in Indonesia that still do not have internet access must be a major concern because they are potential customers/technopreneurs in the future.

Declaration by Authors

Acknowledgement: None

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

REFERENCES

1. Ahdiat, A. (2022, Maret 11). Ini talenta digital yang paling dibutuhkan di masa depan. Diakses pada 20 September 2022 dari : <https://databoks.katadata.co.id/datapublish/2022/03/11/ini-talenta-digital-yang-paling-dibutuhkan-di-pasar-kerja-global>.
2. AlphaBeta (2023). Keterampilan Untuk Masa Depan: Memperkuat Ekonomi Indonesia dengan Meningkatkan Keterampilan Digital.
3. Baihaqi, F. (2022, Juni 30). Inilah Daftar Startup Agritech Indonesia yang menjadi Solusi Petani. Diakses pada 17 Maret 2023 dari : <https://dailysocial.id/post/startup-agritech-indonesia>.
4. BPS (2021). *Statistik Telekomunikasi Indonesia*. Badan Pusat Statistik : Jakarta
5. Bestari, NP (2022, Mei 30). Pendapatan GOTO lompat 53% yoy menjadi Rp 5.2T di kuartal I.[Halaman Web]. Diakses dari <https://www.cnbcindonesia.com/market/20220530171729-17-342995/pendapatan-goto-lompat-53-yoy-menjadi-rp-52-t-di-kuartal-i?page=all>.
6. Das, K, et.al. 2018. *The Digital Archipelago: How Online Commerce is Driving Indonesia's Economic Development*.McKinsey & Company.
7. e – Conomy SEA (2022). Arungi Ombak Menuju Lautan Peluang. Google, TEMASEK, Bain Company
8. Huawei (2015). Global Connectivity Index Report 2015. Huawei.
9. Huawei (2022). Asia Pacific Digital Talent Insights.
10. Kemnaker. (2021, Desember). Proyeksi Kebutuhan Tenaga Kerja Di Perusahaan Berdasarkan Kompetensi Pada Sektor Teknologi Informatika & Komunikasi Pada Tahun 2022 – 2025. Diakses pada 17 Maret 2021 dari : https://satudata.kemnaker.go.id/satudata-public/2022/04/files/publikasi/1650296308464_2021%2520-%2520Buku%2520Proyeksi%2520Kebutuhan%2520Tenaga%2520Kerja%2520Sektor%2520TI.pdf.
11. Nizar, NI, Sholeh, AN.2021. Peran Ekonomi Digital terhadap Ketahanan dan Pertumbuhan Ekonomi Selama Pandemi Covid – 19.
12. Schultz, TW. 1961. Investment in Human Capital. *American Economic Review*. Vol 51(1): 1 – 17.
13. Smith, A. 1776. *An Inquiry into The Nature and Causes of The Wealth of Nation*. W. Strahan & T. Cadell: London.
14. Wibowo, EW. 2018. Analisis Ekonomi Digital dan Keterbukaan terhadap Pertumbuhan GDP Negara ASEAN. *Jurnal Lentera Bisnis*. Vol 7(2): pp. 66 – 80).

How to cite this article: Zata Hasyiyati, Jodi Hendrawan, Fauzul Azman. Digitalization: the economic and policy potential of the crucial labor market. *International Journal of Research and Review*. 2023; 10(4): 425-432. DOI: <https://doi.org/10.52403/ijrr.20230451>
