International Journal of Business and Administrative Studies
volume 6 issue 6 pp. 312-322 doi: https://dx.doi.org/10.20469/ijbas.6.10003-6

Utilization of Indonesia's Digital Economy to Invest in Human Capital and Provide Socio-Economic Support to Stimulate Economic Growth

U. Y. Abdur Rahman*
University of Maryland Global College, Adelphi, MD

Abstract: An increase in current investment in the digital economy of Indonesia is needed to leverage the potential of human capital more effectively for the country to experience healthier economic growth. An analysis of Indonesia's socio-economic situation in 2020 is conducted by analyzing trends in the population's economic abilities, digital data connectivity, and education levels, then comparing the utilization of these resources to population case studies, social and economic theories, and documented research of government and private organizations. Based on previous economic studies, human capital investment parameters were chosen that revealed that investing in the human capital of a country's population promotes economic growth through economic empowerment, education, and technological advancement. This paper samples statistics from 2017 up to the first quarter of 2020 of the digital economy and labour market. In addition, this paper provides some review of the socio-economic impact of the COVID-19 pandemic related to investing in human capital to stimulate economic growth. Most of the statistics used in this study are sourced from federal agencies, and some are sourced from private organizations. Comparative analysis of the statistics reveals that services from the digital economy provide virtual presence; social connectivity; and data availability, access, and utilization. Also, the country's human capital financing endeavours through Peer to Peer (P2P) lending and investing in human capital education is important to stimulate economic growth. Furthermore, productivity gains in business operations can increase across Indonesia's industries if workers' skillset in the labour market can be advanced through accessible training, such as online learning and certification platforms. The current study contributes to the literature by shedding light on the need for human capital investment.

Keywords: *Human capital, digital economy, economic development, virtual, Indonesia*

Received: 18 August 2020; ***Accepted:*** 02 November 2020; ***Published:*** 22 December 2020

INTRODUCTION

Findings from a paper published in the 2019 Eurasia Economic Review Journal revealed that human capital has a positive impact on economic growth (Affandi, Anugrah, & Bary, 2019) and that cognitive abilities constitute the most significant element that boosts economic growth (Affandi et al., 2019) via a case study of Indonesia. These results were assessed in part by mathematical modeling and examining the effects of human capital output. This paper agrees with these findings but focuses on the statistical review of utilizing Indonesian's digital economy to invest in human capital and provide socio-economic support to the population. Virtual presence; social connectivity; and data availability, access, and utilization; materialistically and financially empowers users to make beneficial transactions daily. Due to the size of its economy, population, and the number of internet and mobile phone users (Batunanggar, 2019) Indonesia can

*Correspondence concerning this article should be addressed to U. Y. Abdur Rahman, University of Maryland Global College, Adelphi, MD. E-mail: uwada@student.umgc.edu

leverage the growing digital economy sector to stimulate economic growth through human capital investment. However, it should be noted that according to the Kementerian Komunikasi dan Informatika (Indonesian Communications and Information Agency), there needs to be a reduction in the annual digital talent skills gap of approximately "600,000" (Akhlas, 2019; Chen, Meyer-Doyle, & Shi, 2020) to operate the growing digital economy efficiently.

Human capital utility in an economy is typically considered amongst the most valuable driving factors of economic health. Although this is true, an increase in the value of human capital in a country does not always correlate with economic development even when a country has a high Gross Domestic Product (GDP) per capita (World Bank, 2020). An economic crisis, such as observed by the effects of restrictions from the COVID-19 pandemic, can stagnate or reverse the positive effects of human capital development. Over the pass few decades, researchers have proposed drivers for human capital development. One of the most common drivers included in human capital theory is educational levels. However, more emphasis has been placed in the past decade on drivers such as data connectivity. This is because of the integration of communication devices used in the daily lives of humans during the digital age. Dependence on technology to perform transactions in the daily lives of people have increased over time. Because of this, human capital has made, significant contributions to economic growth, particularly through the ability to use technology (Dinh Su & Phuc Nguyen, 2020; Mihalache et al., 2019; Zhou, Siriboonchitta, Yamaka, & Maneejuk, 2020). Therefore, it has become more important for individuals to be literate in the utilization of technologies for economies to take advantage of what human capital has to offer potentially.

Although technological literacy is an important trait for human capital to possess to be more productive in the modern economy, the establishment of the functionality of digital platforms accessed by human capital is also important to have in a healthy economy. Software applications, data connectivity, and cyber-security are all respective markets in an economy that function together to assist in producing a digital presence for a user. Completing virtual transactions has benefited users, but before the advent of COVID-19 the dependency on technology and their platforms increased due to consumer demand and cultural adaptation for technological innovations. However, due to government restrictions in response to the COVID-19 pandemic, the adaptation of new technologies is amplified (Islam & Saliola, 2020). During the COVID-19 pandemic, globally, human capital has shifted behaviors to operate on digital platforms more often. The advent of 5G Networking, increased logistical presence of e-commerce, and telework and virtual meetings have contributed to the expansion of telecommunication infrastructure and dependency on artificial intelligence to manage large data.

Development of human capital drivers such as financial ability, educational levels, and health are being influenced, by many, directly by the technological literacy of human capital. In a post pandemic environment, the dependency on this particular trait may diminish. However, meanwhile, individuals are now, on occasion, encouraged to utilize digital products and services to maintain a degree of normality in their lives with respect to pre COVID-19 conditions. This adaptation based on necessity has financially empowered some business who maintain an effective digital presence. Although, the digital markets of several economies have grown larger and faster, due to COVID-19 restrictions, other sectors of the economy have suffered loss of business. Many economies are now in recession or have forecasted the beginning of a recession.

Regarding Indonesia, domestic and international COVID-19 restrictions from foreign governments and organizations have impacted particularly the non-formal sector, hospitality, and entertainment industry to name some markets. The digital economy present in Indonesia was growing at a healthy rate before the advent of COVID-19. Despite the increased dependency on the digital economy, several businesses in the digital economy still suffered loss due to a decrease in spending ability of human capital. Regarding a general recommendation for economic development, The World Economic Human Capital Index Update published in 2020 mentions support to households will be essential not only to buffer income losses but also to sustain the demand side of schooling and health care (World Bank, 2020). Therefore, although the digital economy can provide socio-economic support by utilizing tools and businesses operating in Indonesias digital economy, it should be understood that there is a limitation of the effectiveness of the digital economy on positively impacting human capital drivers if excessive job loss continues.

Socio-economic support is important to stimulate economic growth in times of financial crisis. However, strategic decisions need to be made to prevent worsening the conditions of a financial crisis. Data availability within Indonesia needs to be increased to utilize digital services during the COVID-19 crisis and post COVID-19. Although there is vast number of mobile users in Indonesia, there is poor bandwidth for mobile users to utilize. The average mobile download speed is less than half of the global average (Natason, 2019). Coupled with the use of smart phones with low

storage capacity, many Indonesians are very selective of the apps they utilize regularly. These disadvantages decrease the potential of human capital in Indonesia to effectively engage digital products and services on the same level of their counterparts in developed economies. Through digital platforms, peer to peer lending, social interaction, telehealth, and ecommerce services can be rendered to users if they can afford to pay for such services. Continuing these types of transactions can stimulate or sustain a degree for economic growth amongst users if the countrys infrastructure can support the data utilization requirements for increased demand of services due to COVID-19 restrictions.

RESEARCH METHODOLOGY

Research Design consists of: (1) Review of Foundational Assumptions, (2) Data Sampling Processes, (3) Benchmarking of Quantitative and Qualitative Demographical Data, and (4) Conclusions and Recommendations Based on Benchmarking Analysis. Evidence of the utilization of the tools and effects of transactions in Indonesias digital economy through financial empowerment, educational investment, and socio-economic support are provided based on external research presented in this paper, that assumes what is considered to be desirable status of drivers for human capital influence on economic growth.

Foundational Assumptions

Foundational theory is presented to provide supporting evidence that Indonesia's digital economy can be utilized to stimulate economic growth and provide a degree of socio-economic support through investment in its human capital. Foundational theories are drawn from a case study of Indonesias economic growth by region, regarding the influence of human capital in each region. In addition to considering the cognitive ability as a driver of human capitals effect on economic growth, additional theories on drivers of human capital influence on economic development are assumed and presented from external researchers as additional resource sources throughout this paper.

Data Sampling Process

Data is sampled to reflect drivers of human capital influence on economic growth: level of education with regards to formal school and technical training, economic ability with regards to finance, cognitive abilities regarding literacy and critical thinking, and ability of social transformation through communicating. Data is sampled from case studies, surveys, statistics, and research utilizing mathematical modeling by Indonesian government and private organizations, domestic and non-domestic to Indonesia. Sourced data consist of populations within Indonesia and external to Indonesia.

Qualitative and Quantitative Benchmarking

Benchmarking is the technique used to compare levels of human capital drivers in Indonesia to levels observed as productive by case studies and theoretical calculations provided by other researchers. In some cases, benchmarking is qualitative where narratives of theoretical conclusions from external researchers are used as a standard. In other cases, quantitative benchmarking is used to compare statistics of favorable conditions of drivers to the level of drivers present in Indonesia.

Conclusions and Recommendations Based on Benchmarking Analysis

After assessments of Indonesias drivers of human capital influence on economic development are established, recommendations are made to affect drivers in a manner to produce more favorable conditions for human capital to positively impact economic development. These recommendations are based on the utilization of the tools and businesses functioning in Indonesias digital economy. This approach was chosen to utilize the tools and businesses in a sector of the Indonesian economy that has shown positive steady growth for over a decade. In addition, this approach was also chosen because tools and businesses functioning in the digital economy sector are more resilient to the effects of COVID-19 restrictions than many other sectors of the Indonesian economy. Furthermore, the digital economy utilizes virtual presence and virtual transactions in like a manner that continues to assist developed economies to adapt to market disruptions and crisis.

PROVIDING FINANCIAL EMPOWERMENT WITH P2P LENDING

Fintech Market

The Fintech market has assisted in reducing some of the financing gap Small and Medium-Sized Enterprises (SMEs) face. The Indonesian Banking Statistics (SPI) of 2018 revealed that SMEs at the time, were facing a finance gap of 1.32 trillion IDR (Joseph, 2019). Foreseeing the potential benefits for business, in 2018 Banks BTPN, Mandiri, and BCA invested $89 million (Greenhouse, 2019) $22.4 million (Greenhouse, 2019), and $15 million (Greenhouse, 2019) respectively to develop fintech solutions. By year end of 2018 to March 2020 the total loan distributions from Fintech revealed by Otoritas Jasa Keuangan (OJK) are provided by Figure 1.

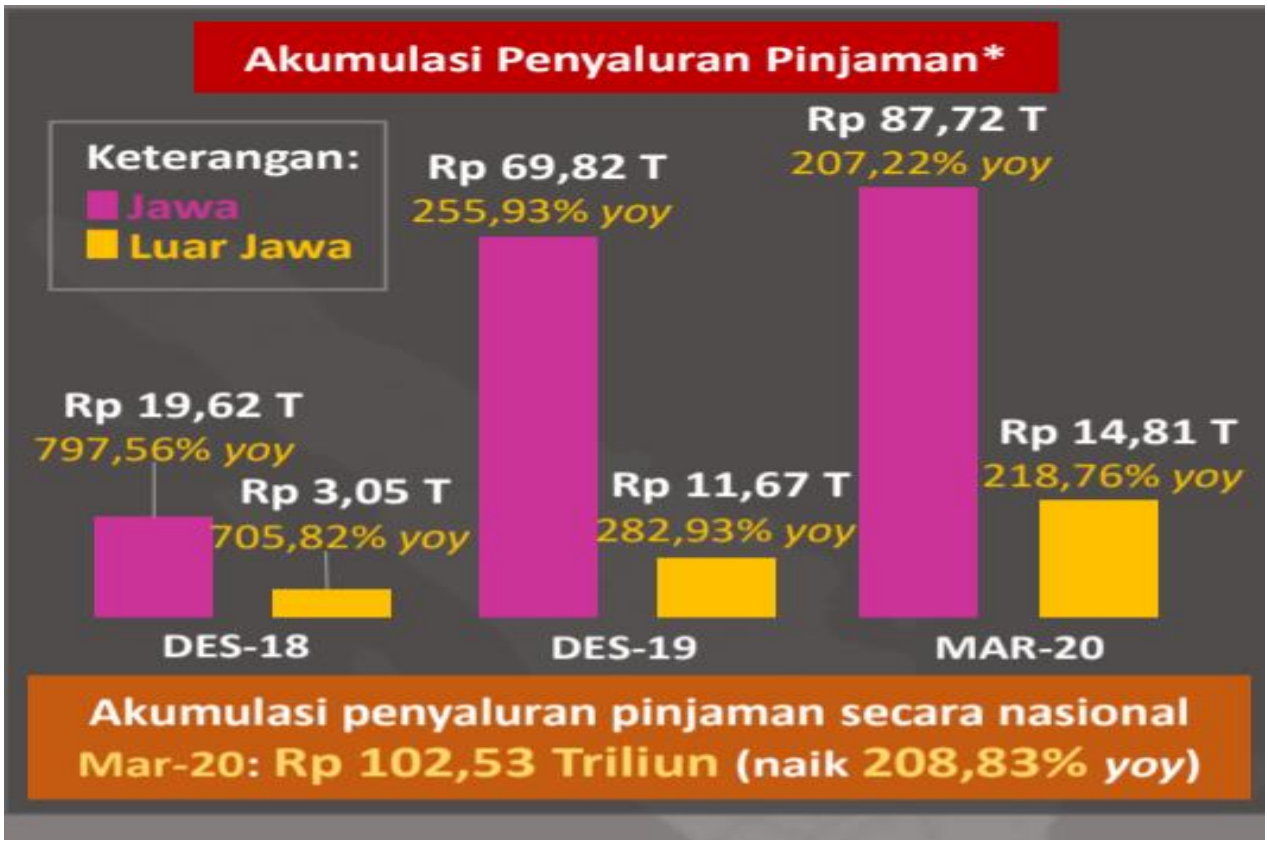

Figure 1 *Accumulation of Distributed Loans via Fintech (Otoritas Jasa Keuangan, 2020)*

P2P Lending

According to Otoritas Jasa Keuangan (2020) P2P lending, a segment of the Fintech Market, contributed 60 trillion rupiah to the Indonesian economy. P2P lending can be used to provide financial support to the non-banking segment of the population and business owners within the non-formal sector who may not own a bank account or lack credentials to acquire a traditional personal or business a loans from banking institutions. According to Badan Pusat Statistik (2020), as of February 2020 approximately 43.5% (Badan Pusat Statistik, 2020) of the work-force is employed in the formal sector while the majority of workforce, 56.5%(BPS 2020) held positions in the non-formal sector. Assuming users have at least a smart phone with data access, stimulus can be provided to the economy by supporting well maintained P2P platforms that provide data availability, virtual presence, and connectivity between borrowers and lenders. In addition, virtual presence is particularly important to those that are physically isolated from banks in their region. Therefore, economic growth can from the mentioned demographics if companies such as KoinWorks, Activaku, and Modalku, continue to contribute by processing small short-term loans that banks are not willing to provide (Joseph, 2019).

Despite the benefits of P2P lending, there are risks that should be addressed for P2P lending to effectively stimulate some economic growth from the demographics mentioned. One risk is the increase of non-preforming loans due to the lack of finance literacy (Batunanggar, 2019) or economic factors beyond the consumers control. Another risk is

the exploitation of the crowd funding population by criminal entities that use P2P lending platforms as lenders or companies. Widespread exploitation can lead to distrust and abandonment on some P2P platforms.

Implications of Utilizing P2P Lending to Financially Empower Human Capital

Without additional support from the federal government and the private sector, the Indonesian economy may not be able to effectively capitalize on financial inclusion (Claessens, Frost, Turner, & Zhu, 2018) of the marginalized population. Based on the 2020 BPS statistics previously mentioned, lack of finance availability specifically from the population of non-formal sector workers translates to lack of finance availability to a little over half of the workforce. The magnitude of loss economic potential should be taken seriously by federal and private stakeholders especially due to the size of the Indonesian population. Supporting responsible consumer spending to the bank-less community through P2P lending provides an opportunity for the population to afford products and services that may not have been available otherwise, and possible lessen the governments burden of social welfare to businesses and households to some degree. An example of a government supporting crowdfunding to lessen its social welfare burdens can be observed when considering in the second quarter of 2020, the United States Security Exchange Commission assisted small businesses by easing crowdfunding regulations during the pandemic in the second quarter of 2020. The result made equity crowdfunding even more viable for companies that need access to capital (Schubarth, 2020). Despite providing stimulus payments to some businesses the United States Federal Government understood the benefits of adjusting regulations so business can more readily receive money through peer lending as a means for the markets to support themselves.

Regarding Indonesia, as previously mentioned P2P lending can also assist in financing small businesses who may not be able to secure a bank loan. Including additional productive small businesses in the market is important as there is evidence from a 2019 study that aside per capita income and trade openness, banking and market finances reinforce each other's positive effect on economic performance (Botev, Égert, & Jawadi, 2019) within a countrys economy. This study conducted by CESifo, University of Paris, and University of Lille, France researchers observed this from estimates assessed through financial development affects data, during turbulent and calm times, of emerging and developed economies using Dynamic Ordinary Least Squares calculations. Providing banking and market finance support through the P2P lending environment with additional productive regulations and strategic investments in dependable and secure P2P platforms is not enough to financially empower enough human capital to stimulate economic growth. Capitalizing on the utilization of P2P lending for the marginalized population also requires increased digital onboarding for transactions of the marginalized. Expanding business reach and availability or products is one reason to support increased digital onboarding, but another reason is to overcome the challenges of social distancing during the COVID-19 Pandemic and for any other unforeseen socially restricting crisis. During the first quarter of 2020, the non-formal sector has a suffered in the COVID crisis due primarily to social distancing as many jobs require a physical presence for service and lack a digital presence to enable some degree of virtual service. Also, some small businesses lack the resources used to operate on a digital platform in the digital economy to continue business with such social restrictions. If the pandemic continues or worsens, P2P lending can provide funding options only to those who can access P2P lending services on its platforms.

EDUCATIONAL INVESTMENT

Utilizing and Investing in Digital Learning Platforms to Increase Technical Skills

Aside investing in the financial empowerment of the countrys human capital, investing in the education of human capital is also important for the economy to function more efficiently. According to Association of Southeast Asian Nations (ASEAN) 2019 Key Figures Report, as of 2017, Indonesia has a net primary education and net secondary education enrollment rate of 97.2% (Association of Southeast Asian Nations, 2019) and 78.7% (Association of Southeast Asian Nations, 2019) respectively. As of 2017, the literacy rate of the population is at least 95.5% (Association of Southeast Asian Nations, 2019). These figures reveal that school and basic reading is available to most of the population up to secondary school. The amount of education that secondary school provides may be enough to allow some workers in the non-formal occupations to perform their jobs well, but Indonesia needs a higher level of education and training to create and maintain competitive advantages in the global market.

Figure 2 *Average Re-skilling Needs of the Indonesian Workforce (World Economic Forum, 2018)*

Data from the World Economic Forum (2018) Future Jobs Report, displayed in Figure 2, suggests that as of 2018 the Indonesian workforce needing at least 3 months of additional skilled training stands at 27%. Productive gains in business operations can increase across Indonesias industries if the skillset of workers currently in the labor market can be advanced through accessible training, such as online learning and certification platforms. The utilization of Educational Technology (EdTech) can help parts of the labor force update, acquire, and or certify necessary skillsets for their job field. Other countries have already experienced such an advantage. On example of this is how the college bound populations of China have experienced a boost in skill talent since the 2000s in part due to the reforms assisted by integrating private-sector technology into the countrys educational system (Rahardja, 2019).

Local to Indonesia, are EdTech companies that can assist in training the current talent pool with virtual vocational courses and courses taught at Higher Educational Institutions (HEIs). For example, HarukaEDU provides solutions for business and universities to create Digital Learning Platforms (DLPs) and Learning Management Systems (LMSs) to train employees and students. Examples of HIEs that use DLPs and LMSs to educate their customers are Carnegie Mellon University (Tepper) (U.S. News & World Report, 2020) and Rochester Institute of Technology (Saunders) (U.S. News & World Report, 2020). One benefit an organization can have by utilizing EdTech is the opportunity to cater learning to their own organizational culture and respective technical skill demands. In addition, EdTech companies can partner with municipalities to supplement academic coursework and vocational training for various age brackets. Investing in the accessibility and quality of curricula to the common population, even at a young age, can effectively develop an individuals cognition ability (Affandi et al., 2019) to have a significant effect on economic growth (Affandi et al., 2019).

Reforming the Educational System to Boost Cognitive Skills

Although utilizing and investing in digital learning platforms can be promising, this prospect is limited because of two issues. One concern about this endeavor is the populations access to data services, mobiles devices, and computers. EdTech can reach remote areas of the country that are physically difficult to access in person, but only if local telecommunication and personal devices support available EdTech platforms. The second issue is the quality of the educational system present in the country. Although virtual learning has it benefits to the population, it lacks the social and cognitive (Cowan, Hurry, & Midouhas, 2017) benefits of being immersed physically in a highly functional learning environment. Investing efficiently in the education of the population requires the resolution of several issues. If they are not resolved, Indonesia may not capitalize on the populations potential to be a leading global market competitor in the manner the US and China are presently. One factor affecting the quality of education is the limited legal permissions granted by autonomous (Rosser, 2018) HEIs. HEIs in countrys with higher GDPs typically have more freedom to

operate as an entity than the HEIs in Indonesia. Aside this, the lack of qualified instructors (Rosser, 2018), merit systems, and disciplinary systems needs to be addressed in the public and private education system at all levels. Most of these issues stem from, underlying political and social relationships (Rosser, 2018) that staff and stakeholders of institutions have had historically. Such socio-political issues have interfered with the administration of both public and private schools. At varying educational levels, many teachers are recruited because they have contributed to the regional governments team during local elections.

Aside pondering the issues previously mentioned there is concerning data that should be reviewed. As seen from Figure 3, according to BPS from 2017 to 2020 the population of the workers that hold a university degrees is significantly lower, (by an order of ten each year), than the majority of the populations classified as having a lower level of education. Based on this data one can infer the educational skillset of the country, with respect to those of tertiary education, may not be in demand in the labor market as much of those classified with lower educational skillsets. Another opinion that some analyst argue, is that currently the Indonesian workforce does not contain enough technical skill to be as competitive in the global market as countrys that have a higher proportion of tertiary level educated workers in their workforce. This is consistent with the statement made in 2015 by the International Labor Organization that, . . . employee skill levels in Indonesia are generally insufficient (Affandi et al., 2019) when considering the skill gaps different sectors are currently facing in Indonesia. Furthermore, previous studies have revealed that the level of education required to affect economic growth depends on an economys developmental state. For example, it was observed in China that advanced provinces in China benefit more from higher education, while less advanced ones are more dependent on primary and secondary education (Affandi et al., 2019) for economic growth. Regarding Indonesia, segments of infrastructure outside Jawa Province need to be improved so that the country can capitalize on job growth and utilize training of more highly skilled workers from a larger demographic of the population.

Working Population of Age 15 Years and Older According to Highest Education Completed 2017-2020 (million people)

Highest Level of Education Completed	2017 February	2018 February	2019 February	2020 February
Primary School	52.59	53.11	52.4	50.96
Junior Secondary Education	22.62	22.88	22.97	23.49
Senior Secondary Education	20.52	21.32	23.1	24.03
Pre-Professional High School	13.54	14.55	14.63	15.48
Vocational Diploma 1/2/3	3.68	3.5	3.65	3.66
University Degree	11.59	11.71	12.61	13.41
Total	**124.54**	**127.07**	**129.36**	**131.03**

Figure 3 *Working Population of Age 15 Years and Older According to Highest Education Completed 2017-2020 (million people) (Badan Pusat Statistik, 2020)*

Application of Digital Educational Service Investment in Human Capital

In 2016, an Izmir Institute of Technology Researcher performed a canonical correlation analyses of GCI data sourced from the World Economic Forum Database to find the relationships between global competitiveness, Information and Communication Technology (ICT), and Education. This was done to find the amount of linear relationship between two sets of data. The results of the study revealed that a link exists between economic development, competitiveness and education related variables (YIlDIZ et al., 2016). Also, a 2019 Research Paper titled Development Analysis of Global Competitiveness Index of ASEAN-7 Countries and Its Relationship on Gross Domestic Product assessed the factors of Indonesias Global Competitive Indexes for the period years 2008 to 2009 and then period 2016 to 2017 revealing the driver factor of competitiveness of, "basic education and health are stagnant (Nababan, 2019). When comparing these research results it becomes apparent that if the education level of Indonesia has stagnated from 2008 to al 2017, then the competitiveness of Indonesia in the Global market has been impacted. By incorporating, ensuring accessibility, and regulating quality online education and training services,Indonesia can increase the cognitive skills of the population.

This can be done by partnering with international baccalaureate schools, professional associations, and private HLIs.

Skill demand is changing especially due to technological advances. Also, redundant roles are expected to decrease by 10% in 2022. This is in part due to the utilization of computer automation by organizations. Despite this, technical roles that are emerging or stable are forecasted to be in demand because work involving expert thinking in a particular domain and complex communication are tasks that computers cannot do well (United States Senate Committee on Health, Education, Labor, and Pensions, 2012).

Stable Roles	New Roles	Redundant Roles
Managing Directors and Chief Executives	Data Analysts and Scientists*	Data Entry Clerks
General and Operations Managers*	AI and Machine Learning Specialists	Accounting, Bookkeeping and Payroll Clerks
Software and Applications Developers and Analysts*	General and Operations Managers*	Administrative and Executive Secretaries
Data Analysts and Scientists*	Big Data Specialists	Assembly and Factory Workers
Sales and Marketing Professionals*	Digital Transformation Specialists	Client Information and Customer Service Workers*
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	Sales and Marketing Professionals*	Business Services and Administration Managers
Human Resources Specialists	New Technology Specialists	Accountants and Auditors
Financial and Investment Advisers	Organizational Development Specialists*	Material-Recording and Stock-Keeping Clerks
Database and Network Professionals	Software and Applications Developers and Analysts*	General and Operations Managers*
Supply Chain and Logistics Specialists	Information Technology Services	Postal Service Clerks
Risk Management Specialists	Process Automation Specialists	Financial Analysts
Information Security Analysts*	Innovation Professionals	Cashiers and Ticket Clerks
Management and Organization Analysts	Information Security Analysts*	Mechanics and Machinery Repairers
Electrotechnology Engineers	Ecommerce and Social Media Specialists	Telemarketers
Organizational Development Specialists*	User Experience and Human-Machine Interaction Designers	Electronics and Telecommunications Installers and Repairers
Chemical Processing Plant Operators	Training and Development Specialists	Bank Tellers and Related Clerks
University and Higher Education Teachers	Robotics Specialists and Engineers	Car, Van and Motorcycle Drivers
Compliance Officers	People and Culture Specialists	Sales and Purchasing Agents and Brokers
Energy and Petroleum Engineers	Client Information and Customer Service Workers*	Door-To-Door Sales Workers, News and Street Vendors, and Related Workers
Robotics Specialists and Engineers	Service and Solutions Designers	Statistical, Finance and Insurance Clerks
Petroleum and Natural Gas Refining Plant Operators	Digital Marketing and Strategy Specialists	Lawyers

Figure 4 *List of Positions Across Industries Categorized by Demand (World Economic Forum, 2018)*

According to the World Economic Forum (2018) Future of Jobs Report, by 2022 the number of redundant roles is expected to decrease by 10% and the number of new roles is expected to increase by 11%. Figure 4 is a list of roles categorized by demand. Instruction related to skillsets attributed to the positions mentioned in the stable and new role categories should be considered when creating curriculum for online training for companies, primary and secondary schools, and HEIs in Indonesia. By doing so, further economic development can be achieved by increasing Indonesias GCI as Indonesia is already forecasted to become the forth (Price Waterhouse Coopers, 2017) largest economy by 2050.

SOCIO-ECONOMIC SUPPORT THAT STIMULATES ECONOMIC GROWTH

Digital Economy Services and Providing Socio-Economic Support

Indonesias digital economy can provide socio-economic support that assists in securing the wellbeing and productivity of the countrys population. A recent example of this is observed when one considers that since the end of the first quarter of 2020, some segments of the digital economy have experienced a surge in business as a result of the federal government response to the COVID-19 pandemic. Ecommerce, ride share, and eHealth companies have assisted in providing commodities and services to consumers and businesses experiencing the effects of lockdown. The wellbeing of the populations health and lifestyle has been secured to a degree in several regions due to the virtual presence; social connectivity; and data availability, access, and utilization some digital services provide. For example, despite the impacts of the pandemic e-commerce company Shopee experienced an increase of 122.6% (Reidy, 2020) of orders registered in Indonesia during the first quarter of 2020 as compared to those registered in 2019. Another example is how Telehealth services have provided much needed help to the public and government administration. Telehealth services such as Alodokter and Halodokter have been providing COVID-19 education and virtual screenings

to the public during the pandemic. Furthermore, in April 2020 Halodokter partnered with Gojek to offer free drive through rapid COVID-19 testing (The Jakarta Post, 2020). The benefit to the public was so great that the virus task force on March 27, 2020 announced it would provide links on its website to 20 telehealth services (Potkin & Widianto, 2020) and create a digital call centre (Potkin & Widianto, 2020) to direct traffic in response to the demand for these services. Aside these benefits are the benefits that ridesharing companies provide through data availability and service accessibility on their digital platforms. Gojek and Grab operations assisted drivers and food sellers maintain some income (Preuss, 2020) during the pandemic despite social distancing restrictions.

Before the 2020 pandemic, segments of Indonesias digital economy received over USD 2.95 Billion (Mulia, 2019) in investment in 2019 alone. As investments in the digital economy has increased in the past decade, so has the number of users onboarding the digital platforms utilized for services. According to the Asosiasi Penyelenggara Jasa Internet Indonesia (APJII), as of 2019 more than 69% (Harto, 2020) of the countrys population are connected to the cloud. However, the rural population has experienced speeds of 200 Megabits Per Second (Mbps) (Umali, 2019) or less in some areas. Such a small data rate makes it difficult for the rural population to use many eservices the require larger rate data usage to function efficiently. Case Studies have revealed that an increase in a broad-band bandwidth of the populations accessible internet can result in higher gross domestic product (Umali, 2019). Investing in broadband infrastructure can be beneficial, but meanwhile, as of 2019 over 76% (Harto, 2020) of the countrys villages had 4G coverage. Alternatively, segments of the population that do not experience fast broadband data rates can still manage to perform some transactions on digital platforms that do not require high data rates.

Leveraging Socio-Economic Support with the Digital Platforms

Digital platforms can also be leveraged to increase socio-economic support for the population by marketing products and services through popular digital platforms. Social media, news sites, gaming, video streaming, travel, and food ordering applications are important sources to market a companys product and services. Several companies use their platforms to generate revenue from users, but also generate revenue from advertisers on their platform. The willingness of the population to stay connected on these platforms is important for companies such as Google to generate marketing revenue. For example, according to Alphabet Inc.s 2020 10K, YouTube Ad revenues were 8.15 billion USD, 11.155 billon USD, and 15.149 billion USD in 2017,2018, and 2019 respectively (Alphabet Inc., 2020). The economy can benefit with a similar function, when companies operating digital platforms collaborate with advertising clients to strategically increase targeted marketing. This can stimulate consumer spending not just in Indonesia, but also in global markets if digital platforms are widely used outside Indonesia as well.

Aside stimulating growth through marketing there is a benefit of operating digital platforms to promote social transformations within communities. Alerts, community announcements, and other useful types of information can be communicated in an instant through social media channels. Furthermore, news organizations, community centers, companies, private individuals, and public authorities can leverage sentiments of segments of the population to mobilize a desired effort through digital platforms. Before the pandemic, data from seven case studies of urban, semi-rural, and rural communities participating in the Indonesian 1999 Urban Poverty Project were analyzed and presented in a 2006 Routledge Urban Studies Journal. The results of the analysis is that two factors contribute to collective action for social transformation: dissatisfaction with the current system of community-level planning and governance (Beard & Dasgupta, 2006) and politicization of residents and community groups (Beard & Dasgupta, 2006). Considering these factors, it is important for communities to identify and survey social-economic issues that affect the community, empathize with one another to achieve a common goal, plan and execute a response, then review feedback to learn lessons or respond to a repeated or similar circumstances. Utilizing tools of the digital economy can contribute to social-economic growth if users can understand circumstances affecting their lives, are financially empowered, and are motivated to make financial transactions between one another on secure user-friendly digital platforms. This is what was experienced in the e-commerce market during the first quarter of the 2020 pandemic as previously mentioned.

CONCLUSION

Indonesias digital economy can provide socio-economic support that assists in securing the wellbeing and productivity of the countrys population. Company stake holders and government policy makers can leverage the benefits provided by the digital economy segments: P2P Lending, EdTech, Ride Share, e-Commerce, and telehealth to empower the population to make transactions beneficial to their daily lives. Also, productive gains in business operations can increase

across Indonesias industries if the skillset of workers currently in the labor market can be advanced through accessible training, such as online learning and certification platforms. However, virtual learning should assist and not replace traditional learning institutions. Reforming the educational systems accessibility and quality to the common population can effectively develop individuals to create and maintain competitive advantages across Indonesias industries in the global and local markets.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Research in this paper does not consider the effects of the passing of the Omnibus Law (Job Creation Law) on October 5th, 2020 regarding human capital development. The International Trade Union Confederation, amongst other labor organizations, considers the passing of the law to be a threat to working conditions (Burrow, 2020). Articles of the law concerning increased maximum overtime and cancellation of mandatory two-day weekend are examples of changes that can impact human capital development. These affects should be assessed to forecast possible scenarios that may arise in the labor market. Another limitation to the research presented in this paper is the incorporation of forecasted conditions of human capital drivers in post COVID pandemic conditions. This topic has been omitted from the research in this paper due to the amount of discrepancy found in various sources of data concerning forecasted recovery rates of COVID stricken environments in Indonesia and abroad. An accurate forecast of conditions of human capital drivers in a post pandemic Indonesia can provide an additional perspective regarding strategizing economic development through the utilization of Indonesias digital economy.

One suggestion for further research is to conduct surveys of the affects and response to cybercrimes on consumers and business operating on Indonesias digital platforms. The types of crimes committed, frequency of attacks, targets, and responses of cybercrime victims can negatively impact the growth and culture of the digital economy. The growth rate and cultural trends of the digital economy can provide insight to forecast effective strategies that can be implemented presently, to capitalize on the potential of human capital. In addition, unemployment, government regulations, and financial crisis can also affect the utilization of Indonesias digital economy to promote socio-economic growth through human capital. Research on the effects of these factors on the digital economy in a COVID and post COVID pandemic environment should be conducted to expose vulnerabilities in the digital economy with respect to human capital development.

REFERENCES

Affandi, Y., Anugrah, D. F., & Bary, P. (2019). Human capital and economic growth across regions: A case study in Indonesia. *Eurasian Economic Review*, *9*(3), 331–347. doi:https://doi.org/10.1007/s40822-018-0114-4

Akhlas, A. (2019). *Digital economy reaches new highs in 2019 despite skills gap, cyberattack issues.* Retrieved from https://bit.ly/2VklzP3

Alphabet Inc. (2020). *Alphabet inc. form 10-k.* Retrieved from https://bit.ly/3fWIMAe

Association of Southeast Asian Nations. (2019). *ASEAN key figures 2019.* Retrieved from https://bit.ly/2JCD0ry

Badan Pusat Statistik. (2020). *Monthly socio-economic data report: May 2020 edition 120.* Retrieved from https://bit.ly/2KXDpp2

Batunanggar, S. (2019). *Fintech development and regulatory frameworks in Indonesia.* Retrieved from https://bit.ly/3fVs7gf

Beard, V. A., & Dasgupta, A. (2006). Collective action and community-driven development in rural and urban Indonesia. *Urban Studies*, *43*(9), 1451–1468. doi:https://doi.org/10.1080/00420980600749944

Botev, J., Égert, B., & Jawadi, F. (2019). The nonlinear relationship between economic growth and financial development: Evidence from developing, emerging and advanced economies. *International Economics*, *160*, 3–13.

Burrow, S. (2020). *ITUC denounces Indonesian governments omnibus law.* Retrieved from https://bit.ly/3lrix69

Chen, G., Meyer-Doyle, P., & Shi, W. (2020). Hedge fund investor activism and human capital loss. *Strategic Management Journal*, *Just Accepted*, 1-43. doi:https://doi.org/10.1002/smj.3257

Claessens, S., Frost, J., Turner, G., & Zhu, F. (2018). Fintech credit markets around the world: Size, drivers and policy issues. *BIS Quarterly Review September*, 29-49.

Cowan, R., Hurry, J., & Midouhas, E. (2017). The relationship between learning mathematics and general cognitive ability in primary school. *British Journal of Developmental Psychology*, *36*(2), 277–284. doi:https://doi.org/

10.1111/bjdp.12200

Dinh Su, T., & Phuc Nguyen, C. (2020). Foreign financial flows, human capital and economic growth in African developing countries. *International Journal of Finance & Economics*, *Just Accepted*, 1-22. doi:https://doi.org/10.1002/ijfe.2310

Greenhouse. (2019). *Indonesias digital economy: Growth prospects after 2020.* Retrieved from https://bit.ly/3oeBJWA

Harto, R. (2020). *Transforming Indonesias education through online learning.* Retrieved from https://bit.ly/3myDbCQ

Islam, A., & Saliola, F. (2020). How to harness the digital transformation of the covid era. *Harvard Business review*. Retrieved from https://bit.ly/3qsySLE

Joseph, S. (2019). *The opportunity for fintech in Indonesias SME financing gap.* Retrieved from https://www.brinknews.com/19646/

Mihalache, I.-C., et al. (2019). Health state of human capital in the economic theory. *Postmodern Openings*, *10*(4), 182–192.

Mulia, K. (2019). *Year-end review: Indonesia saw USD 2.9 billion in investment, a new unicorn, CEOs resignations, and big merger rumors.* Retrieved from https://bit.ly/3fTLwya

Nababan, T. S. (2019). Development analysis of global competitiveness index of ASEAN-7 countries and its relationship on gross domestic product. *Integrated Journal of Business and Economics (IJBE)*, *10*, 1-14. doi:https://doi.org/10.33019/ijbe.v3i1.108

Natason, E. (2019). *Indonesia: The new tiger of Southeast Asia.* Retrieved from https://bit.ly/2VpW5zy

Otoritas Jasa Keuangan. (2020). *Fintech lending developments: March 2020 data.* Retrieved from https://bit.ly/3myFS7q

Potkin, F., & Widianto, S. (2020). *Indonesia leans on healthtech startups to cope with virus surge.* Retrieved from https://bit.ly/3qht1Zs

Preuss, S. (2020). *Indonesia and COVID-19: What the world is missing.* Retrieved from https://bit.ly/3qq3WM7

Price Waterhouse Coopers. (2017). *The world in 2050.* Retrieved from https://pwc.to/2VnwFCN26.

Rahardja, M. (2019). *Why tech is the future of education in Indonesia. entre-preneur Asia Pacific.* Retrieved from https://bit.ly/2KXTKtS

Reidy, M. (2020). *Sea limited reports first quarter 2020 results.* Retrieved from https://bwnews.pr/3qi3mQl

Rosser, A. (2018). *Beyond access: Making Indonesias education system work.* Retrieved from https://bit.ly/33wc4k6

Schubarth, C. (2020). *Sec loosens rules to help small businesses sell stakes to raise funds during Covid-19 crisis.* Retrieved from https://bit.ly/3lz3304

The Jakarta Post. (2020). *Halodoc allows users to book Covid-19 tests.* Retrieved from https://bit.ly/3qkkvsL

Umali, T. (2019). *The palapa ring connects Indonesia to the world and to each other.* Retrieved from https://bit.ly/39tUi4U

United States Senate Committee on Health, Education, Labor, and Pensions. (2012). *The key to Americas global competitiveness: A quality education.* Retrieved from https://bit.ly/3m2L2r6

U.S. News & World Report. (2020). *Best online MBA programs.* Retrieved from https://bit.ly/37qPt9W

World Bank. (2020). *The human capital index 2020 update: Human capital in the time of Covid-19. world bank group.* Retrieved from https://bit.ly/33vQ7lq

World Economic Forum. (2018). *The future of jobs report.* Retrieved from https://bit.ly/3gzGLKG

YIlDIZ, T., et al. (2016). The exploration of the relationships between the global competitiveness, the ICT and education. *Business, Management and Education*, *14*(2), 249–274.

Zhou, S., Siriboonchitta, S., Yamaka, W., & Maneejuk, P. (2020). The impact of cultural industry on economic and employment growth in China. *Journal of Administrative and Business Studies*, *6*(4), 129-137. doi:https://doi.org/10.20474/jabs-6.4.3