ESCALATING HUMAN CAPITAL CONTRIBUTION TO THE ECONOMY THROUGH DIGITAL LITERACY POLICY AS THE DEVELOPMENT OF SOCIETY 5.0

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ABSTRACT

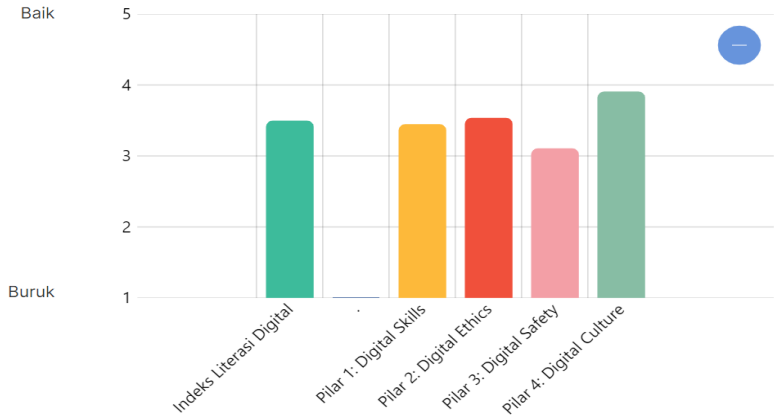
Technology disruption causes unprecedented changes on how every aspect on human being was conducted. Economy and social interaction are significantly affected by this change. Therefore, government should intervene the acceleration of technology use for the society. The study will elaborate the proposed digital literacy policy in Indonesia to boost the contribution of human capital by using descriptive analysis through related data and graph. It is showed that the digital literacy policy through education is one of Indonesia's best option beside the communication and technology infrastructure. It is due to the fact that Indonesians are still incapable of maximizing the opportunity of using technology and social media commercially. Digital literacy curriculum has been comprehensively involve all needed aspects of facing digitalization. However, digital safety is its main considered aspect to be well – explained. Therefore, digital literacy policies through education will be effective if only, the main focus is correct and technology infrastructure development are simultaneously implemented.

Keywords: Technology, Digital Literacy Policy, Human Capital, Economy, Society 5.0

INTRODUCTION

Technology advancement is an inevitable development that will bring greater chances for those who can deal with the situation. Artificial Intelligence (AI), Internet of Things (IoT), and robots are designed to ease the job. So far, it's beneficial for the industry, some jobs have vanished due to its enormous use of technology which is far cheaper and more efficient. Competence of human capital should be shifted to create digital talent for all sectors. The government policy on rescuing the labor workforce from unemployment is investing in technology literacy programs.

The Japanese government introduced the term society 5.0 in describing the situation where technology takes over not only human position at work, but also humanity in the society as well. It is a global phenomenon which forces countries to be considered seriously. All policies are designed to create a future competitive society. As global citizens become more popular recently due to the high integration of all societies around the globe, competence and every aspect of human beings should be well – managed. Human centered policy is in line with Sustainable Development Goals such as alleviating poverty through intensifying technology use on education and agriculture. Policymakers will put more attention on involving technology for economic and management aspects (Shiroishi et al., 2018).



Digital Literacy Index in Indonesia is 3.49 which is categorized as moderate. The highest aspect is Digital Culture (3.90) while the lowest is Digital Safety (3.10)

Source: Ministry of Communication and Informatics (Kominfo), 2021

Figure 1. Indonesia Digital Literacy Index

Digital literacy survey is a research conducted by the Ministry of Communication and Informatics (Menteri Komunikasi dan Informasi - Kominfo) to evaluate the level of technology advancement and implementation in Indonesia. Based on the graph above (see figure 1), the digital literacy index in Indonesia is still at a moderate level. The targeted aspect to be evaluated is digital safety. The lowest score on digital safety means most Indonesians are vulnerable to data phishing and data breaching on insecure platforms.

LITERATURE REVIEW

Mankiw (2009) elaborated how Solow Growth Theory is applied. Solow growth theory emphasized that labor and capital are main driven factors of economic growth. The theory was developed further by applying efficiency of labor. Efficiency can be defined as the improvement of productivity which can be caused by technological - intensive production, labor rises, and working hours dedicated to production quantity. Production function is below:

$$Y = F(K, L \times E) \quad [1]$$

where:
Y = total production
K = capital
L = labor
E = efficiency of labor

The implementation of technology use in efficiency of labor is also known as labor-augmenting. The technology considers the effective number of workers for each production process. The equation of *k* which represents the contribution of worker on economy's output is evoluted as:

$$\Delta k = sf(k) - (\partial + n + g)k \quad [2]$$

where:
Δk = capital stock
sf(k) = investments
∂k = depreciating capital
nk = population growth
gk = technological progress

Based on the empirical and graph analysis, it can be concluded that technological progress is the only factor that can describe the sustainability of economic growth and persistence of rising living standards. Since the contribution of technology is significant to the economy, the implemented policy on enriching digital talents is a must. The situation is worsening by the covid era in which countries around the globe were isolated. The only way to stay connected is through technology. Therefore, in the era of digital economy, the escalation of technology use should be prioritized.

METHODS

Data processed in this article used the quantitative descriptive method. In a quantitative descriptive method, the numerical data were collected and analyzed to be evaluated in descriptive form. In this paper, the issues are described through the literature review in the form of previous studies and analysis of presented data (Kurniawan, 2014).

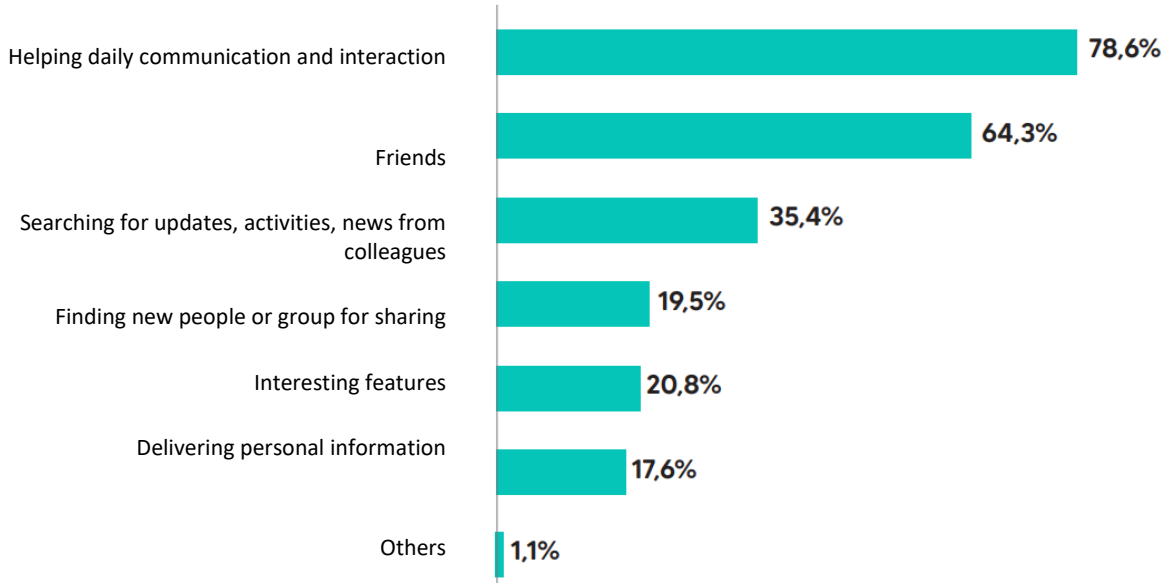
The significance of human capital contribution to the economy will be analyzed through its contribution to economic growth. The discussion will also evaluate the comparison of other countries and potential development of technology advancement on the economy in Indonesia.

RESULTS AND DISCUSSIONS

Digital Economy and Society 5.0

Technology also shifts the form of human interaction. It reaches the community around the globe, it is what is called as society 5.0.The integration of global citizens provides wider opportunities socially as well as economically.

However, based on the data below (Figure 3), the use of social media is still on personal matters such as communication, searching for updates from colleagues, and new friends. Besides, most users focus on interesting features and delivering personal information.



Sources: Kominfo (2021)

Figure 3. Purposes of Using Social Media

Apart from its use on building borderless social interaction across countries, social media is also an effective platform to be monetized. Information broadcasting and product advertising blast on social media is also a new way of marketing. The economic implication is obviously applied on trade efficiency, especially on easing the transaction process and creating the global marketplace.

Siswadi & Soemitra (2022) conducted a study investigating *e - commerce* and halal product commercialization. Islamic teachings required several aspects to be fulfilled as the transaction is considered to be in halal way such as the clarity of product information and avoiding any form of deceptive action such as *usury, maysir, gharar, etc.*. Applying *e - commerce on business* shows a positive significant impact on increasing sales and even supporting *mompreneurs* in the family. Massive use of technology also encourages programming schools and digital marketing competency to be the new challenges as well as opportunities for new job opportunities.

Digital economy is also significant in improving the tourism aspect in the United Kingdom (UK). Tang (2021) found that from 2011 to 2019, the tourism aspect showed an increasing positive trend since the digital economy was maximized in the UK. The positive significant impact of tourism is through the market control capabilities, freedom of trade, and regime quality.

Ding (2022) study showed that technology helps China's economy to grow higher. Digitalization is the new scheme of economic growth. Based on data from 2011 0 2019, it is proved empirically that the digital economy has a remarkable effect on regional development. Nevertheless, technology will be a powerful engine if only the technology development policies are targeted on appropriate regions. Therefore, the technology development disparities will be narrowed.

Society 5.0 and industry 4.0 are groundbreaking concepts of technology used to improve economic prosperity, quality of social life, and sustainable development. These concepts push the university's transformation. Engaging learning processes should be applied aiming at innovative and digital - oriented competency. Quintuple Helix Model (QHM) is an appropriate model of considering comprehensively different perspectives at all stages. However, practical application is still questionable due to QHM being only based on the process theoretically (Carayannis & Jancelewicz, 2022).

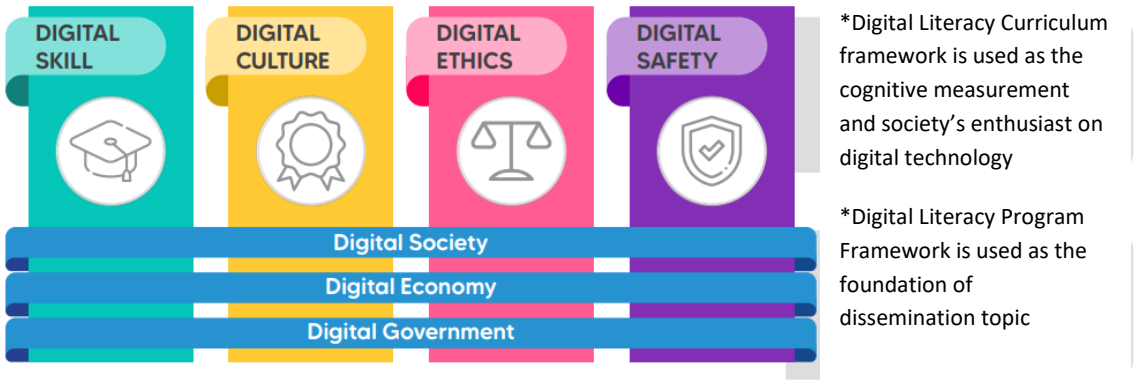
Based on Potocan et.al. (2021), the concept of society 5.0 promotes innovativeness in every aspect. The research showed that society 5.0 which reflects the modern society has driven the new pattern of Corporate Social Responsibility priority. Industries are looking for activities that is based on sustainable development goals. Technology becomes the solution for operational efficiency for human-centered safety. Furthermore, most CSR activities are focusing on social well-being which does not ignore the environmental effects. Therefore, society 5.0 supports the sustainability of economic as well as promising innovations through technology.

Digital Literacy Program in Indonesia

Diah (2021) in her article examines the digital literacy aspect in Indonesia. Indonesia policy reform is now looking at creating a digital literacy curriculum. The intervention should be made through education which is the fastest way of reaching the young generation who will be in the competitive labor workforce. There are four pillars that are part of the framework for developing a digital literacy curriculum. Each pillar is described below:

1. Digital Skill is an individual's ability to understand and use Information and Communication Technology (ICT) hardware and software as well as digital operating systems in daily life.
2. Digital Ethics is the ability of individuals to realize, model, adapt, rationalize, consider, and develop digital ethical governance (netiquette) in everyday life.
3. Digital Safety is the ability of users (users) to recognize, pattern, apply, analyze, weigh and increase awareness of personal data protection and digital security in everyday life.
4. Digital Culture is the individual's ability to read, decipher, familiarize, examine, and build national insight, the values of Pancasila and Bhinneka Tunggal Ika in everyday life and the digitalization of culture through the use of ICT.

Digital Literacy Curriculum and Program Indonesia 2021



Source : Adapted from Digital Literacy Roadmap 2020 – 2024

Figure 2. Digital Literacy Curriculum

The curriculum concept of digital literacy is designed to promote comprehensive understanding of how to use technology. Based on the graph below, the digital literacy index in Indonesia is still at a moderate level. The targeted aspect to be evaluated is digital safety. The lowest score on digital safety means most Indonesians are vulnerable to data phishing and data breaching on insecure platforms.

CONCLUSION

Unquestionably, digitalization is an inevitable change which is frightening as well as appealing. It is frightening for those who are not familiar with technology - based industry. However, technology is an appealing and promising new engine for economic growth.

Digital policy should be mapped based on each region's need. In Indonesia, digital literacy policy is planned to be implemented in formal education through the developed curriculum. The indonesians' awareness of digital safety is still low. Besides, their priority of using technology is still uncommercial, while the economic potential is still ignored or unwell-managed.

Recommendations

Government intervention is still massively needed in developing countries, such as Indonesia. Policies that support digital competency is Indonesia's new current issue to be solved. Here are some suggestions that could be sharpened the digital literacy program in Indonesia:

1. Due to digital literacy being an applicative study, digital infrastructure policy is fundamental and needs to be developed. The infrastructure development should cover areas in which the tourism sector is its main economic value. Therefore, its market segmentation could reach not only domestic tourists, but also foreign tourists.
2. Digital literacy curriculum in Indonesia should focus on elaborating the opportunities that appear from technology innovation. The elaboration should be as simple as it is applicable, affordable, and profitable for each household.
3. As well as economic contribution, digital safety insight is also should be well - explained during the learning process. Since the students themselves are even more advanced, practical experiences and case studies are more preferable.
4. Educating people without having a secure system for the government itself is also nonsense. Government should hire digital talent on cyber security, hence, people's trust for going digital in each aspect is undeniable.

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