

ECONOMIC TRANSFORMATION IN THE ERA OF DIGITALIZATION AND ITS IMPLICATIONS FOR THE EMPLOYMENT SECTOR (LITERATURE REVIEW)

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Abstract

The digitalization era has transformed the global economy and reshaped the labor market. This literature review examines the implications of digital transformation on economic structures and employment sectors. Key technologies, including artificial intelligence (AI), big data, and the Internet of Things (IoT), have accelerated business model evolution and enhanced efficiency across industries. However, these advancements have also disrupted traditional employment patterns by creating new job opportunities while simultaneously automating and eliminating manual labor roles. This study highlights the dual impact of digitalization: the emergence of flexible work through digital platforms and the risk of structural unemployment due to skill gaps and automation. Reskilling and upskilling are identified as essential strategies to prepare the workforce for evolving demands. Furthermore, governments and corporations must collaborate to develop adaptive employment policies and comprehensive training programs. While digitalization presents challenges, such as inequality and workforce displacement, it also offers opportunities for global connectivity, innovation, and economic inclusion. This paper concludes that leveraging these opportunities requires proactive strategies to ensure a dynamic and sustainable employment ecosystem.

Keywords: Digital transformation, employment sector, automation, skill gap, workforce development, economic inclusion, artificial intelligence, reskilling, labor market.

INTRODUCTION

The development of digital technology has become a major driver in the transformation of the global economy, changing the way companies operate and interact with consumers. In this digital era, technologies such as the Internet of Things (IoT), artificial intelligence (AI), and blockchain have created new business models that are more efficient and innovative. With the integration of digital technology in all aspects of economic activities, from production to distribution and consumption, the digital economy has now become an integral part of economic growth worldwide (Abdillah, 2024; Ardiansyah, 2023). This transformation not only increases productivity but also creates new opportunities for entrepreneurs, especially in the e-commerce and fintech sectors.

The positive impact of the digital economy is strongly felt in Indonesia, where the value of the digital economy reached IDR 714.4 trillion in 2022, growing by 27.6% compared to the previous year (Gultom et al., n.d.). This growth is driven by the increasing penetration of the internet and the widespread use of digital

devices. In addition, the micro, small, and medium enterprises (MSMEs) sector also benefits greatly from digitalization, which helps them access global markets and enhance their competitiveness.

However, despite the many advantages offered by digital transformation, challenges remain. The issue of low digital literacy among the public is one of the main obstacles in fully harnessing the potential of the digital economy. In addition, cybersecurity and uneven internet access also become important issues that need to be addressed to ensure that all layers of society can participate in the digital economy. Therefore, collaboration between the public and private sectors and investment in technological infrastructure are essential to drive inclusive and sustainable economic growth.

The changing landscape of work due to digitalization has become an unavoidable phenomenon in recent years. Technological advancements, such as automation, artificial intelligence (AI), and big data, have changed the way work is done in almost every industrial sector. On one hand, digitalization increases productivity and creates new jobs, but on the other hand, it also eliminates traditional jobs that are no longer relevant. According to a report from the World Economic Forum, it is estimated that 23% of the workforce in various industries will experience significant changes in the next five years, with 69 million new jobs created, but also 83 million jobs lost (Bambang Soesatyo, 2024).

One significant impact of digitalization is the shift in the skills required in the job market. Digital skills, such as programming and data analysis, have become very important, while traditional skills are increasingly less in demand. This requires workers to undergo reskilling to adapt to the new demands in the job market. Moreover, with the increasing flexibility of remote work offered by modern communication technology, physical location is no longer a limitation in job searching.

However, challenges remain in facing this change. The skills gap between workers who have access to digital education and training and those who do not can widen the inequality gap in the labor market. Therefore, it is important for the government and the private sector to collaborate in providing relevant training programs and supporting inclusivity in the workplace. Only with a coordinated approach can we ensure that digital transformation brings benefits to all workers and creates a better work environment.

Understanding the relationship between digital transformation and employment is crucial in facing the rapid changes in today's work environment. Digital transformation has changed the way companies operate, with automation and artificial intelligence (AI) becoming an integral part of business processes. This not only increases efficiency but also affects job structures, where many traditional jobs are at risk of disappearing or changing. According to research, more than 50% of jobs needed by 2025 will require technological skills, such as

data analysis and software development (Afrison, 2023). Therefore, it is important for workers to understand the new skills required to adapt to the ever-evolving market demands.

One significant impact of digital transformation is the shift in the types of skills needed in the labor market. Digital skills, such as programming and the use of analytical tools, have now become very important, while traditional skills are increasingly less in demand. Research shows that workers must undergo retraining to meet the changing needs of the industry due to digitalization (Ardiansyah, 2023). In addition, the remote work model is also becoming increasingly popular, allowing workers to collaborate effectively without geographical limitations. This creates new opportunities for individuals to access jobs that were previously out of reach.

However, challenges remain in facing this change. The skills gap among workers has become a major issue, where those who do not have access to education and digital training are at risk of falling behind. Therefore, collaboration between the government and the private sector is essential to create policies that support training and skill development. By understanding the relationship between digital transformation and employment, we can design effective strategies to ensure that all workers have the opportunity to participate in the continuously evolving digital economy.

The purpose of this research is to review the literature related to digital transformation and its impact on the labor sector. Digital transformation has become a major driver of change in the way work is done and the structure of industries worldwide. With the rise of automation, artificial intelligence (AI), and other digital technologies, many traditional jobs are at risk of disappearing, while new jobs requiring digital skills are emerging. This research aims to understand how these changes affect the demand for skills in the labor market and how workers can adapt to these changes. According to a study, more than 50% of current jobs will undergo significant changes in the next five years, requiring workers to possess skills that are more relevant to the continuously evolving industry needs.

In addition, this research will also explore the challenges faced by the workforce in dealing with digital transformation. Many workers, especially in traditional sectors such as manufacturing and agriculture, may not have the necessary skills to adapt to new technologies. This creates a skills gap that could worsen unemployment rates if not addressed properly. In this context, it is important for the government and the private sector to collaborate in providing relevant training and education programs so that workers can enhance their skills.

Finally, the aim of this research is to provide recommendations for policymakers and other stakeholders on how to manage the impact of digital transformation on employment. By understanding the relationship between

technology and employment, it is hoped that effective strategies can be designed to maximize opportunities while minimizing the risk of job loss. This research is expected to provide important insights for the development of policies that support inclusivity and skill enhancement for the entire workforce.

LITERATURE REVIEW

Digitalization in the Economy

Digital transformation is the process undertaken by entities to shift from the use of traditional technology to digital technology in various operational and strategic aspects. This process not only involves the adoption of new technologies but also the transformation of organizational culture that encourages collaboration, innovation, and efficiency in delivering value to customers. In this context, digital transformation enables organizations to enhance productivity, reduce costs, and improve customer experience through the implementation of technologies such as artificial intelligence (AI), data analytics, and the Internet of Things (IoT) (gnld.siberkreasi.id, 2024).

The concept of digital transformation includes several important stages. First is digitization, which is the process of converting data from physical format to digital format. Next, the integration of data into an integrated business information system allows for more efficient access and use of data. The final stage is automation, where business processes can be automated to enhance operational efficiency. Thus, digital transformation is not just a technological change, but also a comprehensive change in the way organizations operate and interact with customers (Sudiantini et al., 2023).

In the current era of the digital economy, understanding digital transformation is becoming increasingly relevant. The digital economy refers to the use of digital technology to create value in economic transactions, including e-commerce and fintech. Digital transformation enables companies to quickly adapt to changes in market demand and create new, more responsive business models. Therefore, organizations that successfully implement digital transformation will have a competitive advantage in the increasingly interconnected global market.

Labor Theory

The concept of traditional jobs and digital jobs reflects a significant shift in the way work is done in the modern era. Traditional jobs are generally tied to physical locations and involve specific manual skills, where workers must be physically present at the workplace to perform their tasks. On the other hand, digital jobs allow for greater flexibility, where individuals can work remotely using digital technology. This phenomenon is further strengthened by the emergence of digital platforms that connect workers with employers without geographical

boundaries, thereby creating new opportunities for a skilled workforce in the field of information and communication technology (unairnews, 2022).

The Skill-Biased Technological Change (SBTC) theory explains how technological advancements, especially in the field of digitalization, have changed the demand for skills in the labor market. SBTC argues that technological innovations tend to increase the demand for jobs that require high skills, while lower-skilled jobs are at risk of disappearing or being threatened by automation. In this context, workers with digital skills and the ability to adapt to new technologies will have a better chance of securing good jobs, while those who cannot adapt may face difficulties in maintaining their positions in the job market (Valentino, 2023).

The implications of this change are very important for employment and education policies. To ensure that the workforce can adapt to these rapid changes, retraining and upskilling programs focused on developing digital skills are necessary. The government and the private sector must work together to provide access to relevant education and support the transition of workers from traditional jobs to digital jobs. With the right approach, we can harness the full potential of digital transformation and ensure that all workers have the opportunity to succeed in this new economy (Adha, 2020).

The Relationship between Digitalization and Employment

Digitalization has brought significant changes in the efficiency and automation of work, which in turn affects the dynamics of the labor market. With the implementation of digital technology, many processes that were previously done manually can now be automated, increasing productivity and reducing operational costs. For example, in the manufacturing sector, the use of robots and automation systems allows production to be carried out more quickly and accurately. However, this automation also reduces the need for human labor for routine and repetitive tasks, thereby creating new challenges in terms of unemployment and the shifting skills required in the job market (Davani & Sulistyaningrum, 2022). On the other hand, jobs that can be automated are at risk of disappearing, especially in sectors that rely on manual tasks. This leads to income inequality between workers with high skills and those who cannot adapt to these changes (Alayida et al., 2023).

To address this challenge, it is important for the government and stakeholders to formulate policies that support skill enhancement and retraining for the workforce. Education and training programs must be designed to prepare workers to meet the rapidly changing market demands due to digitalization. Moreover, collaboration between the public and private sectors is necessary to create an environment that supports innovation while ensuring that all workers

have the opportunity to contribute to the growing digital economy (Alayida et al., 2023).

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METHOD

The research method in this study uses a literature review approach, which aims to collect, analyze, and synthesize information from various written sources relevant to the researched topic. This approach is very important in understanding the context and recent developments related to the phenomenon being studied, particularly in the field of digital transformation and its impact on employment. By using literature studies, researchers can identify previous findings, existing theories, and research gaps that still need to be further explored (Zed, 2008).

The literature search process is conducted by utilizing various academic databases such as Google Scholar, JSTOR, and other digital libraries. Researchers use specific and relevant keywords to narrow down the search results. Inclusion criteria include articles published in peer-reviewed journals, academic books, and other documents relevant to the research topic. Meanwhile, the exclusion criteria include sources that lack credibility or direct relevance to the issue being researched. In this way, researchers can ensure that the information obtained is current and of high quality.

RESULT AND DISCUSSION

Economic Transformation in the Era of Digitalization

The economic transformation in the era of digitalization has brought significant changes to business models, shifting the paradigm from traditional methods to digital. This process begins with digitization, which involves converting data and manual processes into digital formats. Next, the integration of information systems such as Customer Relationship Management (CRM) and Enterprise Resource Planning (ERP) allows companies to manage data more efficiently. Automation then becomes the next stage, where technology is used to automate various business processes, enhancing overall efficiency and productivity.

This change not only improves operational efficiency but also expands market access for companies, especially Micro, Small, and Medium Enterprises

(MSMEs). With the presence of e-commerce platforms and digital marketing, MSMEs can reach a wider customer base without geographical limitations. For example, the value of the digital industry in Indonesia is expected to increase from 77 billion dollars in 2022 to 130 billion dollars in 2025, driven by sectors such as e-commerce and online transportation. This transformation also has the potential to create new jobs in the field of information and communication technology, which is becoming increasingly important in the modern economy. This transformation also has the potential to create new jobs in the field of information and communication technology, which is becoming increasingly important in the modern economy.

However, despite the many opportunities offered by digital transformation, challenges remain. The issue of low digital literacy among some segments of society can hinder the adoption of new technology. In addition, issues of cybersecurity and uneven internet access also need to be addressed to ensure that all layers of society can participate in the digital economy. Therefore, collaboration between the government, the private sector, and society is crucial to create an ecosystem that supports sustainable digital economic growth.

Implications for the Employment Sector

The development of technology, especially in the field of artificial intelligence (AI) and automation, has brought significant changes to the employment sector. It is estimated that around 85 percent of new jobs that will emerge by 2030 do not exist today, creating opportunities for professions that have never been imagined before. Research by Dell and the Institute for the Future shows that technology will not only replace existing jobs but will also create new job opportunities in fields such as digital marketing, software development, and data management (Riduwan, 2010). In this context, new jobs that emerge often require more complex and specific skills, such as data analysis and programming abilities.

However, behind the creation of these new jobs, automation also causes the loss of many jobs, especially those that are repetitive and require low skills. Manual jobs in sectors such as manufacturing and administration are highly vulnerable to replacement by machines and robots. Automation allows companies to increase efficiency and reduce operational costs, but at the same time, it can increase the risk of unemployment among workers who do not have the necessary skills to adapt to these changes (Quach & Thaichon, 2017; Veronica & Bachtiar, 2014). This poses a serious challenge for the workforce, especially for those who struggle to transition to new, more complex roles.

To address this challenge, it is important for the workforce to engage in reskilling and upskilling. Reskilling refers to retraining workers to develop new skills in order to adapt to new technologies, while upskilling focuses on enhancing

existing skills. With the increasing demand for technical skills such as programming and data analysis, companies need to invest in training their employees to ensure they remain competitive in the job market (Kresnadi & Narendra, 2023). In addition, government support in terms of training and education policies is also very important to minimize the negative impact of automation on the workforce.

Challenges and Opportunities

The challenges in the labor market today are very complex, especially in Indonesia. One of the main challenges is structural unemployment, which occurs due to the mismatch between the skills possessed by workers and those required by the industry. In the era of rapid digitalization, many sectors, such as information technology and data analytics, require a highly skilled workforce, while workers in traditional sectors often lag behind (Maharani et al., 2024). Moreover, regulations that are not yet fully adaptive to changes in the labor market also pose an obstacle. Employment policies are often slow to adapt to technological advancements and globalization, creating gaps in job opportunities.

On the other hand, there are opportunities that arise from this change. One significant opportunity is the growth of flexible jobs, such as freelance and short-term contracts, which are increasingly favored by companies to reduce the risk of economic uncertainty. This flexible work allows employees to have more control over their time and workplace. In addition, the inclusion of the global workforce also opens up access for Indonesian workers to participate in the international job market, both physically and through digital platforms. This can increase their income and broaden their work experience on a global scale.

To maximize this opportunity, it is important for the government and educational institutions to improve the quality of vocational training and education. Reskilling and upskilling programs must be strengthened to help workers adapt to the ever-changing needs of the industry. Thus, although challenges such as structural unemployment and rigid regulations exist, there are also opportunities to create new jobs through innovation and adaptation to global trends.

CONCLUSION

The economic transformation in the era of digitalization has significantly impacted the employment sector, leading to shifts in work patterns, the emergence of new technology-driven professions, and the reduction of jobs that can be automated. The primary implication is the growing demand for digital skills, highlighting the critical need for workforce reskilling to remain competitive. Additionally, digitalization has created opportunities for flexible work arrangements through the gig economy and digital platforms, but it also presents challenges such as uncertainty in social protection and widening technological access gaps, particularly in developing countries. However, this study has limitations, including the lack of comprehensive global representation, the rapid pace of technological advancements that render literature quickly outdated, and limited focus on specific impacts on vulnerable groups such as informal workers or individuals with disabilities. Thus, while digital transformation holds significant potential to enhance economic efficiency, its success heavily depends on inclusive policies, robust digital infrastructure, and strategies to mitigate technological inequality.

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