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The Impact of Artificial Intelligence (AI) on Workforce in Emerging Economies

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Abstract- This paper comprises of an analysis of the impact of artificial intelligence (AI) on workforce in emerging economies. Artificial intelligence can do remarkable things to make people life easier and also in the business world, it uses make the organization smarter and faster. On the other hand AI has the capability to replace many more work tasks which are rulebased and monotonous, and which do not need great skill or empathy. This paper will illustrate a literature about the influence and impression of artificial intelligence on workforce in developing economies from the year 2017 to 2025. Artificial Intelligence is specific and has enormously strong development implications and also AI has its worse, smack and illustrate it as a malicious object of taking human society, job and also dominating the world. In developed economies, for instance, AI has replaced well over half of the jobs in the car and related industries in recent decades. Similarly, AI enabled technologies are leading towards significant job losses in the emerging economies as well. On the basis of theoretical knowledge, research methodology, discussion, findings and analysis this paper will explain a comparative analysis of the impact of artificial intelligence in emerging economies labor-force. A secondary research has been conducted in a theme and analyzed.

Keywords: artificial intelligence, robotics, emerging economics, low skills, workforce, automation, machine learning.

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The Impact of Artificial Intelligence (AI) on Workforce in Emerging Economies

Md. Khaladun Nabi

Abstract- This paper comprises of an analysis of the impact of artificial intelligence (AI) on workforce in emerging economies. Artificial intelligence can do remarkable things to make people life easier and also in the business world, it uses make the organization smarter and faster. On the other hand AI has the capability to replace many more work tasks which are rule-based and monotonous, and which do not need great skill or empathy. This paper will illustrate a literature about the influence and impression of artificial intelligence on workforce in developing economies from the year 2017 to 2025. Artificial Intelligence is specific and has enormously strong development implications and also AI has its worse, smack and illustrate it as a malicious object of taking human society, job and also dominating the world. In developed economies, for instance, AI has replaced well over half of the jobs in the car and related industries in recent decades. Similarly, AI enabled technologies are leading towards significant job losses in the emerging economies as well. On the basis of theoretical knowledge, research methodology, discussion, findings and analysis this paper will explain a comparative analysis of the impact of artificial intelligence in emerging economies labor-force. A secondary research has been conducted in a theme and analyzed. The result shows that, about 40% of jobs in Europe are at risk towards AI over the coming decades, almost half of jobs in the USA, and an even greater share in developing countries, but AI will produce as many new jobs as those lost to robots those new jobs will be focused on certain parts of the developed world, and that the developing world will miss out.

Keywords: artificial intelligence, robotics, emerging economics, low skills, workforce, automation, machine learning.

I. Introduction

Artificial intelligence (AI) is avolume of computer science which highlights the creation of intellectual technologies that work and respond like humans. According to (Chowdhury, 2018) artificial intelligence is a division of computer science which has a purpose of creating intellectual machines. It has converted an important part of the technology industry. Artificial intelligence is extremely mechanical and specialized. Artificial intelligence has been used in numerous fields like medical diagnosis, stock trading, robot, law and scientific discovery. According to (Rasheed, 2018)there are various researchers in recent years have found that the prospects of many occupations becoming automated over the next decade. In the UK, 15 million jobs to be at greater risk, and more than 700 are at high risk of wider application of artificial intelligence. Some of the occupations are like administrative, clerical, production, and others are telemarketers, data entry and many more. Autonomous vehicles are now driving in the US, European and Asian cities without human interventionand studies show that it creates feweraccidents rather than the human behind the wheel. In this circumstance many automaking giants like Ford, BMW are planing to launch their first commercial self-driven cars by the year 2020-22. On the other hand, society has come to absorb the changes through artificial intelligence and also try to create several new jobs. In the society, there are jobs which are involving high volumes of repeatable tasks or worked with plenty of data may be taken by the artificial intelligence in the future, but the job which is involved in problem-solving, leadership role, creativity will remain safe. According to (Gough, 2018) theoretical physicist Michio Kali observed that, repetitive jobs in the automobile and textile industries are in deep danger ofAI, butthe non-repetitive jobs like construction workers, gardeners, police, etc will survive in the future. Not only that the white cornered jobs like bookkeepers, agents, and tellers may be spread out, whereas the jobs involving in creativity, leadership may endure unchallengeable. There are good reasons to be concerned about the rapid growth of artificial intelligence (AI) and spread automation throughout the world and also emerging economies. This paper encompasses an analysis of artificial intelligence (AI) in the labor force of emerging economies, and also, it will create a picture of the extensive growth of artificial intelligence in the world and also emerging economies and the implications of AI in the work force. In emerging economies its an obvious threat to employment in areas that creates the backbone of export-based economies like China, Malaysia, Thailand. Nevertheless,it is more distressing for nations that are in an earlier stage of development like Cambodia, Myanmar and most notably India and Bangladesh- all of whom are stressed to build significant-scale, labor-intensive industrial areas.

II. Methodology

Research is unique and significant that classify the information and it is also a process and system. According to (Modares, 2017) research is a mutual language which clarifies to an examination for information. It is a systematic and structured exploration of appropriate evidence of clear theme. This report,

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particularly concerned with an analysis of the implication and impact of the rise of artificial intelligence in the labour forces around the globe and specifically in the emerging nations. A secondary research has been performed with the help of literature reviews and the principle reason for this research is to identify the consequences of artificial intelligence. Alongside with the background and literature this is an inductive research which is a qualitative analysis that researcher use to improve the concept and classify the themes through studying articles, recordings and additional published and verbal material. According to (Robson, 2002) stated that the data are set as expressive examination and descriptive account. It also mentioned the aim powerfully in which the researcher must go through than the author. For this report, a descriptive design has been selected. Descriptive research allows the researchers towards proving different theories and ideas of the study (Prafull K. Khatua 2016). The researcher gained knowledge about artificial intelligence and its impact in the workforce from scholarly articles, journals, websites and internet.

III. Discussions

Since the 1950s, Artificial Intelligence (AI) has been a repetitive theme in research work. Though this field recently gained a significant level of importance because of the advancement of technology and algorithms with the new AI methods like machine learning, modern deep learning, and natural processing of formless data. Although the nations are enthusiastic about joining the contest of this new artificial intelligence and advantage of its possible assistance, it's indistinct what implications AI will create on society. For the low-income nations, the modifications unleashed by artificial intelligence, digital technology. AI creates challenges, and also they threaten towards upsetting the few tried and tested growth strategies. According to (Crabtree, 2018) stateda new research report from the Paris based economic cooperation and development released in March which advised that across 32 industrial economics 14% jobs will be highly automatable which reaching from mechanical robots exchanging to artificial intelligence software taking over interpreters and data analysis. Though automation is still at an early age in most emerging economies, but there are signs that the artificialintelligence and robotics march is accelerating in most Asian countries. China already has 631 industrial robots per 10000 employees, just a third level in the USA and also a tenth of SouthKorea, conferring towards the International Federation of Robotics. On the other hand, the Taiwanese iPhone companyhas already activated a drive which can replace ten thousand of factory workers and have planned to make an LCD panel that can automate one in five of its jobs and also there are significant worries about industries like garments for new innovative tools called, "shoeboots"that demonstrate a threat to textile workers in Bangladesh(Crabtree, 2018). So it can be said that, multiple new technologies and artificial intelligencenow breaking in tsunamis above the world's economies and societies which is unkind for the future of low and middle-income nations. According to (Green, 2017) for the low skill labor and intensive industrialization a middle-income country like Bangladesh may be replaced robots and automation for its garment industry in future which will affect more than 5 million lower-skilled women currently working in this sector.Not only that maybe in future many better paid jobs will require higher level of cognitive and technical skill that are not plentiful in middle-income economies.Nowadays emerging economies like Pakistan, Egypt, Malaysia, Thailandis trying to cope up with a huge extensionof unemployed and underemployed workforce, which need to rise up opportunities in manufacturing and tradeable services because these emerging economies depend on exports and manufacturing and are at earlier stages of industrialization(Green, 2017). So,artificial intelligence is exaggeratedly acceleratingthe automation of factories workforce andpleasing over the routine jobs and services. According to (The Financial Express, 2018) AI does jobs cheaper than the lowest paid workforce of the emerging world and can do better, robots inspecting the iPhone for scrapes and also do not take holidays for Chinese new year and do not claim for compensation raises.In this situation, corporations in future will bring these advanced technologies where they are based, which will leave the emerging economies and hold the bottom steps of the advance hierarchy in an unsafe position.The large group of young, unskilledworkers, which once formed their highest relative advantage, will become a liability.Also, according to (Leung, 2018) by 2021 in the United States, 6% of all jobs will be automated through AI and it will also convert whole professions and industries like customer service representative, and call centers. This kind of automation will devastate countries like the Philippines, where 1.2m people work in this sector and earn 8% of the national income.But on the other hand,from the past 100 years, most of the Asian continent and Latin America have profited through technological advancement in the health sector, housing and food sector, though the sharing of gains through the nations has been rough. (Leung, 2018) also stated that, in future emerging economies will need to have raw material to fuel the brave new world of artificial intelligence and they have to have knowledge of engineering the AI development. For an example, if China could overturn the AI research it will be insightful one for emerging markets.But on the other hand, research shows a diverse view of the impact of artificial intelligence in emerging and developed economies.

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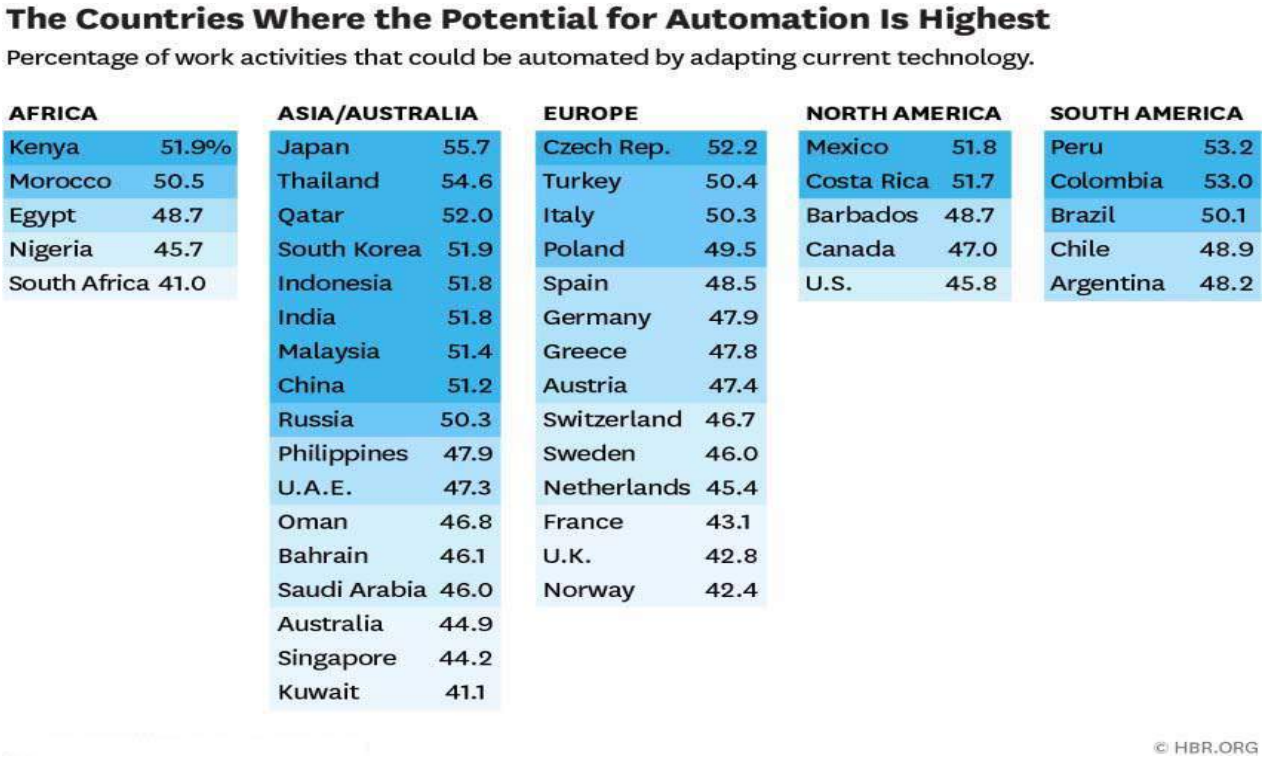

The Countries Where the Potential for Automation Is Highest

Percentage of work activities that could be automated by adapting current technology.

AFRICA		ASIA/AUSTRALIA		EUROPE		NORTH AMERICA		SOUTH AMERICA	
Kenya	51.9%	Japan	55.7	Czech Rep.	52.2	Mexico	51.8	Peru	53.2
Morocco	50.5	Thailand	54.6	Turkey	50.4	Costa Rica	51.7	Colombia	53.0
Egypt	48.7	Qatar	52.0	Italy	50.3	Barbados	48.7	Brazil	50.1
Nigeria	45.7	South Korea	51.9	Poland	49.5	Canada	47.0	Chile	48.9
South Africa	41.0	Indonesia	51.8	Spain	48.5	U.S.	45.8	Argentina	48.2
		India	51.8	Germany	47.9				
		Malaysia	51.4	Greece	47.8				
		China	51.2	Austria	47.4				
		Russia	50.3	Switzerland	46.7				
		Philippines	47.9	Sweden	46.0				
		U.A.E.	47.3	Netherlands	45.4				
		Oman	46.8	France	43.1				
		Bahrain	46.1	U.K.	42.8				
		Saudi Arabia	46.0	Norway	42.4				
		Australia	44.9						
		Singapore	44.2						
		Kuwait	41.1						

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Source: Mckinsey Global Institute

Figure 1: Countries with highest Automation (Source: Harvard Business Review, 2017)

According to (Chui, Manyika and Miremadi, 2017) China and India has more than 700 million possible workforce and in Europe, 60million full-time employee comparable and more than $1.9 trillion in wages that is concerned with automation. But in coming decades automation could be an essential part of the global economy because of the falling birthrate and aging countries from China to Germany. On the other hand, there is an estimation that artificial intelligence and automation could increase the economic growth from 0.8% to 1.4% yearly in the future and by the year 2065, the automated productivity growth could enhance the strongest economy in the globe which will be a further 1.1 billion to 2.2 billion full-time workers. As reported by (Chowdhry, 2018),In 2025 due to the transformation of artificial intelligence, machine will perform more tasks compare to human and that will be the principle global impact and for growth opportunities about 54% of employees need higher-skills, on the other hand by the year 2022, 50% organization predicts that full-time position will be shrink due to automation but 40% think it can extend workforce and 25% assuming maybe automation will create new roles. To facilitate the future workforce transformation individuals and governments should take the initiative to reskilling and upskilling the workforce talent and enabling a lifelong learning environment.

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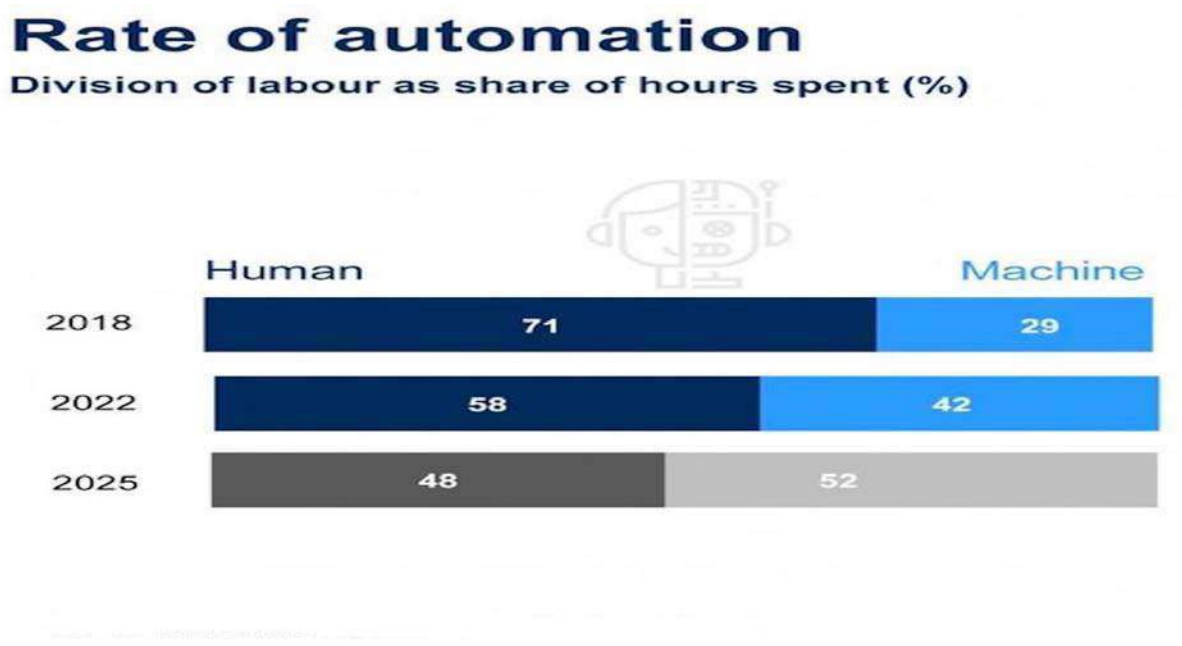

Source: Future of Jobs Report 2018, World Economic Forum

Figure 2: Rate of Automation (Source: Forbes. com 2018)

According to(Chowdhry, 2018)In the year 2018 to 2022 human will focus on more productive work because the machine will be replaced by the physical labor workforce and aviation and tourism industries are expected to see the highest returning. There will be growing demand for financial investment in East Asia, Western Europe, and factory workforce in Latin America, South Asia. By the year 2030 artificial intelligence, automation could bring approximately $15 trillion to the world wide GDP. In emerging economies artificial intelligence will narrow in down the opportunities, but also it will open alternative revenues for the development as well. According to (Yusuf, 2017)Artificial intelligence, and automation will make an inroad and advanced the economies by the collaboration of human and machine. They can reinforce the proportional advantage of high and low-income economies in manufacturing and services for which demand will be increasing. On the other hand conferring to (Haldane, 2017) new technologies might expand the difference in technologies and productivity between the progressive and emerging economies. In reality, emerging economies will be in danger unless they come to hold with the new technologies, upgrade policies, human capital and much more. As stated (Fan and Choa, 2018)Middle Eastern economies could diversify their economies from energy sector through artificial intelligence like oil producer Saudi Arabia has said AI and automation will help this change from the reliance on oil revenue, and will cost 500 million by the year 2020.



Source: IMF 2018

Figure 3: OPEC Fiscal Break even oil prices in Middle East

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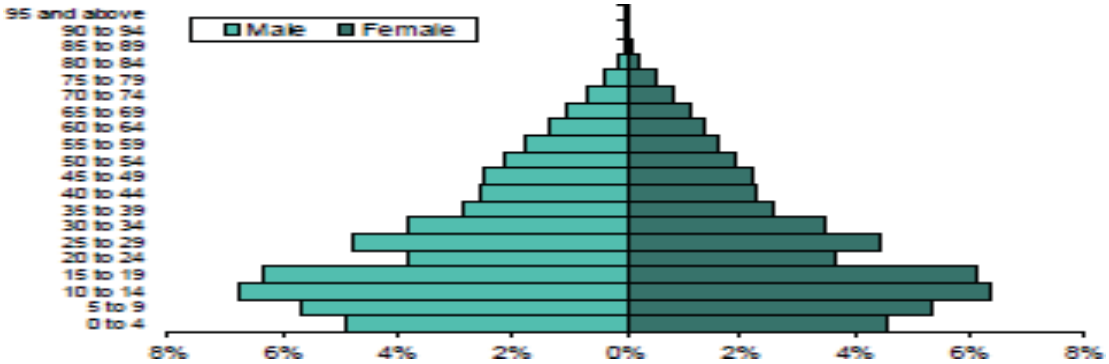
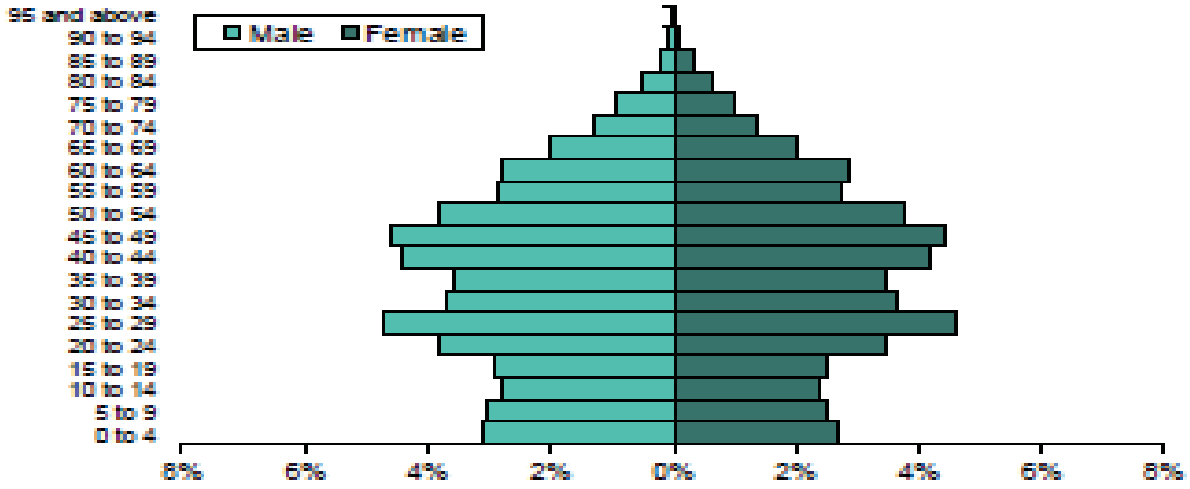
On the other hand, in South Korea, artificial intelligence helped one of the pharmaceutical industry for its product development from one year to just a couple of days. Recently South Korea planning to invest millions of dollars to AI to compete with regional rivals China and Japan. Through artificial Intelligence China changing e-commerce and providing modified online shopping experience which increases its sales up to 20%. But emerging economies still facing challenges of high investment in artificial intelligence, automation, and concern about the automation of traditional employment as well. On the other hand, accordingto (Fan and Choa, 2018)China is the second largest economy in the modern world depend on its labor-force to ensure its economic growthover a long period. But China's demographics are touring with an aging population, and more than 50% of the people are in the middle-age. At the current production level China maybe fall of the shortage of workforce to continue the economic growth.

1982: 1/3 of the population was under the age of 15



Source: NBS, Hoover, and Bernstein analysis, January 2018



Source: NBS, Hoover, and Bernstein analysis, January 2018

Figure 5: Today, demographics in China

China has to undertake organizational improvements to address experiments arising from the previous high-speed development, such as the extra volume in many industries. China has to use artificial intelligence to improve the productivity of the aging population. Artificial intelligence can help the labor force and offer employees with new tools and technique to enhance productivity, but not from replacing the existing labor force(Fan and Choa, 2018). Under other conditions, According to (Bain, 2016), Most of the southeast nation which has the highest risk of automation, In Indonesia 64% textile, fashion and footwear labor force are at risk of robotics and 86% in Vietnam and 88% in Cambodia. Diversely Bangladesh is a country of the manual cheap labor force. The textile and garment industries have more than 4 millions of workers that account 82% of the nation's exports. In this situation, in these nations government and policy makers should open more favorable atmosphere which lead to better human investment, research and expansion.

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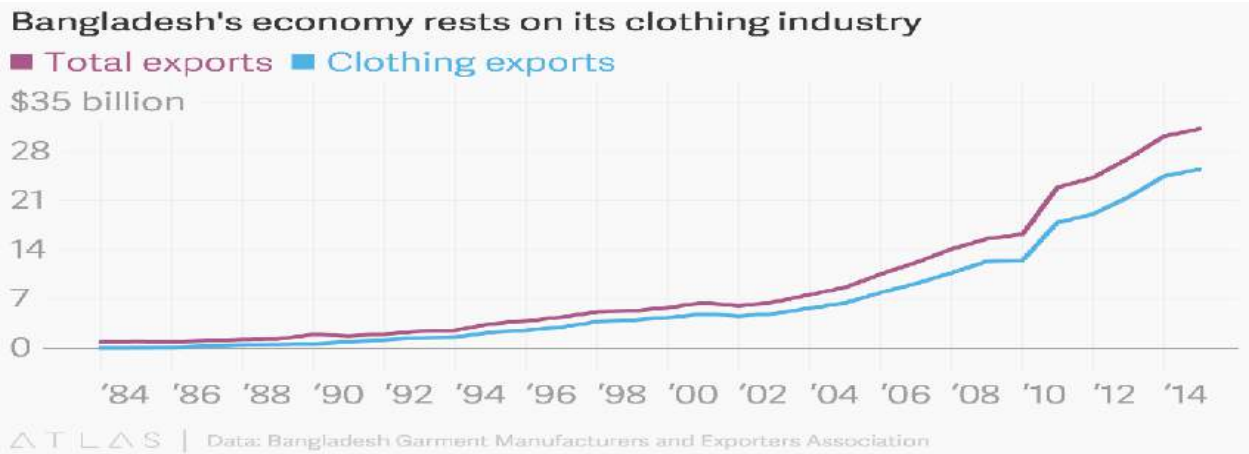

Source: BGMEA

Figure 6: Bangladesh Economy with Clothing Industry

As stated in(Ilo.org, 2019) that, robotization and automation already cominginto reality in the emerging manufacturers who have been increasingly introducing artificial intelligence to improve the production, quality and work safety, but robots do not inevitably lead the human efficiency, so, to increase the productivity and economic growth robots and human should work collaborate way rather than replace them.

IV. Findings and Analysis

Artificial intelligence has trickled into everyday life in the developed nations and there is lots of available potential in relationships with AI usage, especially in humanitarian extents. The impact of artificial intelligence in developing nations could be a multiplier outcome where the resources very limited. By controlling and collaborating with the power of artificial intelligence, businesses, nongovernmental organizations (NGOs) and governments can resolve the life-threatening difficulties and increase the living of local society, communities in the developing world. According to the above discussion and evaluation, we have found that, though artificial intelligence has numerous disruptions on employment in emerging economies, AI can also work collaborate with human to develop the economic growth of emerging nations. As reported by(Chowdhry, 2018) In emerging economies artificial intelligence has been at a micro level where it solves small, specific problems to develop the growth of a nation. It can be predicted that when machine learning spread its advancement, AI will resolve more problems and solve the difficulties in developing and emerging economies. So when AI properly adopts, itwill completely impact our everyday lives, not only in disaster management, education, health care, poverty,pollution, and agriculture. How artificial intelligence and automation will play a role in emerging economies is uncertain, but emerging economies should rethink its development strategy which includes the countries like, Bangladesh, Malaysia, Thailand, Pakistan, China and more. Emerging economies should harness with a new technological invention as soon as possible because the ones who are slow to embrace with new technologies will be left behind.Conferring(Yusuf, 2017) nowadays. the modest export- oriented industrialization process does not suffice for further development. The new development strategy will be more multifaceted and multi-standard, which is strongly related to technology. Like for an example, According to(theinnovation enterprise.com, 2019) In emerging economies, artificial intelligence has its important impact, and the technologies of AI has enormously resilient development implications of developing economies, but there are quite a large number of challenges to implementing of the AI technologies in emerging economies. The report also stated, firstly emerging economies need to build the infrastructure, next-generation telecoms, power, and agriculture process where the technologies of AI can be used. There are some specific areas where artificial intelligence can create benefit towards emerging economies:-

Agriculture: Food and water are the two principle concerns in developing economies, and AI can increase the production of farmland to support small village farmers with the implementation of machine learning algorithms used through drone technology to plant and feed the seeds with hustle beyond human capabilities.On the other hand, AI can identify the crop diseases, which will benefit farmers in emerging economies. According to (Hughes and Legg, 2017) the project that expects to radically convert disease monitoring through AI, advanced sensor technology to help smallholder farmers. It also increases the effectiveness of farm-level by the democratization of AI, such as Google's TensorFlow. Under other conditions, according to (Yusuf, 2017) in Central America and some

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countries in Asia have started improving and developing Agro business through physical, financial extension and research infrastructures which might help to growth success in agricultural business and also artificial intelligence and automation can guide for the agricultural revolution.

Resource Establishment: Artificial intelligence can examine numerous issues at the same time where humans cannot, for example, "Harvesting" is a machine learning process to evaluate the satellite statistics of the earth's surface. It can identify the areas where investment in the water is needed and also techniques to serve farming institutions to allocate money effectively.

Healthcare: Machine learning is a process of artificial intelligence which can convey data from the ecosystem, biography and public health to recognize the bat types with a high chance of protecting diverse viruses, and also it can classify the species that transfer, their location and prevention method. Machine learning is the efficient method of identifying the virus of the diseases and its relief as well (theinnovationenterprise.com, 2019). In emerging economies, there is a shortage of doctors where AI could transform the health care system through innovation. AI could support medical doctors to take the best decision easily. According to (Bhattacharya, 2018) AI could assist, and train the medical personnel in many difficult situations that can ease the risk of medic's knowledge some times and for technical tasks, AI could help many primary sectors that can make up an portion of the work of doctors. New research, conducted by (Fan and Choa, 2018) stated that, A SouthKorean biopharmaceutical company hadpositively diagnosis mixtures using a freshartificial intelligence based a system and the company already set up system with data on pathogen and disease evidence that gathered over the last 15 years. It has a self-developed algorithm and virtual experiment whichreduce the time from four years to just one year. Additionally, a researcher needs one year to observe 200 to 300 cases, but through the use of artificial intelligence within the same time the system can examine 1 million test data for more than 4 million people.

Education: Artificial intelligence can impact the education sector as well in emerging economies. AI system can be designed to help the educators to make and deliver diverse contents better. According to (Bhattacharya, 2018),As a human being sometimes teachers are not perfect, AI could help them to de-task the work into diverse portions which are suitabletowards AI technologies, and train educators to build up 'emotional intelligence' for students. On the other hand, AI can measure appointment of students within the materials, help and support students with extra contextual information and distribute personal support.

Transforming the public service delivery: Artificial intelligence can help and assist the service in emerging economies in a varietyof ways, it can enhance the public service delivery system as well.According to (Flinders, 2016)nowadays,in Japan, artificial intelligence is used to reduce littering and parliamentaryinquiries from citizens.On the other hand, in Singapore, government setting up a new digital agency to drive the digital transformation to work public sector companies. This kind of agencies will help and support the evolution of next-generation public services in emerging economies.

Ethical issues: Artificial intelligence can make new innovative markets and helpthe businesses and customers more efficient and smarter.According to (Knight, 2017) in Germany,governments taking initiatives for decision making to encourage ethical behaviorthrough AI controlling crash scenarios for driverless cars. This kind of rules and regulations highlights human life after the property damage and do not distinguish among human lives. Though business is driving advancements in artificial intelligence technology, governments considerations.

Artificial Intelligence is the volume of instruments to make the forecast of using big amount of statistics to take actions in the compound, formless environments (Agrawal, Gans and Goldfarb, 2018a). The whole logic of artificial intelligence structure is to suggest skilled knowledge and non-specialists and it also concern about the sophisticated medical policies, like activity trackers, agricultural proficient service to lead farmers in selecting and planting various seeds in the right way at the right time and platforms for enhancing multi-modal transportation and also associate the huge assortment of users to give advice and supervision which help the productivity particularly in areas which dominated through low-skilled workers in emerging economies. According to (MGI, 2017), in developing nations, manufacturing sector is still an area of low productivity, which remains to fascinate an important segment of low-skilled workers, butthe AI system could help to hustle up the construction time, cutting the waste and enhancing the maintenance cycle of buildings, without moving the expertise composition of the sector. On the other hand, AI has also developed a huge range of data that can train diverse models and make predictions as well. According to (Brink – The Edge of Risk, 2019) there are some innovative applications of machine learning which contains prediction about earthquakes, tsunamis on the basis of progressive data, financial analysis and methodical maintenance. In emerging economies where nations are still struggling with outdated infrastructure, by the use of Artificial intelligence, like a natural disaster evaluating

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system, techniques for earthquake predictions has massive potential towards enriching the standards of safety, security, economical advancement and human development.Additionally, in emerging economies hunger, sanitation, illiteracy, global warming is the most common phenomenon, but through artificial intelligence, smart grid operation can be implemented and it can maintain the system that can cut price and give power to the rural people. It can also use the distant investigation and determination of an effective resource distribution program.

V. Conclusion

This report originates with the consideration of the impact ofartificial intelligence and automation that has a reflectiveimpressioninthe workforce in emerging economies. Emerging nations should work collaboratively with AI and digital innovation and should focus their economics for a better future.On the other hand, emerging economies should prepare their workforce forthe future AI revolution which will totally depend on data-driven method, automation and shaping the labor workforce for lifelong learning opportunities. Because according to (Benioff, 2016), it is projected that jobs in the future will be squeezed as artificial intelligence automates the whole variety of responsibilities just as the internet did 20 years before. AI revolution will completely convert so many jobs and will spawn new kinds of jobs which will drive the economic growth. On the other hand, (Tractica.com, 2019) stated that, artificial intelligence will track behind the USA and North America for next 10 years, but the main obstacles for the AI succession in Asia faces is a shortage of talent of AI, to highlight, where the USA and Canada has 10000 AI specialist whereas in Asia have a mere 1000 AI expert. So, in the end, it can be said that, AI has a very strongimpacton the emerging workforce and also across the globe. In the Asia-Pacific governments need to think deeply and carefully about the future prospect of AI and sustainable development, the government should develop a workforce, incentive the private sector and utilize AI to deliver more effective public service delivery.

References Références Referencias

1. Agrawal, A. K.; Gans, J. S.; Goldfarb, A. 2018a. *Prediction machines: The simple economics of artificial intelligence* (Boston, MA, Harvard Business Review Press).
2. Bain, M. (2016). *Robots are set to take the jobs of millions of Asian workers in the coming years*. [Online] qz.com. Available at: https://qz.com/727102/robots-are-set-to-take-the-jobs-of-millions-of-asian-workers-in-the-coming-years/ [Accessed 4 Feb. 2019].
3. Bhattacharya, K. (2018). *HOW AI COULD TRANSFORM DEVELOPING COUNTRIES*. [Online] pathwayscommission.bsg.ox.ac.uk. Available at: https://pathwayscommission.bsg.ox.ac.uk/sites/default/files/inline-files/How%20AI%20could%20transform%20developing%20countries_0.pdf [Accessed Oct. 2018]
4. Benioff, M. (2016). *The AI revolution is coming fast. But without a revolution in trust, it will fail*. [online] World Economic Forum. Available at: https://www.weforum.org/agenda/2016/08/the-digital-revolution-is-here-but-without-a-revolution-in-trust-it-will-fail/ [Accessed 19 May 2019].
5. Brink – The Edge of Risk. (2019). *AI in Asia: Challenges and Opportunities*. [Online] Available at: https://www.brinknews.com/challenges-and-opportunities-of-ai-in-asia/?utm_source=BRINK+Asia [Accessed 11 May 2019].
6. Chowdhry, A. (2018). *Artificial Intelligence to Create 58 Million New Jobs by 2022*. [Online] www.forbes.com. Available at: https://www.forbes.com/sites/amitchowdhry/2018/09/18/artificial-intelligence-to-create-58-million-new-jobs-by-2022-says-report/#2b45f6144d4b [Accessed 16 Jan. 2019].
7. Chui, M., Manyika, J. and Miremadi, M. (2017). The Countries Most (and Least) Likely to be Affected by Automation. *Harvard Business Review*. [Online] Available at: https://hbr.org/2017/04/the-countries-most-and-least-likely-to-be-affected-by-automation [Accessed 6 Jan. 2019].
8. Chowdhury, M. (2018). Artificial intelligence and robotics. *The Independent*. [Online] Available at: http://www.theindependentbd.com/post/123462 [Accessed 26 Oct. 2018].
9. Crabtree, J. (2018). Robots threaten Asian jobs. *Nikkei Asian Review*. [Online] Available at: https://asia.nikkei.com/Opinion/Robots-threaten-Asian-jobs2 [Accessed 26 Oct. 2018].
10. Fan, M. and Choa, D. (2018). *Why does artificial intelligence matter to China and other emerging markets?* [Online] www.bnpparibas-am.lu. Available at: https://www.bnpparibas-am.lu/intermediary-fund-selector/artificial-intelligence-matters-emerging-markets-china/ [Accessed 19 Jan. 2019].
11. Flinders, K. (2016). *Singapore launches department to drive digital public services*. [online] www.computerweekly.com. Available at: https://www.computerweekly.com/news/450400629/Singapore-launches-department-to-drive-digital-public-services [Accessed 7 Mar. 2019].
12. GREEN, D. (2017). What does Artificial Intelligence mean for the future of poor countries? *FROM POVERTY TO POWER*. [Online] Available at: https://oxfamblogs.org/fp2p/what-does-artificial-

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intelligence-mean-for-the-future-of-poor-countries/ [Accessed 26 Oct. 2018].
13. Gough, C. (2018). *Once Robots Are Self-Aware, We Should Full-On Merge With Them, Says Michio Kaku*. [Online] Curiosity.com. Available at: https://curiosity.com/topics/once-robots-are-self-aware-we-should-full-on-merge-with-them-says-michio-kaku-curiosity/ [Accessed 11 Dec. 2018].
14. Green, D. (2018). *What does Artificial Intelligence mean for the future of poor countries? - From Poverty to Power*. [online] From Poverty to Power. Available at: https://oxfamblogs.org/fp2p/what-does-artificial-intelligence-mean-for-the-future-of-poor-countries/ [Accessed 26 Oct. 2018].
15. Hughes, D. and Legg, J. (2017). *Pest and disease monitoring by using artificial intelligence*. [Online] bigdata.cgiar.org. Available at: https://bigdata.cgiar.org/inspire/inspire-challenge-2017/pest-and-disease-monitoring-by-using-artificial-intelligence/ [Accessed 9 Feb. 2019].
16. Haldane, A., 2017. Productivity Puzzles. *Bank of England*. http://worldmanagementsurvey.org/wp-content/uploads/2017/03/boespeech_220317.pdf
17. Ilo.org. (2019). *Technology transforming industries critical for growth and jobs in ASEAN*. [online] Available at: http://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_496766/lang--en/index.htm [Accessed 4 Feb. 2019]
18. Knight, W. (2017). *Forget killer robots — bias is the real AI danger*. [online] MIT Technology Review. Available at: https://www.businessinsider.com/killer-robots-biases-artificial-intelligence-ai-2017-10?r=UK [Accessed 7 Mar. 2019].
19. Leung, R. (2018). *Can Artificial Intelligence Propel Emerging Markets?* [Online] emerge85.io. Available at: https://emerge85.io/Insights/can-artificial-intelligence-propel-emerging-markets/ [Accessed 4 Jan. 2019].
20. MGI. 2017. *Reinventing construction: A route to higher productivity* (Washington DC, McKinsey Global Institute).
21. Modares.ac.ir. (2017) [Online] Available at http://www.modares.ac.ir/uploads/Agr.Oth.Lib.17.pdf
22. Prafull K. Khatua, P. (2016). *Research Methodology*. [S.L.]: Himalaya Publishing House.
23. Rasheed, A. (2018). Artificial Intelligence and the future of work. *Dhaka Tribune*. [Online] Available at: https://www.dhakatribune.com/business/2018/05/30/artificial-intelligence-and-the-future-of-work [Accessed 26 Oct. 2018].
24. Robson, C. (2002) Real World Research: *A Resource for social scientist and practitioner researchers (2nd edn)* Oxford: Blackwell.
25. theinnovationenterprise.com. (2019). *AI In Developing Countries*. [Online] Available at: https://channels.theinnovationenterprise.com/articles/ai-in-developing-countries [Accessed 27 Oct. 2018].
26. The Financial Express. (2018). *Artificial Intelligence threatens to devastate jobs in developing world*. [online] Available at: https://www.financialexpress.com/economy/artificial-intelligence-threatens-to-devastate-jobs-in-developing-world/1317547/ [Accessed 29 Dec. 2018].
27. Tractica.com. (2019). *Artificial Intelligence in Asia Pacific | Tractica*. [online] Available at: https://www.tractica.com/resources/white-papers/artificial-intelligence-in-asia-pacific/ [Accessed 11 May 2019].
28. Yusuf, S. (2017). *Automation, AI, and the Emerging Economies*. [Online] www.cgdev.org. Available at: https://www.cgdev.org/publication/automation-ai-and-emerging-economies [Accessed 26 Oct. 2018].

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