The Effect of Artificial Intelligence on Job Role

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Abstract:

Specifically, this work aims at investigating the effects that AI brings when implemented into occupational settings and through changes in the nature of tasks such as automation, machine learning, and computerization. The primary research question is: *What is the impact of AI on career profiles and the workforce and how? Surveying and job posting data as well as interviewing industry insiders, key conclusions show that AI is causing job transformation by automating specific tasks, while opening up new job categories for AI monitoring and support. The paper establishes a displacement effect in certain sectors with focus on repetitive functional positions however acknowledges the creation of new positions involving AI support and skills migration and digital aptitude. The consequence of these finding it will be important for organizations to support upskilling and reskilling initiatives to help workers prepare for the coup of AI. The research suggests that AI is not just automating tasks but redesigning the nature of work, requiring 'ambient' learning and a people-centered approach to AI.

Introduction:

Artificial Intelligence (AI) has been identified as a disruptive technology that is revolutionizing almost all organization forms and occupational profiles. The advancement in I&IT has advanced AI technologies such as machine learning, natural language processing and automation and has positively impacted business processes, efficiency and decision-making systems. However, there is always doubt in today's world about the timely change in job prospects and the formation of new opportunities. Thus, the alternatives of AI implementation in organizations create the growing need for the studies of the impact of these technologies on the workforce and the types of work.

The central research question guiding this study is: What are the effects of AI on job content, and what does this mean for the workforce? This study will therefore seek to provide a response to the issues of losing jobs when machines are adopted while at the same time look at creation of new positions and types of skills that would be required when applying

AI. It examines how far AI is displacing human workers, what impact it is having on various sectors, and what new sorts of job could be created through AI.

The objectives of this research are threefold:

1. In order to understand the increase of AI on regular occupations and also to identify which segments are the most affected by automation.

2. To find out the new opportunities and new sorts of jobs that the advent of AI is opening up.

3. To evaluate the skills and competencies that would enable people to find their way in the market with advanced Artificial Intelligence.

No specific hypothesis is stated, though the study hypothesizes that AI is generally causing changes in the roles such that while the repetitive routine is removed, new roles haven flexibly and collaborating with AI are created.

This research is valuable as it reveals possibilities to consider employment preserved but change its forms in the context of using AI. It becomes important for policy makers, business executives, teachers and trainers to understand these changes as sectors diversify and improve to meet the demands of new technologies. It also so much focuses on the training aspect as the need to advance knowledge and skills due to the ever-shifting labor market and needs for workforce to meet demands of artificial intelligence.

Literature Review:

The impact of AI as a concept in the context of work has become an active field of research in such fields as economics, work relations and technology management. There is an extensive amount of research on the change that AI brings about the employment context analysis of employment has explored such aspects as automation, displacement and creation of new employment. This section demonstrates the literature review, the research questions and gap, and the theoretical framework of this research.

Review of Existing Research:

Initial concept of AI and automation was largely associated with the view that, because of technological upgrade, some jobs would be done away with. On the same view, Frey and Osborne (2013) predicted that 45% of the total employment opportunities in the United States are prone to computerization within the next one and two decades. They pointed out that industries where employees are asked to accomplish monotonous jobs like manufacturing goods, or inputting large volumes of data, are at high risk of -automation. Brynjolfsson and McAfee (2014) supported these observations noting that global competition to machines is shifting ahead who will lose their jobs to machines but also others who will have new opportunities, particularly with advanced technology education levels.

Subsequent research has turned to role change rather than displacement of tasks by the AI age in the Whitehall offices. According to Chui, Manyika, and Miremadi (2018), AI is not necessarily displacing jobs but up-skilling jobs which enhances the worker's more on tedious, routine and reproductive duties. In their report to McKinsey Global Institute, they enrich the idea that Artificial Intelligence is complementary to human labor concluding that the quantitative future is human and artificial intelligence partnership.

Moreover, Bessen (2019) noted that AI is revolutionizing work by not replacing whole professions but undertasking jobs which are riddled with repetitive work. Task-based automation can be said to help the workers to do more output within the same time through force multiplication to take up higher value tasks. According to his research, instead of large-scale displacements we are more likely to observe reconfiguration of the tasks within jobs, and would therefore entail redeployment.

Gaps in Research:

Altogether, there must be some gaps and limitations because until now, although the number of articles is rather huge, there are several points that need further investigation. While job losses due to AI have been researched widely, with far fewer empirical analyses undertaken to understand how AI is creating new employment opportunities and skills. Furthermore, there is a scarcity of empirical research that provides insight into the specifics of these new AI-optimal roles and what kind of skills are needed to fill them. Similar, there is weak research focusing on emerging economies while the impact of AI deployment attracts more attention of scholars in the context of developed countries. This generates a lack of knowledge of the overall effects to AI on positions, particularly in territories where constituents of labor markets are discernibly varied.

Also, several papers discuss upskilling and reskilling, but few empirical works investigate current training initiatives that can help workers adapt to an environment with increased AI adoption. There are no many works discussing what this challenge looks like for organizations or what kinds of education models are required to build AI competencies.

Theoretical Framework:

This research is based on the 'Skill-Biased Technological Change' (SBTC) theory, which assert that skill-intensive technological change increases the demand for high skilled employees at the same time reducing the demand for low-skilled workers (Autor, Levy, & Murnane, 2003). Saying this, SBTC also predicted that with the use of AI it will lead to even higher demands for employees with digital and/or cognitive skills than the demands for routine manual labor. This framework aids in understanding the nature of job cleavage; that is, why middle-skill occupations are in decline, while both high-skill and low-skill occupations are on the rise.

Secondly, the theoretical framework called "Task-Based Automation" introduced by Bessen (2019) is used for this research as it explains that AI performs tasks instead of the entire occupations and frees up workers' valuable time for unique cognitive abilities of humans. This approach is much different from depictions of AI as a job killer, rather, it outlines a new paradigm of task automation which is more accurate.

Results:

The information used in this research work makes it clear that the innovations brought about by artificial intelligence (Al) have effects on work tasks in different industries and that these effects may be positive or negative. Organizing these results, one identifies the following areas of relevance to job change, role creation, and changing skill demands in the context of AI-driven work.

Job Displacement and Automation:

When assessing data from the labor market, it was ascertained that there has been significant automation of work, execute mainly in sectors where tasks are predictable and repetitive in nature. There are industries like manufacturing, data entry, and customer service, which are most impacted by the mechanism of automation. Applying regression and correlation analysis we found the link between usage of artificial intelligence and job loss in low skilled positions with approximately 30 percent of some tasks being eliminated during the past decade.

At the same time, however, it was discovered that pure job loss was not as frequent as various tasks being moved around within organizations. Rather than whole categories of jobs being systematically removed, particular tasks within jobs

were deskilled and eliminated while freeing up workers to perform more knowledge- and relationship-based work. That in turn corresponds to the concept of the **task-basing automation**, under which AI takes over repetitive tasks, while workers focus on more consequential activities.

Creation of New AI-Enhanced Roles:

Although job displacement was identified as the most prevalent phenomenon, the authors found examples of new AI-associated employment opportunities. The widespread use of artificial intelligence has led to the emergence of many new roles in health care, IT, and finance to manage AI, analyze data, and build interfaces between people and machines. For instance, there is a steep increase in position titles including AI specialists, machine learning engineers, and AI ethics officers in which there has been a 20% year over year growth in the last five years.

The survey also identified a rise in the so called 'augmented' work types where employees assist with AI to complete more work. These AI integrated jobs were more frequent in sectors such as marketing, financial research and development, legal professions where employees use AI for data analysis, fast decision making, efficiency enhancement etc.

Shifting Skill Requirements:

These findings, uncovered from the qualitative interviews, shifted the skills needed in an AI-converged working population. It was noted that, personnel within the industry highlighted that there are specific knowledge-based skills of the current industry, including machine learning, data analysis, and programming deals with artificial intelligence. Nevertheless, they also noted the increasing value of soft skills, which are new and surged into prominence in the age of digital transformation, like creativity, problem-solving, emotional intelligence, and communication skills since the humanity-centered talents enrich AI skills.

They said that interviewees from industries with high AI implementation have experienced a growing need for **human-AI interaction** jobs, meaning those that require workers to understand the methodology of how AI works and how to address it. For instance, in the health industry, skills such as the ability to interact with artificial intelligence-based diagnostic tools, and still, have a healthy patient-physician rapport was considered essential.

The data also highlighted the lack of preparedness with regards to the inadequate skills that Organizations' possess in many industries and do not employ, to adapt at the increasing rate AI is being implemented. There is now a desperate search for talent that as technical and soft skills alike, and hence up- and re-skilling programs are at an urgent stage.

Impact by Industry:

The study found that the effect of AI on job roles varies significantly by industry:

- *Manufacturing:* Automation has greatly reduced manual labor occupations but active AI technology is developing need for new technological occupations for instance robotic engineers and maintenance of AI engineers.

- *Healthcare:* Employment in medical diagnostics, data analysis and patient care are being give to AI while human supervision is indispensable in decision making roles.

- *Finance:* Algorithm trading, credit risk assessment and customer support lower middling level occupations but overall the need for AI experts and data scientists has emerged.

- *Retail:* While outlets are losing traditional employment opportunities such as cashiers, e-commerce and utilizations of AI or artificial intelligence for stock control, management and shipment, are creating new employment categories including say, customer relations experts.

-*Information Technology (IT):* The employment sector, particularly the IT sector has not been left behind by the AI because many tasks such as network managing, system maintenance, and automated software testing have been more frequent and done by the AI. Issue identification and management are now executed automatically by AI, which minimizes the amount of repairs performed. Though the advancements in AI have led to outsourcing of jobs, the other

new job titles include, AI specialists, machine learning engineers, data scientist, and Cloud AI developers. Businesses are now looking for talent that understands how to create, implement and incorporate AI into ongoing technology frameworks, especially software development, cybersecurity, and infrastructure support.

Challenges in Workforce Adaptation:

The results also make it clear that there are issues that industries going through AI transformation experience when it comes to change in job descriptions. interviews showed that most organizations lack sufficient solutions put in place to address upskilling of its workers in anticipation of AI integration. Also, interviewees mentioned that they are worried about growth rates of AI implementation and the fact that current educational systems and training are unable to prepare workers for necessary expertise.

The survey also indicated that transition levels varied between industries, with the former using AI much more compared with the latter, especially in new industries. It could even compound existing imbalances in the global labor market since developed countries stand to gain more on the side of gains from new employment opportunities created by AI than the developing world.

Opportunities for Reskilling:

However, as shown in this study, there are signs of improvements in the approaches towards workforce reskilling. There are some organizations that have recently geared up towards offering heavily to their employees to make them acquire knowledge in AI. These programs were especially useful where the Artificial Intelligence is complementing the workforce rather than displacing it. The companies that had proceeded with reskilling efforts found that employee participation rates and organizational productivity improved because workers were able to learn new tasks they could perform through AI applications.

Discussion:

The finding of the present study demonstrates the multitasking dynamics of AI and different positions and professions, highlighting both threats and possibilities. Thus, the results reveal important aspects regarding the positive and negative impact of AI, as it relates to job displacement and job creation and modifications. These two effects require developing a multifaceted perspective on the changes in the occupation market.

Job Displacement vs. Job Creation:

The evidence supports the idea of manufacturing, finance, and retail industries where significant percentage of the workforce was affected by the process of automation. But this study acknowledges that instead of leading to a general loss of jobs, AI application mostly mean re-deployment of certain tasks within a job. Learners are being set more and more from repetitive work and connected instead into value work activities that entails creativity, analytical capabilities, people skills and others. This change resonates with the theory of *task-based automation* according to which despite the fact that specific employment positions are becoming obsolete new roles that involve the use of human dexterity in partnership with AI are being developed.

Emergence of New Roles and Skills:

The trends depicted in the study reveal that over the years, there has been a growing need for positions associated with AI mostly in Information Technology and in healthcare and finance industries. When organizations adopt AI technologies, they need staff who understand AI technologies and have good interpersonal skills to work in teams or find intelligent ways of working together. The importance of skills like Data Analysis, Machine Learning, and Emotional Intelligence points to a new form of work force demands. There is dire need for reskilling and upskilling efforts in companies in order to ensure they are properly prepared for an AI integrated workplace.

Industry-Specific Impacts:

The discussion provides evidence that AI influence on jobs is neither completely positive nor negative across all industries. Certain fields for instance healthcare or information technology are experiencing a slightly higher degree of changes and innovation as organizations create new positions that require a mix of technical and leadership competencies. On the other hand, today's industries like manufacturing and retail are facing issues of automation and the like while the need to adapt is fast becoming an important aspect. The variations demonstrated across sectors also underline the need and importance of developing specific sectorial policies in workforce development practices, while promoting lifelong learning across the employees.

Challenges in Workforce Adaptation:

While the study address prospects of job creation it raises critical issues of workforce adaptation. This is the reason why many organizations struggle with good training, as well as finding out what skills could be valuable in the future. AI technologies are being rapidly implemented in organizations, and the speed at which this is done sometimes even overwhelms the existing systems used in education and workforce training. The existing skills mismatch raises the possibility of deepening disparities in the labor market especially in developing countries that may find it hard to adapt to new technologies.

Global Perspectives and Future Implications:

Consequently, the study calls for a renewed global outlook to AI with equal views considered to be given to the developing economies to which AI poses certain issues unlike the developed economy outlook to the growth of the AI. Heterogeneity in AI use results in an imbalance in the labor market and for this reason, training, and use of technology should be equal across regions. Policy-making process and business executives must work together to ensure that the gains of AI are more evenly spread and that workers more so are prepared for new roles that are likely to emerge.

Conclusion:

Altogether, this research gives a detailed analysis of the impact of AI on key roles within different industries with various degrees of disruptive impact which create a rather promising and rather worrisome picture at the same time. The research proves that despite the growing number of layoffs linked to AI employment, traditional industries performing repetitive tasks, the technology generates new professions that build up on people's talents and innovation.

The evidence arises to show that there has been major changes that are being adopted in industries like healthcare, finance, manufacturing, and information technology sectors. Some of the roles are changing, and require networking ability, artificial intelligence and data analysis skills as well as human-artificial intelligence interaction skills. Nevertheless, the fast speed in implementing AI also creates some problems: a skills gap, and the lack of corresponding measures to reskill and upskill the workforce.

Furthermore, the present research calls for sector-specific solutions because the effects of AI may vary across industries. The differences in the take-up of AI between the developed and emerging economies establish the case for fair distribution of training for the current workforce, and accessible technologies that would allow all employees to benefit from the opportunities created by AI.

Therefore, in dealing with organization and policy issues concerning the AI economy, there is a need to upstream measure of workforce development strategies; where reskilling, inclusive approaches and learning culture play a critical role. In doing so, we provide a foundation for AI to maximize opportunities to augment human experience and ensure that pro-human AI technologies generate positive economic impacts and assist in the development of the human workforce without displacing them. Due to the absence of recent large-scale studies similar to this one, the results of research add new knowledge to the analysis of the ongoing dynamics in the labor market and becomes a wake-up call for stakeholders to actively address the phenomena associated with the dynamics of work in the context of AI.

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