

The Societal Impact of Artificial Intelligence on Job Displacement and Re-Skilling Initiatives

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Abstract — The role that Artificial Intelligence plays in changing the way people work around the world is really big. Artificial Intelligence makes things more efficient. Creates new jobs but it also makes people worry about losing their jobs and having to be more flexible at work. This paper looks at how Artificial Intelligence's affecting people's jobs and it uses surveys and reviews of what other people have written to do this. The results show that there is a difference between how worried people are about losing their jobs and how much they are doing to learn new things because things, like money and time get in the way. Artificial Intelligence is making it really important for people to learn skills it is not just something people can do if they want to it is something people have to do.

Keywords— Artificial Intelligence, Job Displacement, Re-skilling, Automation, Workforce Transformation, Skill Gap

I. INTRODUCTION

Artificial Intelligence has revolutionized our life today. It has already arrived. Its impact has been felt across various sectors such as customer services, finance, and healthcare among others [15]. Artificial Intelligence has transformed how things are done in various areas.

In the past ten years, remarkable advancements in machine learning and data analytics have enabled Artificial Intelligence to automate tasks that were previously performed by humans [3],[15]. The applications of Artificial Intelligence have been experienced in customer services, whereby computers are used to interact with customers. In the financial sector, computers are used to predict future trends, while in the healthcare sector, computers are used to diagnose patients [6],[7].

The above achievements have increased efficiency and productivity [16],[23]. On the other hand, Artificial Intelligence has raised certain issues, particularly regarding employment. The fear that has always existed with regard to Artificial Intelligence revolves around job losses. Machines have taken over tasks that were previously done by humans, and these tasks are repetitive in nature [1],[4]. This applies both to unskilled and skilled professions. The introduction of Artificial Intelligence in the workforce has caused many fears among workers as well as among employers. While Artificial Intelligence does create job security problems, there are also studies showing that Artificial Intelligence creates jobs for

individuals [5],[9]. People have to interact with technology and process large amounts of data hence, this leads to the creation of jobs related to those processes.

In addition to replacing jobs with machines, Artificial Intelligence causes transformation to jobs. This, therefore, means that workers will need to gain certain skills in order to perform the tasks. In essence, artificial intelligence poses challenges and opportunities for workers hence society needs to analyse how artificial intelligence affects us [10],[11].

The key issue is skill acquisition since jobs keep transforming in the wake of technology changes. Re-skilling becomes a necessity for one to continue performing their duties in any job they hold. Re-skilling is the process of gaining knowledge for purposes of doing a particular job or improving one's skills while in the job [18],[25]. Although people are aware of the importance of reskilling, most do not engage in the practice. Individuals know that there are risks involved but have not started preparing themselves. This research aims to identify the impact of artificial intelligence on jobs and recommend ways through which organizations can assist their employees to develop new skills [4],[20],[21]. This research will examine the opinions expressed by various stakeholders on artificial intelligence and the literature available on the subject. Our goal is to identify challenges related to artificial intelligence and propose solutions that can address them. We hope that the results of this study will guide policymakers and organizations

in making informed decisions regarding artificial intelligence [6],[9],[11].

II. LITERATURE REVIEW

Many researchers have studied the interconnection between AI and employment. They provided various opinions regarding the consequences of the introduction of AI. The first studies on automation mainly considered its impact on manual jobs. However, later works revealed the more comprehensive effect of AI on intellectual and professional activities [3],[21]. The current part gives an overview of the existing literature on the displacement of jobs, job creation, skill upgrading, and re-skilling in addressing negative impacts on employment.

Frey and Osborne's study is one of the most important works in the field under discussion. The authors estimated that a considerable number of jobs could be substituted by automation [1]. They stressed that occupations including routine tasks are more likely to be displaced. Later, Autor discussed this issue in his paper and stated that automation entails task replacement but not job displacement [2]. According to Autor, despite the ability of machines to perform some functions effectively, humans possess creative skills, thinking abilities, and communication competencies that cannot be replaced [2],[27]. The latest findings provided by international bodies, such as the OECD or the World Economic Forum, present a more complex understanding of the role played by AI in terms of job automation [6],[7],[9]. As noted by those sources, the effect of AI cannot be reduced to job loss since tasks are reshaped and performed differently [6],[9]. For example, in such industries as healthcare, AI helps specialists perform the tasks related to data analysis leaving them enough time to interact with patients [7],[15]. In the financial sector, AI improves the efficiency of the decision-making process by helping human specialists make better choices [7],[16].

Nevertheless, despite the abovementioned changes, the skill gap remains one of the most pressing issues in this sphere. Indeed, the fast-changing environment created by innovations creates the situation when traditional educational programs do not provide people with the necessary competencies, which leads to the emergence of a skill gap [18],[25]. Moreover, the situation becomes even more complicated in developing countries due to poor access to training [11].

Apart from the skill gap, the literature mentions the problem of inequality as another important issue that has to be taken into account. Indeed, according to the existing research findings, AI is likely to bring more benefits [4],[20],[22] However, re-skilling projects have come to be viewed as an important

solution towards overcoming the challenges discussed above. Many governments and organizations have developed programs intended to improve worker skills. Nevertheless, it is evident that not all re-skilling programs have been successful. Issues surrounding the accessibility and affordability of training programs, among other issues, affect the success of such programs [8],[11].

In conclusion, the literature indicates that while AI technology offers many prospects and poses various challenges, everything will depend on how society adjusts [4],[6],[9]. It is clear that re-skilling has become very essential in the process of adjustment [8],[18],[22].

III. METHODOLOGY

In the current investigation, a mixed method was adopted involving data gathered directly by conducting a survey and data obtained secondarily through other sources of information. The main goal of using this research strategy is the acquisition of quantitative data and contextual information on the influence of AI on society [6],[9],[11].

In order to collect primary data, a structured survey with multiple choice and open-ended questions was conducted online. The sample consisted of people from different fields who belonged to three major categories, i.e., students, working professionals, and people from various industries. Such heterogeneity in sample composition is necessary in order to obtain more reliable results [6],[8].

The following aspects related to the topic were covered in the questionnaire:

- Impact of AI on people's occupations [1],[4]
- The risk of job loss due to the adoption of AI [1],[13]
- Adoption of re-skilling measures [6], [9]
- Skill barriers [18],[25]
- Responsibility for skill enhancement [8],[11]

The majority of the questions posed were multiple choice ones as the main focus of the study is based on quantifiable factors.

Secondary sources, such as peer-reviewed journals, industry publications, and documents issued by international organizations, have also been utilized alongside the primary data in conducting this research. They help to support the results obtained from the surveys and provide further context [6],[7],[8],[9],[11],[12].

Though the methodological approach used in this study can yield great results, one should not overlook some of its drawbacks. First, the sample chosen may be representative enough for exploratory purposes but does not necessarily cover all respondents. Moreover, simulation techniques used in the analysis cannot ensure absolute accuracy of the calculations performed [4],[10]. Yet, this research aims at detecting trends and obtaining insights [6],[9],[23].

The majority of the respondents think that their jobs may be under threat in the next five years because of AI. This shows that there is considerable fear among people regarding their employment in the future. It is interesting to note that the threat perception is greater than the actual threat itself.

IV. RESULTS AND ANALYSIS

1. Impact of AI on Jobs

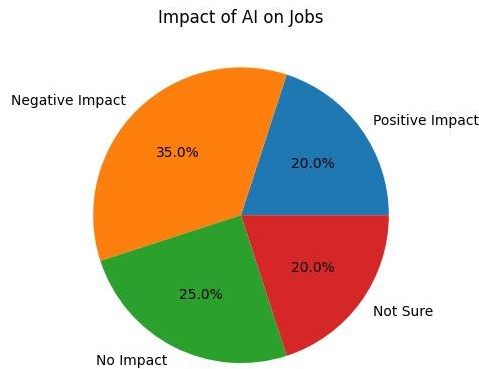


Fig 1: - Impact of AI on Jobs

The results from the survey show that a considerable number of participants view artificial intelligence in a negative light in terms of its effect on employment. Even though some participants were happy about their experiences with AI, such as higher efficiency and new job openings, it seems that the majority believes that AI will disrupt their jobs.

2. Perceived Job Risk

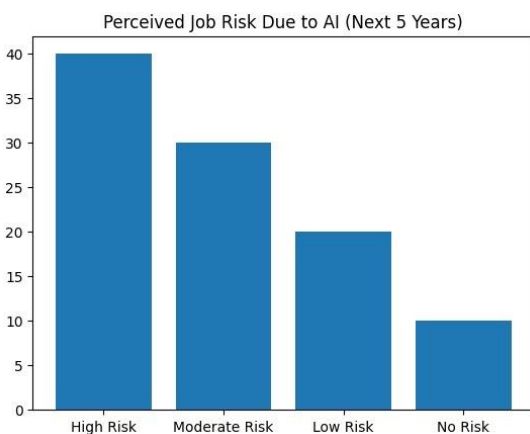


Fig 2: - Perceived job Risk Due to AI

3. Re-skilling Participation

Participation in Re-skilling Programs

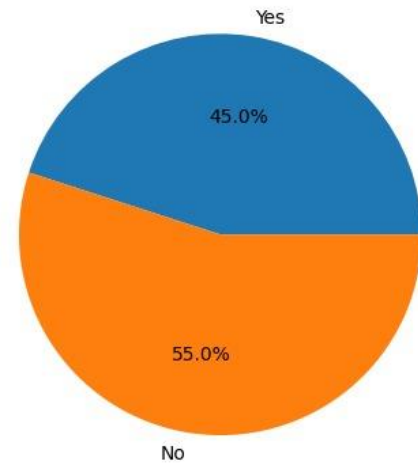


Fig 3: - Re-Skilling Participation

These results indicate that over half of the survey participants have not taken part in any process of re-skilling. This is an important point, given the realization of the possible hazards without making any effort to address them.

4. Barriers to Re-skilling

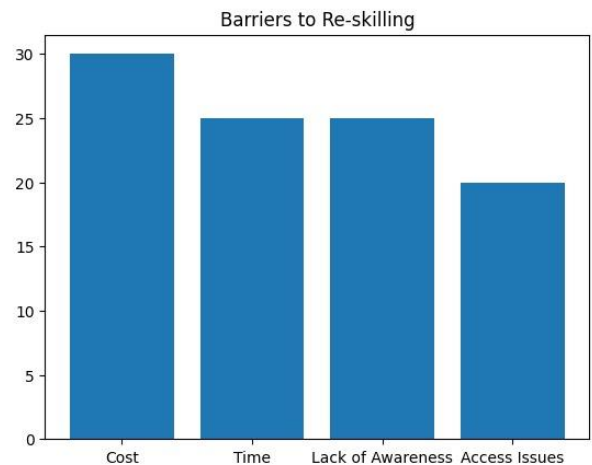


Fig 4: - Barriers of Re-Skillings

However, the major hindrances cited are cost, time limitations, and ignorance. This means that the problem does not lie on personal unwillingness but rather institutional problems that prevent people from accessing educational resources.

5. Responsibility for Re-skilling

Who is Responsible for Re-skilling?

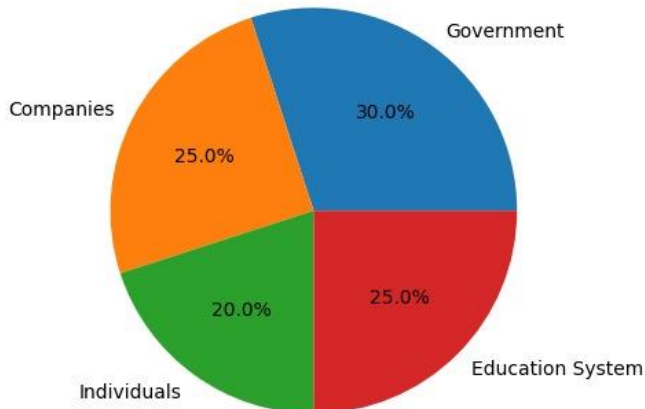


Fig 5: - Responsibility for Re-Skillings

A large proportion of participants agree that re-skilling should be backed up by governments and organizations. It indicates the overall tendency of expecting institutional participation in workforce development activities

Key Findings

Analysis of the survey data in conjunction with the findings from existing literature provides valuable insights that add to the understanding of the social consequences of Artificial Intelligence with regard to job displacement and retraining programs [1],[4],[9]. While they point to the present reality of the situation, they also underscore the need to confront the issues that arise from it.

It has been found that artificial intelligence is currently affecting the dynamics of work, especially in jobs that involve monotonous tasks [1],[13],[17]. As seen from the findings obtained through the survey, a substantial number of the surveyed individuals have had adverse experiences related to artificial intelligence, while a minority of them had positive experiences. Therefore, it can be inferred that for the time being, the adverse aspects of AI outweigh its beneficial features. Even though artificial intelligence offers new

prospects, these prospects are not immediately available to those affected by them [5],[10].

Another important discovery is that there exists a widespread feeling of job insecurity. It means that a significant portion of those interviewed think that their jobs are in danger. This finding shows even greater discrepancy with reality, as the reported job loss rate is significantly lower than the number of those who feel insecure regarding their jobs. The perception of job insecurity may have negative implications in terms of decision-making, job satisfaction, and psychological well-being [20],[21]. The third important finding is related to the gap between awareness and readiness to act. Although respondents are well aware of the importance of re-skilling, only 44% of them took any actions in order to get new skills. This finding is one of the most important, as without any action to address the skills mismatch problem, people may be left unemployed or underemployed for prolonged periods [6],[9],[11]. There exist several factors hindering individual engagement in re-skilling activities. These factors include cost of courses and trainings, lack of time, and lack of awareness [8],[18].

Time constraints are also another major factor, especially among working professionals who may struggle to combine their job requirements with education [18]. Furthermore, the lack of knowledge about the available options also hinders participation. This shows that the issue here is not a matter of lack of willpower but rather a lack of adequate systems. Lastly, there is the issue of institutional responsibility. The respondents feel that there should be a duty on the part of the government and organizations to assist in acquiring new skills. This shows that people understand that they have their limitations and need assistance when dealing with the ever-evolving job market [6],[8],[9]. In conclusion, the findings show that the issue of re-skilling should be taken seriously. It proves that it is imperative for the continued functioning of the economy and society at large [9],[11],[22].

V. PROBLEM IDENTIFICATION

Time issues have also been found to be relevant, especially those faced by working professionals who struggle to combine their work with learning [18],[25]. Moreover, ignorance about the potential possibilities of opportunities serves as another limitation [11]. All these limitations reflect the fact that the problem does not merely relate to motivation but also the absence of an enabling environment [6],[8]. Lastly, the results have shown that there is an understanding among respondents of the need for institutional responsibility. The government and other institutions must assume an important role when it comes to helping people develop new skills and become more

proficient in them [6],[8],[9]. This shows the recognition of individuals that self-study can go some way but requires structured interventions to meet the requirements of the labour market [11],[22].

Also noteworthy is the problem of inadequate institutional structures, which is another key issue identified in the research. Governments and organizations have a critical role to play in facilitating the process of workforce development but often fall short of doing so properly [6],[11]. For example, educational and employment policies are frequently not in sync with advances in technology [11],[22]. Moreover, there are some organizational priorities that may focus on increased productivity rather than investing in the development of employees [10],[23]. Such an attitude prevents efficient implementation of various training programs and makes workforce re-skilling impossible [8],[18]. Another type of barrier is psychological, as the fear of job loss may prevent individuals from acting in response to changes in the workplace [20],[21]. People may be worried about the rapidly changing technological environment and lack confidence in their abilities to develop new skills. Such concerns prevent them from acting upon the problem [18]. Finally, there is the issue of lack of awareness and guidance. In the rapidly changing labor market, people may be unaware of the skills required for employment and how they could acquire these skills [11],[25].

It is important especially for the students and young workers who are not familiar with the dynamics of the industry [9],[11]. In summary, the issues highlighted in this research reflect the difficulties faced in transforming the workforce during the age of AI [4],[6],[9]. This shows that the problem of job displacement does not simply hinge on technology but involves a range of issues [1],[4],[20].

VI. DISCUSSION

The outcomes and discoveries made in this study contribute to a more profound analysis of the impact of Artificial Intelligence on employment at the societal level. The interpretation of the findings will be based on the connection with the current body of literature and their meaning in a broader sense [4],[6],[9].

One of the key aspects of this study is the fact that AI can be considered as both a disruptor and an enabler [3],[16],[28]. Although AI is capable of increasing productivity and offering new chances, the impact it has as a disruptor becomes apparent for individuals first [5],[10]. People who find themselves displaced by technology or whose jobs become changed by it have to go through a period of instability and insecurity, which may affect them psychologically and financially in the long run [20],[21].

The difference between perception and reality is another crucial dimension of this discussion. According to the survey results, people perceive the risk of losing their jobs due to AI technology at a much higher level than the real impact. Thus, fears and uncertainties are likely to be one of the main determinants of people's attitude towards artificial intelligence [1],[20]. While it is necessary to take possible threats into account, it is also important to ensure people are provided with accurate information and a balanced perception of AI impacts on their lives [6],[9]. Additionally, the need for re-skilling stands out as another important finding of this research. Despite people being well-informed about the risks of losing their jobs, only a small proportion of respondents engage in re-skilling programs [8],[9],[18]. This discrepancy reveals a key paradox: people who perceive risks as high refuse to take appropriate actions. At the same time, it seems unreasonable to blame employees directly for this outcome since it may reflect more complex problems.

There is a need for collaboration among governments, organizations, and educational institutions to foster a learning ecosystem [6],[8],[11]. For instance, governments may offer financial support to ensure adequate funding, organizations will have to develop their own programs aimed at training employees while institutions can design relevant curriculum for the purpose of acquiring new skills [9],[22]. Failure to cooperate will result in a fragmented approach to tackling the problem of skill gap [11]. Another key point brought up by the discussion is that there should be a paradigm change on how we view career. In the rapidly evolving labor market, the notion of having a job for life becomes less applicable [20],[26]. The need of the hour is a mind-set of lifelong learning whereby continuous improvement of skills is an essential part of professional development [18],[22],[25]. Overall, through the discussion, it becomes clear that AI-driven transformation is a multifaceted issue which calls for a holistic approach taking into consideration the interplay of various factors including technological and human factor [4],[6],[15].

VII. PROPOSED FRAMEWORK

As for the findings and discussion of the research, they have helped in developing a conceptual framework for understanding the dynamics between Artificial Intelligence, Job Displacement and Re-skilling and the crucial need for the latter in order to maintain employment stability [4],[6],[9].

A conceptual framework for the study might be presented in the following way:

AI Advancement → Job Displacement → Skill Gap → Re-skilling → Employment Stability

Stage One, which may be named 'AI Advancement', entails all changes in employment patterns due to the introduction of technological progress in the field of artificial intelligence [3],[15],[28]. These changes are associated with automation and improvements in efficiency through the introduction of new technology [16],[23].

Stage Two, which should be referred to as Job Displacement, takes place as a response to the advancement of artificial intelligence, and involves changes in employment patterns, in particular job loss due to increased automation [1],[13]. However, one should bear in mind that such displacement is rather temporary than final as people change their jobs rather than lose them entirely [2],[5].

Stage three – Skill Gap, reflects the lack of alignment between skills of workers and job demands in a constantly developing labour market [18],[25]. It is an important issue since the success in coping with it defines whether a person will manage to adapt to a new role. A skill gap often becomes an obstacle for people seeking employment and may result in inequality and economic insecurity [11],[20]. The fourth stage is Re-skilling and represents the means of transitioning from one situation to another one, i.e., it bridges disruption and adaptation [6],[8],[9]. At this stage, a person obtains new skills that become appropriate to new job demands. The significance of this stage is obvious since it gives workers an opportunity to adapt to changes in their job environment and to remain in the labour force [22],[25]. Finally, stage five, which is Employment Stability, is considered to be the desired goal of the framework. When people acquire new skills through re-skilling, they have a chance to cope with changes and become employed at new jobs [5],[9],[11].

Recommendations

The problems highlighted in this study necessitate a holistic and coordinated approach to finding the appropriate solutions. The following section offers recommendations to various stakeholder groups, pointing to the need to cooperate to solve the workforce transformation problem [6],[9],[11].

Government Level Recommendations

The government can make a difference by offering relevant policies and allocating the necessary resources in the area of workforce development [6],[11]. One of the recommended actions involves launching government-sponsored re-skilling initiatives to make training opportunities available to a larger number of people [8],[9].

Financial assistance can go a long way in lowering the barrier of costs and increasing participation [11]. Also, there are recommendations related to the launch of AI literacy campaigns aimed at informing people about the implications of the new technologies and the necessity to re-skill [12],[22].

It is vital to consider the importance of launching public-private sector partnerships [6],[9].

Industry-Level Recommendations

Organizations play a significant role in workforce development and should bear the responsibility of training employees [10],[23]. Organizations should put in place internal upskilling initiatives through which employees acquire additional skills as they work [5],[18]. This not only boosts efficiency in organizations but also ensures the retention of staff [10].

Moreover, organizations should embrace a long-term approach by putting in place transition systems for employees. These systems assist workers in the process of transitioning into new positions [4],[23].

Education System Recommendations

The education sector needs to evolve in order to respond to the changes in the labour market [11],[22]. Education should incorporate elements such as artificial intelligence and digital skills among others [15],[25].

Education institutions should also advocate for the idea of lifelong learning as part of the new approaches in the education sector [18],[26].

Personal Level Recommendations

Individuals are required to be proactive in developing themselves through a constant learning approach [18],[22]. It entails keeping oneself up-to-date with industry developments and developing new skills [25],[27].

Furthermore, individuals can use various Internet-based sources to improve their knowledge and capabilities. Although the help of institutions may come in handy, individuals have to work on their end too [9],[26].

VIII. CONCLUSION

However, Artificial Intelligence is changing the face of labor around the world, and although it brings about some fears concerning loss of employment, it can also be seen as a great opportunity [4],[5],[9]. It appears, therefore, that the real challenge does not lie in the issue of job displacement per se but rather in people's readiness for change [6],[8],[11].

From the findings of the survey conducted as part of this research, it becomes evident that there is a gap between individuals' willingness to address the issues related to the introduction of new technology into the labor market and actual actions to acquire new skills.

It is apparent that although many people are concerned about the changes brought about by new technologies and their potential influence on job markets, there is little being done to learn new skills required to adjust to such changes [18],[25]. In conclusion, it can be said that in the era of new technological advancements like Artificial Intelligence, the survival of workers will depend on their ability to adapt to the changing conditions [22],[26].

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