

The Paradox of Leisure in the Age of AI: Impacts on Work, Inequality, and Well-being

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Abstract. Keynes once predicted that with the development of technology, the future will definitely be an era of leisure. But with the development of AI and other technologies, the era of leisure has not arrived. This article analyzes the impact of technological advancements represented by AI on individual leisure time from the perspective of social equity, unemployment rate, and psychology, starting from reality. This article argues that the advancement of AI technology may not necessarily bring leisure to everyone, but rather may reduce the leisure time of some populations. To solve this problem, the government and enterprises must intervene in advance to clarify the purpose of AI development, so that technology can better improve the well-being of all humanity.

Keywords: AI; Leisure; Well-being.

1. Introduction

Labor is often considered the most important way for people to realize their self-worth. However, from a practical perspective, labor is a burden for individuals, so from an economic model, labor, or work, requires monetary compensation. Outside of working hours, it is generally referred to as leisure. Leisure, in many economic models, acts as a counterbalance to labor, offering a measure of the intangible values that contribute to societal and individual happiness. John Maynard Keynes (1930) predicted an 'age of leisure,' where technology would surpass human productivity, freeing individuals to pursue personal interests. As artificial intelligence continues to transform the labor market and gradually outperform human productivity, attracting employers, the arrival of the era of immense productivity that Keynes spoke of seems almost within reach. However, a growing body of evidence suggests that the rapid proliferation of AI may paradoxically infringe upon leisure in the short term rather than augment it. By identifying these potential threats to leisure in the AI era, this paper endeavors to provide valuable insights to optimize the deployment of artificial intelligence in a way that genuinely augments human leisure and well-being, instead of inadvertently diminishing it.

2. Amplifying Inequality: The Paradox of Leisure in the AI Era

Keynes' vision of Leisure was not confined to a select few privileged classes but extended to a broad spectrum of society. He asserted that most people, equipped with efficient tools of production, could enjoy leisure—a widespread augmentation of leisure time across all strata. It is easy to understand. Due to the development of technology, social productivity will gradually increase, and the quantity of products that workers can produce per unit of capital investment and per unit of time will increase with the continuous improvement of technology. From the perspective of factory owners, due to the improvement of technology, the labor required to produce unit products has decreased. This means that technological upgrading can reduce the proportion of labor in unit products, and the management of workers by factory owners will be easier. After all, production through Ai is inevitably less difficult to manage than production through workers. From the perspective of workers, due to the improvement of technology, each worker can produce more products, which means that their relative wages will be increased. Each worker only needs to work less time to receive the same compensation as before, and workers can have more time to enjoy leisure.

However, the Cobb-Douglas production function (Cobb & Douglas, 1928) highlights the possibility of exacerbating wealth and income inequality, presenting a broader and more significant crisis during the AI development. From the perspective of the Cobb Douglas function, an increase in

the importance of technology will lead to a decrease in the relative rewards that labor can obtain, or from another perspective, an increase in technology will lead to a decrease in the amount of labor required per unit of product. Both of these aspects may lead to a change in the relative status between capital owners and labor providers.

From a macro perspective, the development of AI will change the relative position of different countries in international competition. Developed countries are likely to reduce their reliance on their domestic labor force and natural resources, which could weaken the advantages of developing countries that heavily rely on resource exports and cheap labor in international trade. Conversely, less equipped to harness the economic dividends from AI enterprises, these developing countries find themselves more vulnerable to the adverse effects of AI-driven labor displacement, thereby amplifying internal competition.

This shift is not only a macroeconomic phenomenon but also resonates at a micro level. Due to the continuous development of AI, people find that their work is constantly being replaced by AI. The escalating displacement from employment attributed to AI (Elliott, 2023; Zinkula, 2023) acts as a stumbling block for the middle class's upward social mobility (Francken & Van Raaij, 1981). This phenomenon triggers heightened apprehension, propelling individuals to immerse themselves deeper into workforce competition, sometimes even resorting to low-skilled occupations, as a defensive strategy against looming uncertainties. This downward job shift, exemplified by professions like taxi driving, intensifies competition in the low-skilled labor sphere, burdening those traditionally in these roles. Unfortunately, the vast majority of workers are actually engaged in traditional jobs, and AI's replacement for them will be low-cost and accessible. As a consequence, these individuals might find their leisure moments further curtailed. Current trajectories suggest that the increased leisure remains a distant dream for a vast majority. Far from realizing an epoch of liberation and leisure, the AI surge might magnify competitive pressures in the workforce and exacerbate class distinctions.

3. The Complex Path to AI-Induced Leisure: Human Needs, Universal Basic Income, and Economic Dynamics

According to Keynes, as human needs are increasingly met by escalating levels of productivity, people can derive the essential material resources from minimal work hours. The remaining time then transforms into leisure time. One of the prerequisites for the advent of the 'age of leisure' is that human needs can be effortlessly fulfilled (Keynes, 1930). However, Keynes ignores the fact that it is nearly impossible to fulfil the need of an individual. Even theoretically, models such as the mathematical property of local non-satiation in the utility function and the law of diminishing marginal utility points out that it is impossible for an individual to have nothing better to seek for (Pettini & Musikanski, 2023) and individuals will get harder to satisfy as they gain better goods for every good. It is thus a human nature to always seek better material life. When people's material needs are met in the present, they will begin to hope for more and higher things, meaning it is impossible to fulfil all the needs of an individual and allow them to enter an 'age of leisure'.

The premise of an AI-induced leisure era is predicated on the theoretical framework of universal basic income (UBI). This paradigm intimates a vision of the future where individuals, particularly those previously embroiled in the struggle for basic survival, could be extricated from the obligations of labor (Maura Francese & Delphine Prady, 2018). Although AI can catalyze productivity and wealth expansion, it does not inherently ensure the efficacy of UBI, which crucially hinges on balanced resource allocation. The redistribution of surplus from AI-driven industries requires a judicious balance of social equity, policy design, and economic principles. It necessitates the careful direction of funds to those in need, without fostering dependencies or disincentives for work, involving nuanced understanding of societal dynamics (Bidadanure, 2019) and deft navigation of regulatory and ethical intricacies. If mishandled, it may discourage labor and productivity, endangering long-term economic growth.

4. AI Disruption and the Evolving Notion of Leisure: Struggles for Self-Esteem Amid Technological Unemployment

Keynes' vision of leisure extends beyond the mere absence of work, encompassing the pursuit of esteem and self-actualization. For this vision to materialize, individuals need sustainable jobs that fulfill their materialistic needs, allowing them the time to pursue higher-level aspirations (Churcher, 1991). However, the proliferation of advanced artificial intelligence, particularly generative AI models, is reshaping the job landscape in ways that challenge this notion. From a technical perspective, the continuous development of artificial intelligence means that more and more specialized jobs will gradually be replaced by machines, and the professionalism of work, or professional barriers, was once the core of workers' recognition of their work, that is, they believe that their work is a reflection of their own value. Occupations once central to workers' self-esteem are now vulnerable to AI's disruptive influence, leading to widespread technological unemployment.

% of AI users, by interaction with AI and change in own work autonomy

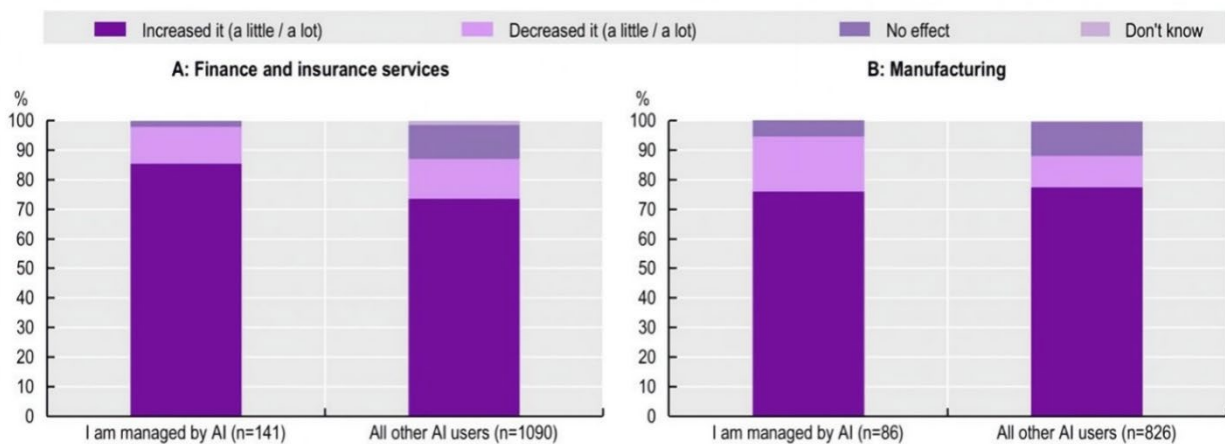


Figure 1: Algorithmic management impacts subordinates' sense of control over their tasks

As AI infiltrates workplaces, the phenomenon becomes tangible workers begin to feel overshadowed by the capabilities of AI, leading to existential crises involving the loss of life's purpose and self-worth. Even in cases where companies propose AI-human collaboration, as shown in Figure 2 (Lane et al., 2023), the OECD Employment Outlook 2023 suggests that while AI automates repetitive tasks and supports decision-making, it does not necessarily create an equivalent number of meaningful tasks (OECD, 2023). This brings into question the future quality of jobs and its alignment with the concept of leisure as the pursuit of higher-level needs.

Granted, ideas such as the "reinstatement effect" posits that AI will generate new jobs (Lu & Zhou, 2021). Just as the emergence of cars replaced grooms, but created the profession of drivers. But historical experiences, such as the dehumanizing effects on assembly line workers, underscore potential declines in job quality. This decline translates into diminished opportunities for creativity, erosion of professional identity, reduced autonomy, and even fundamental reevaluations of life's meaning. Such outcomes stand at odds with the essential essence of leisure—an avenue for the pursuit of self-esteem and self-actualization.

5. DISCUSSION

As mentioned earlier, the trajectory of AI advancement seems unlikely to usher humanity into a leisure-centric era.. On the contrary, paradoxically, as AI continuously weakens the importance of employees in their growth, AI continuously reduces the necessity of employee participation in the production process, which leads to stress among employees. In order to ensure their work, workers force themselves to work harder, but this leads to a decrease in their job satisfaction, job recognition, and personal self-esteem. This concerning trend is a harbinger of potential unemployment surges,

increased job competition, exacerbated wealth inequality, and the emergence of mechanized, dehumanized labor. Nevertheless, this impending challenge of AI-driven unemployment also presents an avenue for preemptive interventions. Governments, through their support to the middle class and the reinforcement of social welfare structures, can help mold a future that curbs disparities and fosters equity. Simultaneously, businesses must exercise ethical prudence by integrating AI as a tool to amplify human capacities rather than eclipse them. Through these concerted efforts, a future that genuinely enhances human well-being and upholds the fundamental dignity of labor can be realized within the burgeoning AI landscape.

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