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Research Article

Artificial Intelligence's Effects on Enhancing Productivity

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Abstract

The primary issue of this study was to explore the effect of AI integration, user interface, user experience and quality on the productivity of the employees working in MSMEs in Ethiopia. The aim of this investigation was to assess the impact of artificial intelligence (AI) on employee productivity in Ethiopian MSMEs. It assesses AI implementation, integration, user experience, satisfaction, and perception of AI's effect on job performance, efficiency, and overall productivity, addressing a lack of empirical evidence in the region. The information was gathered using five-point Likert scale questionnaires, which were collected online. The sample size for the study was 185. The data was analyzed using SPSS software. To explore the direct effect, indirect effect, and total effect of moderating variables, it used a process tool in NCSS 2023. The findings revealed that quality and AI integration had positive and significant effect on productivity whereas AI user experience and user interface had insignificant effect on employee productivity. The positive correlation between AI integration and productivity signifies the need for organizations to embrace seamless AI adoption. By integrating AI effectively into their workflows, they can streamline processes, harness data-driven insights, and ultimately enhance productivity. To optimize productivity, organizations must ensure that their AI models are continually refined to deliver precise and reliable results. Investing in AI model development, validation, and ongoing improvement processes is crucial in this regard.

Keywords: AI; AI Content Quality; AI Integration; AI Interface; AI User Experience; Productivity

Introduction

Artificial Intelligence is the simulation of human-like intelligence in machines implemented by defining specific tasks, collecting and processing relevant data, selecting appropriate AI models, and integrating them into systems. Artificial intelligence (AI) frequently seen as a novel general-purpose technology that has applications across a wide range of industrial sectors and is being used quickly, deeply, and extensively. Previous studies discovered that strong and positive correlations (sales-based and value-added-based productivity measures) between AI adoption and business productivity (Dirk Czarnitzki, 2023). Because comparing the quantity of goods and services produced (output) with the quantity of inputs required to produce them, productivity is a metric used to assess economic performance. This re-search sought to investigate the connections between labor productivity, job employment, and economic development on the one hand, and digital transformation on the other.

According to a recent study on the effects of generative AI on highly skilled workers, workers' performance can increase by up to 40% when artificial intelligence is applied within the bounds of its capabilities.

Over a ten-year period, AI could increase the growth of labor productivity in the US by 1.5 percentage points. Naturally, a number of variables will affect this, including the strength of the upcoming AI generation, the complexity of the tasks it can accomplish, and the quantity of jobs it replaces. Compared to humans, computers are capable of processing far more information more quickly. Artificial intelligence is able to solve ten mathematical problems in one minute, whereas the human mind can solve one problem in five minutes. The benefits include, but are not limited to, streamlining, time savings, bias elimination, and task automation. The drawbacks include things like expensive implementation, the possibility of eliminating jobs for people, and a lack of feeling and originality.

AI technologies are quickly maturing as a viable means of enabling and supporting essential business functions. But creating business value from artificial intelligence requires a thoughtful approach that balances people, processes and technology.

AI comes in many forms: machine learning, deep learning, predictive analytics, natural language processing, computer vision and automation. Companies must start with a solid foundation and realistic view to determine the competitive advantages an AI imple-

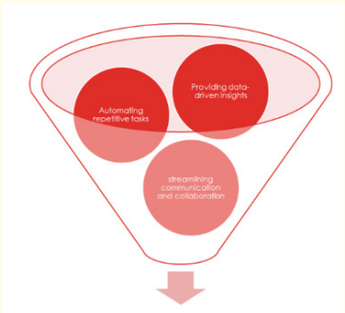

Figure 1: Triple factors.

mentation can bring to their business strategy and planning. According to John Carey, managing director at business management consultancy AArete, "artificial intelligence encompasses many things. And there's a lot of hyperbole and, in some cases, exaggeration about how intelligent it really is".

The contribution of this study was explore the direct effect, indirect effect, and total effect of moderating variables, it used a process tool in NCSS 2023.

Literature Review

Recent years have seen a rapid development of artificial intelligence (AI), a technology that has shown enormous promise and is being embraced by society in a variety of contexts. Artificial Intelligence (AI) holds great potential to impact economic growth, productivity, and sustainability as its applications grow. AI, considered one of the most advanced categories of technology, is expected to play a key role in influencing economic sustainability. Scholars express confidence that the application of Industry 4.0 and related digital technologies will have a positive impact on sustainable development. Productivity has always been a crucial indicator of an economy's potential for achieving sustainability. Economies with higher productivity are more likely to sustain long-term economic growth, while firms that exhibit greater productivity tend to have a higher survival rate compared to less-productive counterparts.

The calculation method of this indicator is shown in Equation (1), where Len (MD&A) represents the length of the MD&A paragraph, and AIbasic and AIapplication represent the word frequencies in the basic layer and the application layer, respectively. This is a positive indicator, where a higher value indicates a greater level of AI penetration in the firm.

$$\text{AI density} = \frac{AI_{basic} + AI_{application}}{\text{Len (MD\&A)}} \quad \ldots\ldots(1)$$

The combination of significant labor cost savings, new job creation, and a productivity boost for non-displaced workers raises the possibility of a labor productivity boom like those that followed the emergence of earlier general-purpose technologies like the electric motor and personal computer were past experiences offer two key lessons.

Academic studies confirm that workers at early-adopting firms experience higher labor productivity growth following AI adoption, with estimates generally implying a 2-3pp/year boost. Matching our occupation-level estimates to the European ISCO occupation classification system and performing a similar exercise for the Euro Area using the Eurostat Labor Force Survey (LFS) database yields estimates of a similar magnitude, both in aggregate and across industries.

It examine the probable impact generative AI will have on the labor market if it fulfills its promised capabilities in order to gauge the magnitude of these effects (al J. H., 2023). Both capital deepening and total factor productivity (TFP) growth lead to labor productivity growth, and both seem to be playing a role in the slowdown (Fernald 2014; OECD 2015). Disappointing technological progress can be tied to each of these components. Total factor productivity directly reflects such progress. Capital deepening is indirectly influenced by technological change because firms' investment decisions respond to improvements in capital's current or expected

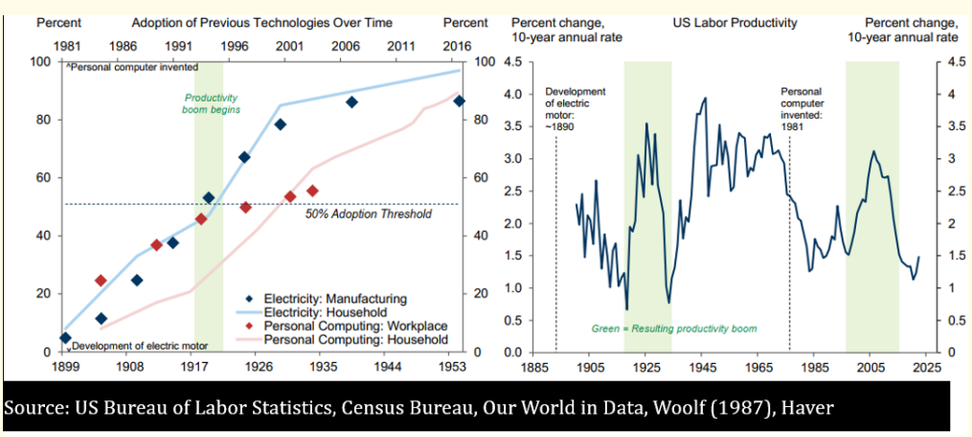

Figure 1: Triple factors.

marginal product. There are four principal candidate explanations for the current confluence of technological optimism and poor productivity performance: (a) false hopes, (b) mismeasurement, (c) concentrated distribution and rent dissipation, and (d) implementation and restructuring lags.

The impact of these significant changes on the way the economy operates has been a major concern for economists and policy makers in the era of the Fourth Industrial Revolution, Artificial Intelligence, and Digital Transformation. In particular, those adjustments are anticipated to have an impact on labor productivity, employment rates, and the economy's rate of development. Some people's lives can be made easier by digital transformation, while others may find it more difficult. It has the potential to accelerate economic growth, but it also has the potential to impede it in the absence of the proper framework for its integration. The effects are still unknown and will depend on a variety of variables, such as the degree of development, the duration of unemployment, the size of the population, and the caliber of human and material capital.

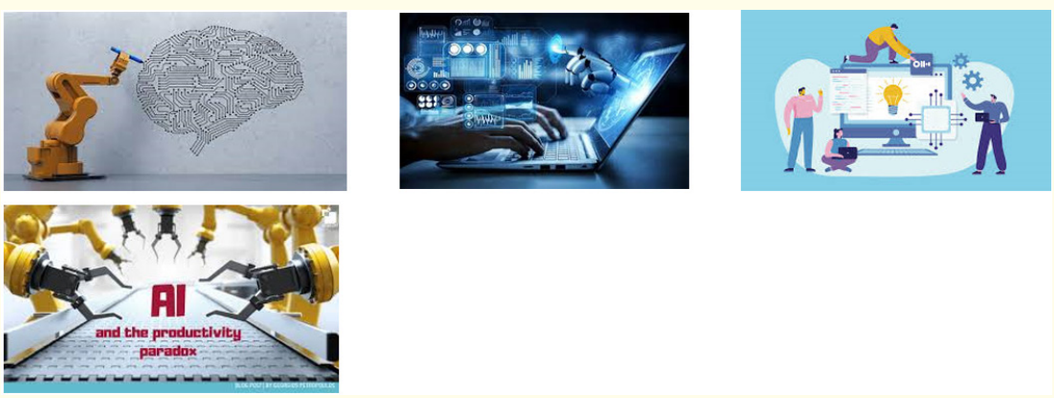

Figure 3: The secret of AI to productivity.

Methodology

A qualitative research design used in this work. Based on the material conditions that participants engaged in an interpretivist exercise, the research philosophy for this paper was developed. Because participants in the exercise developed their ideas based on their personal experiences, the research paradigm used was social constructivism. This led to a dialectical research approach in which participants' subjective reflections and ideas about the structural limitations on gender roles and the potential for human agency to socially transform gender roles were shared with the objective social reality and experiences of the exercise. The research participants came from a variety of professional, national, religious, and cultural backgrounds.

The study location was a rural village in South West Ethiopia. The people who live in SWE were included in the research population. The convenience and non-random purposeful sampling used for the qualitative analysis was based on the volunteers who agreed to take part in the event. The plenary workshop, share-pair dialogue, and focused group discussions (FGD) were the research data collection methods used to gather the information used in this article.

The activity could only take place over the course of one full day. The data collected from people regarding their opinions on AI roles in the home, community, and workplace within society at large made up the unit of analysis for this study. The participants were analyzed at three different levels: 1) micro, or the individual level; 2) meso, or the relationship between the participants and their professions; and 3) macro, or the society as a whole. Data organization, thematic analysis, categorization, and coding served as the foundation for data analysis. Regarding ethics, all attendees of the event were given pseudonyms to maintain their privacy and anonymity.

Findings

To respond to this query, basic information about the focused group discussion documented here. The event from which the data The activities took place for one whole day on Tuesday, November, 2023. The activities included plenary workshop discussions, focused group discussion, and rotating share-pair with different partners throughout the day.

Overall, there were 185 participants, from six zones of the region. See Table 1 below.

The program was integrative, as it seeks to situate the individual in the larger technological context for bringing about productivity through AI. The members of this group were composed of women and men who were of diverse national, cultural, and religious heritage and origins. The facilitator of this gathering was a Christian and Muslim followers. For this round of activities, her was ground-

Number of Participants	Zones of the SWEP Region	% of Female participant
52	Kaffa	35
32	Sheka	56
32	Bench Sheko	29
13	Dawro	80
34	West Omo	76
22	Konta	43
185		54.1%

Table 1: Respondents distribution per zones of the region.

Source; Author of the article.

ed in the core values of AI and Industrial Productivities. These principles are enacted Artificial Intelligence is being used to boost productivity and enhance output in areas like data, administration, and recruitment as a result of the rapid advancement of technology. Table 1 results showed that strongly agree for the impact of AI to Ethiopian industries productivity were 76.9%, 23 agree, while the rest belongs to neutral.

AI can free up staff time to work on more interesting tasks by automating repetitive tasks. Additionally, companies that may have missed patterns and trends using traditional methods can benefit from the use of smart algorithms. The potential of AI to increase productivity and lower labor costs is examined in this article. By streamlining repetitive processes, finding patterns in massive data sets, and enhancing communication, artificial intelligence (AI) can boost productivity. Here are a few examples of how AI can increase the productivity of your company.

Automating Daily Jobs, insights and data analysis, Personalized Customer Experience, Analytics that predict, Improved Sales and Marketing, Optimization of Processes, Assurance and Control of Quality, and Control of Risks.

They were two sides of the same coin. Access to them or having the socially preferred attributes increases one's power. Denied access to them or not having the socially preferred attributes increases one's oppression These sources include in alphabetical order the following: abilities, age, class, color, culture, education, ethnicity, experiences, gender, information access, institutions, intelligence, knowledge, networks, positions, race, relationships, sex, skills, and weapons possession. Organized differently, sources of power include access to decision making positions, access to opportunities, and access to resources, economic independence, educational attainment, knowledge base, networks, and social influence.

What Are the AI Factors that Contribute to Productivity?

Two key factors are how artificial intelligence increases workplace productivity: time savings and error reduction. It implies that people can complete their lists of easy, everyday tasks faster and with fewer errors. For the past few decades, technology has transformed both the way humans and businesses operate. While it has consistently improved business efficiency, there are certain disadvantages as well. When making operational decisions, business leaders must take a variety of factors into consideration because these can either positively or negatively impact a company's bottom line. One way to maximize productivity is to streamline processes and adopt new technologies, such as cloud computing, social media, IoT, mobile technology, artificial intelligence (AI), and other cutting-edge technological tools and services like software that can raise productivity by using a goal-setting framework to define and monitor measurable objectives. Nonetheless, in order to make adjustments with the technology, business executives must determine which aspects of it are most appropriate for their operations.

What Strategies implemented to Promote Productivity?

- The best methods for raising corporate output
- Keep things easy.
- Make a note of it.
- Check your goals every day, or at least often.
- Cut down on time-consuming activities.
- Make use of productivity apps.
- Encourage your group.
- Steer clear of multitasking.
- Provide a wellness initiative. See Figure 4 below.

Figure 4; Setting aside specific time slots for concentrated work may surprise employees with a quick productivity boost. An illustration of this in action would be if a worker dedicated the first two hours of their workday to a particular project for a week. List the things you do that genuinely lead to quantifiable outcomes, and devote eighty percent of your time to these activities. Set aside the remaining twenty percent of your time for high-pressure tasks like answering emails and returning calls. Setting priorities helps to ensure that the most important tasks are completed [1-7].

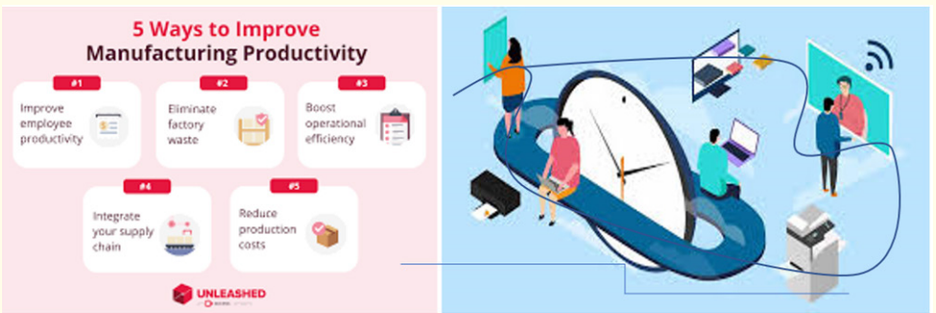

Figure 4: Factors that trigger and promote Productivity in industries.

Conclusion and Recommendation

Simplifying, saving time, getting rid of prejudices, and automating monotonous work, to mention a few. The negative effects of AI include loss of jobs or displacement of existing ones, ethical issues with bias and privacy, security risks from hacking, expensive implementation, and a lack of empathy and emotion that distinguishes AI from humans. According to a recent study on the effects of generative AI on highly skilled workers, workers' performance can increase by up to 40% when artificial intelligence is applied within the bounds of its capabilities. Businesses that have incorporated AI into their operations have seen significant increases in profitability and productivity. While AI does repetitive tasks, people can focus on more complex challenges. Thus, an AI-enabled company will become more humanistic. As a result, an AI-enabled company will become more humanistic.

In conclusion, artificial intelligence has a promising future. We must continue to consider the effects of this technology as society adopts it and seek to resolve the issues that arise as it develops.

In this research, there are implications to several stakeholders. One of the hottest topics in business right now is artificial intelligence, and there are many conjectures about what it might bring about. According to consulting firm PwC, artificial intelligence (AI) might boost global GDP by almost $16 trillion by 2030. McKinsey, a consulting firm, projects $13 trillion during that same period. You can argue about a few trillion dollars all you want, but the fact remains that artificial intelligence (AI) will be a significant technological advancement that companies must use to remain competitive. It could have a significant effect on numerous industries, such as: Knowledge workers can increase their productivity by using AI to automate repetitive tasks. Using current AI solutions, it is estimated that 60% of the work performed by salespeople during the sales process can be automated. About 52.1% of American workers, according to a Likert scale, don't interact with their jobs. AI can be used in creative ways to enhance this through real-time analysis. For instance, a business might use AI to examine sporadic emails exchanged among staff members and generate a broad assessment of morale. Equipped with current insights, management can deal with troublesome issues before they worsen. One of the sectors that AI affects the most is the financial sector. Financial institutions are able to make better decisions by using applications like AI-enabled enterprise software, automated machine learning, and data science modeling tools.

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