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ARTIFICIAL INTELLIGENCE AND AUTOMATION: AN ANALYSIS OF THE LITERATURE ON INNOVATION AND PRODUCTIVITY

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Abstract

This article analyses the existing literature on the impact of artificial intelligence (AI) and automation on innovation and productivity. With the increasing adoption of these technologies across sectors, there has been a significant shift in the way business operations and strategies are conducted to achieve higher efficiency and develop new products and services. On the other hand, the article also highlights the challenges that need to be overcome, including potential disruptions in the labour market and the need for retraining of the workforce. Through comprehensive analysis, the paper offers insights into how AI and automation can be maximised to drive economic growth while ensuring social welfare.

Keywords: Artificial Intelligence, Automation, Innovation and Productivity

Introduction

The development of information technology in recent decades has brought significant changes in various aspects of human life. One of the most impactful technological innovations is Artificial Intelligence (AI). AI refers to computer systems that are capable of performing tasks that normally require human intelligence, such as speech recognition, decision-making, and learning (Bollineni ., 2024)

From a concept in a research lab, AI has evolved into a technology that can be widely implemented in various commercial and industrial applications. Modern AI involves the use of machine learning algorithms that allow computers to learn from data and perform tasks that would normally require human intelligence. Examples of applications include speech and image recognition, natural language processing, and decision-making. Leaps in computing capabilities and the availability of abundant data have been major catalysts for the advancement of AI, allowing the technology to develop at an unprecedented pace (Zhang, 2021) .

In line with the development of AI, automation has also undergone rapid development. Automation refers to the use of technology to perform tasks previously done by humans, often with greater speed and accuracy. It covers a wide range of domains, from automation in manufacturing using industrial robots to business process automation with software systems such as RPA (Robotic Process Automation) (Xu, 2021) . Automation not only helps in improving productivity and operational efficiency,