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DIGITAL TECHNOLOGY IMPACT ON GLOBALIZATION

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ABSTRACT

This article explores how globalisation affects the uptake of digital technologies. The purpose of the article is to make clear how globalisation affects the adoption of new technology. We use country-level data from the globalisation index (KOF), digital adoption index (DAI), global competitiveness index (GDI), and total factor productivity (TFP) on 183 countries using cutting-edge panel data modelling. Empirical data show that globalisation has a significant influence on how soon technology are embraced globally. The study's results show that globalisation benefits technology transfers and spillovers, especially when using digital technology. Digital technologies are being acquired by nations undergoing significant technological change at an increasing rate. Data from our study is based on a worldwide perspective, with a big sample of 183 countries that account for about 80% of the total.

INTRODUCTION

Globalisation has had a significant influence on every society. The primary driver of development has been the nations' economic growth. Technology has helped globalisation advance more quickly, and globalisation has continually pushed new technologies forward. Globalisation and technology now constitute one phenomenon. The development of digital technology has greatly facilitated globalisation. Digital technology advancements compel businesses to go global because they need bigger markets to attain economies of scale. Digital technology advancements reduce transportation and communication costs across countries and facilitate the global sourcing of raw materials and other inputs. It encourages globalization as the venture owning the patent can exploit foreign markets without much competitionThe definition of digital technology is digital devices, systems, and resources that help create, store, and manage data. An important aspect of digital technology is information technology (IT) which refers to the use of computers to process data and information.
Most businesses use digital technology nowadays to manage operations and processes and to enhance their service.

Exactly why is digital technology so crucial?

Most businesses use digital technology nowadays to manage operations and processes and to enhance their service. Every element of life has changed as a result of digital technology. Travel, employment, retail, entertainment, and communications are just a few of the industries that have undergone a global transformation in recent years. Nowadays, it's uncommon to come across an electrical gadget or piece of machinery that doesn't use digital technology.

Smart gadgets may now be smaller, quicker, lighter, and more adaptable thanks to digital technology. On a global scale, enormous volumes of information may be transported around almost instantly and stored locally or remotely. Large data files may now be sent across the web extremely instantly, streaming video and music in real time, and data can now be accessed from almost anywhere in the world. Even the phrase "information" has expanded this.

These are the seven effects of digital technology on globalisation.

Healthcare
The fundamental effect of digital technology on healthcare is that it has increased access to care for individuals and nations who may not otherwise have it or be able to pay it. New and advanced medications and treatments are being researched and developed on a massive scale internationally.

Additionally, it broadens knowledge throughout the world and promotes international cooperation. For instance, it has facilitated the development of new treatments as a consequence of improved knowledge of genetic abnormalities, novel infections, and chronic illnesses.

Farming and agriculture sector:

Due to the limited amount of agricultural land available globally and the scarcity of natural resources, the usage of digital technology inputs in farming and agribusiness has increased more than ever.

Digital technology has enhanced processes that result in profitable agricultural yields, anticipated farm input analysis, sensing and misuse of agriculture inputs, and rapid action for crop disease prevention in a variety of countries.

Education sector:

Due to its fundamental role in determining a country's level of development, digital technology has significant effects on education. New technology raises the degree of literacy in a State and expands career options, which ultimately benefits the nation.

Incorporating knowledge from both developing and developed nations, digital libraries, cognitive learning, web services, multilingual translation, and intelligent tutoring systems have all been developed.

Banking and Finance:

Digital technology has given banking and finance a number of advantages today, including the ability to virtually conduct all banking transactions online on a global scale and the ability to integrate all financial institutions, different currency transactions, investments, taxation, and business globally on a 24/7 basis.

Supply -chain

Another industry that has virtually integrated manufactured outputs, dispatch services, transportation, and custom and border administration services among suppliers and users of products and services across nations is supply chain management. Utilising digital channels for communication and transportation as well as widely used software application standards enables it.

Better data collection:

Data gathering and analytics across nations are optimised by digital technologies. Larger amounts of data can be processed or stored more quickly. quicker data analysis rates also imply quicker data transfer speeds. You improve your consumer insights to introduce customer-centric strategies for the development of nations.

Creates a Digital Culture:

Digital tools and technologies affect and shape the workplace that is created by digital technology. Most workers utilise digital technology to collaborate, develop, and provide consumers with access to goods, services, and support in businesses across nations with sophisticated digital cultures.

Review on globalization adoption

Divergences in technology adoption lead to differences in productivity and economic growth (International Monetary Fund, 2018). There is a sizable corpus of research on technology adoption models and factors. A manageable framework was created by Acemoglu, Antràs, and Helpman (2007) to examine how technological complementarities and contractual incompleteness affect the equilibrium technology choice.

The authors discovered that the impact of contractual incompleteness on technology adoption is more pronounced in those industries with more complementary intermediate inputs. In a horizontally distinct business with two alternative commodities market rivals, Cournot and Bertrand, Dastidar (2015) examined how enterprises were motivated to use cost-cutting technology. According to the authors, the price of purchasing new technology and its quality are not exogenous but rather rely on the outcome of the equilibrium scoring auction.

They define technology adoption as the act of a person, company, or other actor using new technology for the first time. In this setting, technology may indicate ground-breaking new goods, services, or management. The writers emphasised the importance of prices, benefits, communication networks, and complicated issues while implementing new technology by using examples from IT adoption. According to a Sadik (2008) study, high per capita wealth is correlated with strong institutions that lower adoption costs. The model demonstrates that whether an area is industrialised or not depends on the whole costs of introducing technology, including institutional and transportation expenses.

Methodology Specifics

This research examines the impact of digital technology on globalisation using data from Europe, Africa, and North America. In online government databases, the researcher located the DAI index, KOF index, and GCI index (Gygli et al., 2019; The World Bank, 2019; The World Bank, 2022). The parameters of the study are based on these indices. First, the DAI, or digital adoption indicator, measures how much a nation participates in various digital domains.

The World Bank 2022) combines Economic system = Businesses + Population + Authorities for over 180 nations. Gygli et al. (2019) claim that the KOF globalisation index rates the economic and social effects of globalisation. Over 40 contributing factors that cover economic, monetary, social, cultural, and governmental facets of globalisation are included in the KOF globalisation indicator for more than 200 countries.

Thirdly, the term "GCI" refers to the global competitiveness indicator, which measures a nation's distance from the competitiveness border (The World Bank, 2019). On a scale of 0 to 100, the index rates more than 100 factors for more than 140 nations, including institutions, infrastructures, technology adoption, economic sustainability, healthcare, education, market structure, labour force, banking sectors, market shares, and corporate vitality.

The researcher employed panel data modelling to investigate the statistics. The researcher might look at the global relationship between globalisation and technology adoption from the standpoint of panel data analysis. By avoiding naming specific countries or case studies, the aforementioned prevents the potential bias of a time-series data approach. Because panel data analysis needs a large number of statistics, there are only a few countries that can be selected based solely on the availability of data on digital penetration.

Finding and Results

This study discovered a significant relationship between the degree of globalisation and the use of contemporary technologies. This study predicts that the DAI index influences globalisation intensity as assessed by the KOF index and international competitiveness as evaluated by the GCI indicators. It does this using a randomised variables panel data model on the KOF index. The results of this study thus show a causal relationship between interstate rivalry and adoption as well as between globalisation and digitalization. Through the spread of digital technologies, globalisation continues to have a significant impact on global competitiveness and, in turn, creativity.

The broad adoption of digital innovation benefits countries that have seen large levels of globalisation by boosting their competitiveness, output, and creativity. The differences in globalisation across nations and the adoption of new technologies vary by country. This study offers convincing empirical evidence for the necessity of globalisation in the dissemination and acceptance of digital technology. The communication pathway between globalisation and the usage of digital technologies in the corporate sector has to be looked into and understood further.

Globally integrated nations benefit from widespread adoption of digital innovation, which raises their level of productivity, creativity, and competitiveness. Similar to how different countries have experienced globalisation, there are differences in how new technologies are being adopted around the globe. This study provides strong empirical support for the idea that the spread and acceptance of digital technologies depend on globalisation. Examining and comprehending the communication pathway between globalisation and the usage of digital technologies in the company sector will require more research.

Conclusion and Future Recommendations

Globalisation continues to be a crucial channel via which the adoption of contemporary technology affects creativity, but it is by no means the only one. Globalisation significantly affects multifactor performance and worldwide competitiveness through digital technology.

The research presented in this paper suggests that globalisation is still a key factor in the adoption and spread of digital technologies. This study shows the effectiveness of the majority of the developed inquiry methodologies.

The DAI index's measurement of the limited information volume and the inability to apply more complex panel dataset models are the main weaknesses of this study. Governments with the goal of accelerating economic growth through an increase in multivariate regression output as a result of innovation should eventually take a proactive role in globalisation initiatives. The previously listed elements will enhance technological and information interaction, adoption of digital technology, growth, and industrialisation.

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Figures and survey result

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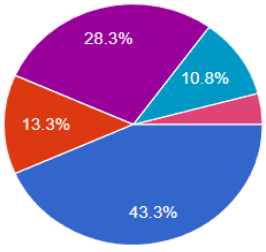

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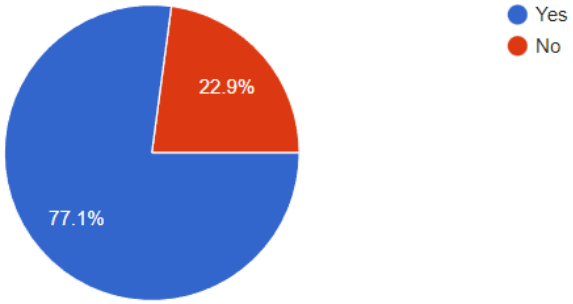

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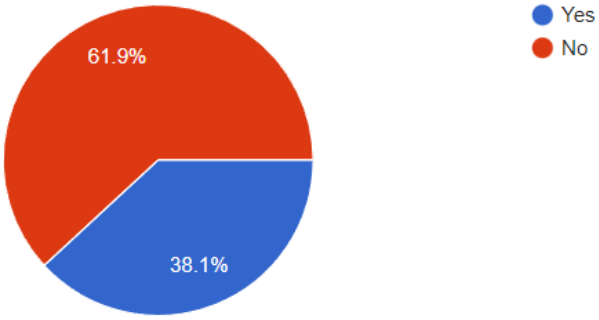
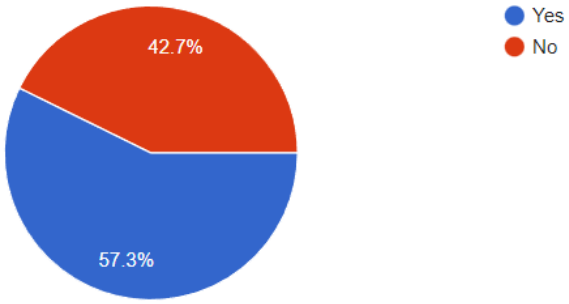
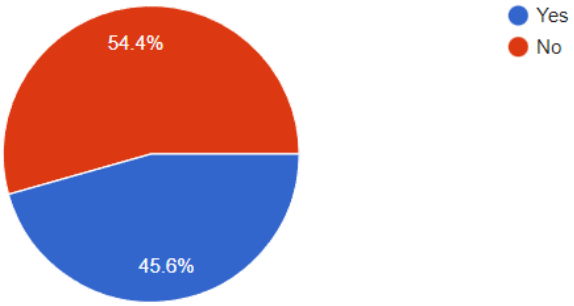


4) Can technology solve problems?



5) Does globalization improve technology?



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