

Role of the Digital Economy in promoting International Trade and Its Impact on Economic Growth

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Abstract

This article uses regression analysis to investigate the importance of the digital economy in international trade and its effects on India's economic growth from 2000 to 2023. The data show that foreign trade considerably increases India's economic growth, emphasizing its importance. Conversely, the digital economy has a negative beginning effect on growth, implying that its expansion may meet early difficulties. However, the combination of international trade and the digital economy has a large beneficial impact on growth, demonstrating that combining these two factors can boost economic growth. Foreign Direct Investment (FDI) and the Consumer Price Index (CPI) both contribute. The paper recommends that authorities prioritize digital infrastructure development and accelerate trade procedures to maximize the benefits of this integration. The research proposes that concentrated efforts should be taken to promote the digital economy to ensure that international trade has a full economic growth effect on India.

Keywords: Digital economy, international trade, economic growth

1. Introduction

The relationship between international trade, the digital economy, and economic growth is critical in the modern era. The digital economy plays a critical role in countries with geographical limitations, aiding trade expansion, transparency, and market efficiency. Several studies demonstrate the favourable impact of the digital economy on economic growth. The digital economy reduces geographical barriers, increases transaction efficiency, and allows for direct linkage between customers and producers.(Zayats et al, 2024). The digital economy and e-commerce play a vital role in international trade, providing firms with enhanced market potential.(Li, 2024). According to a study conducted by(Eshov et al., 2023)In the Central Asian region, the digital economy, in particular, plays a vital role in economic growth by minimizing the negative impact of geographical limits.

Furthermore, a study conducted in Southeast Asia found that the digital economy is more closely related to financial inclusion than international trade and has a complex relationship with economic growth(Rini Dwi Astuti et al., 2023). Different regions show varying effects of the digital economy on international trade and economic growth. In Central Asia, the findings are favourable and significant, whereas in Indonesia, the results have a mixed impact on economic growth (Abid, 2023; Astuti et al., 2023).

However, few studies show that, while the digital economy may enhance economic growth, digitalisation's impact is not evenly distributed, thereby increasing inequality among different regions of countries. This highlights the importance of developing digital infrastructure to boost digital trade across countries.(Moskalyk et al, 2024).

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Another research study emphasizes the importance of digitalization. When the digital economy and international trade are combined, economic growth improves, and the study recommends additional research on industries across the region to have a deeper understanding (Wang, 2024). To have a deeper understanding, it is necessary to examine the role of the digital economy in international trade, as well as its impact on India's economic growth. India's digital economy has grown rapidly as a result of significant private sector investments and introduction projects such as the "Digital India" initiative. Because of this growth, the usage of cell phones and the internet has increased dramatically, moving sectors toward digitization and fostering a more robust and inclusive economy. Prominent outcomes of this transformation include increased local e-commerce and India's position as a major player in global digital trade (Sharma et al, 2021).

The link between the digital economy and economic growth has generated great interest in economics, both theoretically and practically. Given this, we examined the following theories on the digital economy and economic growth. First, Joseph A. Schumpeter's classical theory proposed that the process of creative destruction fosters economic growth. He stated that booms and recessions are unavoidable and cannot be resolved without hampering the creation of new wealth through innovation (Schumpeter, 1934). The study by (Guo et al, 2023) supports Schumpeter's thesis and explains the relationship between the digital economy and economic growth. According to the study, digitalization helps to drive innovation in the manufacturing business.

Second, Solow's neoclassical growth theory emphasized the role of the digital economy in a country's economic growth. According to the Solow model, technical changes result in positive economic growth (Solow, 1978). Some research (Caraianni, 2007; Mankiw et al., 2015; Sharipov, 2015) used the Solow model to describe the relationship between the digital economy and economic growth.

Aside from the theoretical analysis of the digital economy's impact on economic growth. The relationship between the digital economy and economic growth has been the subject of numerous macro-level empirical research. These empirical investigations produced varying results, which have been attributed to the diverse econometric approaches utilized and the scope of the studies. Some previous research elaborated that broadband and mobile telecommunication had a favourable impact on the economic growth of Sub-Saharan Africa and the Organization of Economic Cooperation economies (Myovella et al., 2020). Another study (Bulturbayevich & Jurayevich, 2020) explained that economic growth is critical to increasing citizens' living standards, and the digital economy plays a significant role in global integration. A study (Barata, 2019) finds similar results for the Indonesian economy and emphasizes how the rapid development of information and communication technology (ICT) offers the Indonesian economy a new look as it transitions from a traditional to a digital economy. As a result, economic growth, greater earnings, and job creation can reduce poverty and inequality by supporting long-term national economic growth. Furthermore, (Strogonova & Novikova, 2020) provided empirical evidence from the Ural microregion of the Russian Federation to demonstrate that the digital economy is the key driver of the region's economic growth. According to a study (Dutzler et al., 2020) conducted in the European region, the development of new business models using digital platforms and the establishment of digital supply chains will result in a thriving venture capital sector and accelerate economic growth.

Digital technology not only helps to reduce costs and boost financial inclusion, but it also contributes to major increases in economic growth (Chen et al., 2021). Digital technology and the digital economy have had a significant impact on how we work, do business, engage in international trade, and communicate with one another as individuals and communities in the twenty-first century. Furthermore, the recent health crisis has offered additional evidence that this trend will increase the role of digitalization in sustainable growth and economic advances (Yi Xiaozhun, 2020).

2. Literature Review

Rashmi Banga's paper examines India's response to the Fourth Industrial Revolution and its implications for global business. India has launched schemes such as Digital India to boost its digital infrastructure and services as digitalization alters worldwide trade. According to the examination and comparison in the article,

India lags behind other countries in terms of digital aptitude. This paper proposes developing a digitally-informed foreign trade policy to advance digital infrastructure, increase digital content exports, develop digital skills, and employ big data analytics to promote trade competitiveness in the digital era (Banga, 2019).

In parallel, another study shows that e-commerce has grown in India, and better internet and mobile connectivity have contributed to a significant increase in e-commerce among urban residents. The report underlines that, while e-trade is expanding due to consumer expectations and technological advancements, India must invest more in creative business models and infrastructure to fully capitalize on this growth and become a key economic force (Ram, 2021). Another study looks at India's "Digital India" program, which was launched in July 2015 and intends to enhance socioeconomic development, particularly in rural areas, by improving internet connectivity and digital services. It acknowledges current difficulties such as limited internet access and innovation, while articulating the plan's objectives of providing robust digital infrastructure, intelligent e-governance, and digital empowerment (Ray, 2018). Furthermore, a critical study highlights major disparities in digital access by gender and region in India, with women and rural areas having less access to mobile phones and the Internet. Despite the government's "Digital India" initiative, which strives to improve digital literacy and infrastructure, difficulties remain due to social prejudices, limited access, and a lack of digital skills (Chakraborty, 2023).

The digital economy's transition is critical for the long-term development of international trade. Another study by (Kurochkina et al., 2021) examines "digital totalitarianism" and "Education 2023" to better comprehend the influence of digitalization. The study's findings highlight topics such as the negative effects on well-being, the challenges in reorganizing businesses, and potential risks from digital authoritarianism. To resist the effects of digital totalitarianism, it also suggests developing self-control, monitoring psychological well-being, promoting acceptable internet usage behaviours, and encouraging young people to think critically. (Andrey et al., 2020).

The study examines how digitization affects GDP per capita in European Union (EU) countries. The findings indicate that key determinants impacting GDP per capita include venture capital investments, the availability and use of ICT by enterprises and consumers, internet usage, e-commerce development, and the security of internet services. To stimulate economic growth, governments should prioritize encouraging ICT adoption in businesses through tax breaks and greater investment, increasing public trust in digital products, boosting human capital, supporting high-tech exports, and expanding e-government services. Furthermore, (Shahzad et al., 2022) investigate how China's ecological footprint has changed from the first quarter of 1996 to the fourth quarter of 2019 as a result of high-tech industries, trade and financial globalization, and economic complexity. Its goal is to assess how these variables influence environmental sustainability and support the goals of sustainable development. The findings reveal that globalization of finance and trade, as well as economic complexity, significantly increase ecological footprints; nevertheless, high-tech industries have a less evident impact on mitigating environmental harm. According to the study, while high-tech sectors can partially replace traditional products, China would require more significant adjustments to create a balance between economic growth and environmental sustainability.

The research attempts to establish a theoretical and methodological foundation for e-commerce, with a focus on increasing business productivity and expanding access to foreign markets. It examines the advantages and disadvantages of e-commerce for consumers, businesses, and the government, as well as suggestions for improving transaction security.

The results suggest that e-commerce enhances market access and corporate efficiency, and electronic payments are significantly reliant on service acquisition. Address verification, fraud modelling, and two-step authentication are among the critical security procedures recommended. The paper underlines the need for improved security measures and legislative frameworks to secure online shopping while still promoting economic growth. (Drobnyazko, 2020).

This research examines the inventive and industrial development levels of the EEU and CIS countries, particularly in the context of Industry 4.0, to establish their readiness for the digital transition. It shows these

countries' relative positions in innovation and economic development, as well as how they compare to the rest of the world's progress. According to the study's conclusions, the EEU and CIS countries frequently fall behind global leaders in terms of innovation and industrial development. Belarus, Kazakhstan, and Russia are the only countries that follow global trends; the rest face severe challenges. The rising gap between these countries and the best-performing ones emphasizes the need for increased funding and stronger policies to encourage industrial development and digital transformation. (Rodionova & Kokuytseva, 2020). This study employs time series analysis to investigate the role of digital economy, international trade, and economic growth in India. It investigates how digitalization and trade openness have impacted India's economic development, with a focus on their interconnections and long-term growth prospects. The findings shed light on how the digital revolution and global trade work together to shape India's economic destiny.

3. Research Methodology

This study examines the significance of the digital economy in international trade and its impact on the economic growth of India from 2000 to 2023. The impact is investigated using the data collected from the World Development Indicators. The results are estimated using the pooled ordinary least squares (POLS) method, random and fixed effects, and the Generalized Method of Moments (GMM) model.

3.1 Theoretical framework

The neoclassical Solow model is used to study the impact of international trade on economic growth, with the digital economy contributing as a crucial explanatory variable. In the theoretical Solow model, the following Cobb-Douglas production function is used:

$$Y = A L^\alpha K^\beta \tag{1}$$

Where Y is output growth (economic growth), A is technological growth, L is labour, K is capital stock, and α and β are labour and capital elasticity, respectively. Economic growth is believed to be driven by international commerce (T), human capital (L), technological advances (A), and physical capital (K).

$$Y = AL^{\beta_1} K^{\beta_2} T^{\beta_3} \tag{2}$$

Furthermore, equation 3 depicts the study's empirical technique in natural logarithms, implying continuous returns to scale.

$$\ln Y_{it} = \beta_0 + \beta_1 \ln L_{it} + \beta_2 \ln K_{it} + \beta_3 \ln T_{it} + \beta_4 D_{it} + \beta_5 W_{it} + \psi_{it} \tag{3}$$

In equation 3, $\ln Y_{it}$ represents the natural logarithm of economic growth (as GDPPC), it is the natural logarithm of human capital, $\ln K_{it}$ represents the natural logarithm of capital stocks, $\ln T_{it}$ represents the logarithm of international trade, D_{it} represents the digital economy variables in vector form of the natural logarithm, and W_{it} represents the logarithm of control variables in vector form. β_0 is the constant term, ψ_{it} is the stochastic error term, and β 's (1,2,3,4,5) are the coefficients to be estimated.

Equation 3 is extended to include the interaction between international trade and the digital economy ($\ln T * D$). The approximated equation including the interaction term is displayed below.

$$\ln Y_{it} = \beta_0 + \beta_1 \ln L_{it} + \beta_2 \ln K_{it} + \beta_3 \ln T_{it} + \beta_4 D_{it} + \beta_5 W_{it} + \alpha (\ln T * D)_{it} + \gamma_i + \psi_{it} \tag{4}$$

Equation 4 represents the interacting term coefficients to be calculated, while Equation 3 explains the other variables.

3.2 Digital Economy Index

The digital economy index (DICONOMY) is created using principal component analysis based on (Abendin & Duan, 2021; Aggarwal & Karwasra, 2023) and incorporates three critical characteristics (access, use, and skill components; see Table 1). Equation 5 shows the framework for the digital economy index:

$$DICONOMY = f(FTSPHI, MCSPHI, SISPOP, POPUI, FBBSPHI, COMEDU) \dots \dots \dots (5)$$

Table 1. Digital economy index based on access, use and skill factors		
Access factors	Use factors	Skill factors
1. Fixed telephone subscription per 100 inhabitants (FTSPHI)	1. Percentage of people using the internet (POPUI)	1. Compulsory education duration (COMEDU)
2. Mobile cellular phone subscriptions per 100 inhabitants (MCSPHI)	2. Fixed broadband subscriptions per 100 inhabitants (FBBSPHI)	
3. Secure internet servers per one million people (SISPOP)		

Source: Authors' calculation based on Literature

3.3 Indicators-Dependent, Independent and Control Variables

GDP per capita (constant 2015 US\$) is used to measure economic growth (Y); international trade (T) is defined as total merchandise trade as a share of GDP; gross fixed capital formation (K) is regarded as physical capital; labour (L) is used to represent the labour force; and the digital economy (DICONOMY) is used to measure technological progress. Financial development is measured by the domestic credit provided by the financial sector as a share of GDP; the consumer price index is defined as the consumer's cost of acquiring a basket of goods and services; and the exchange rate is measured by the official exchange rate determined by the national authorities. All of the factors are outlined below:

Economic Growth: Economic growth GDP per capita is calculated by dividing the gross domestic product by the midyear population. GDP is the total gross value added by all resident producers in the economy, plus any product taxes and minus any subsidies that are not included in the product value. It is estimated without regard for the depreciation of manufactured assets or the depletion and degradation of natural resources. Data are in constant 2015 US dollars.

International trade is computed as the sum of items imported and exported divided by GDP in current US dollars.

Gross Fixed Capital Formation: Land improvements (fences, ditches, drains, and so on), plant, machinery, and equipment purchases, and the construction of roads, railways, schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings are all examples of gross fixed capital formation. The data are in constant 2015 prices, given in US dollars.

Labour: The labour force participation rate is the fraction of the population aged 15 and up who is economically active, which includes all people who provide labour to generate goods and services throughout a given period.

Domestic credit provided by the Financial Sector: Domestic credit given by the banking sector covers all gross credit to various sectors, except for net credit to the central government. The financial sector includes monetary authorities, deposit money institutions, and other financial corporations for which data is accessible. Other financial corporations include finance and leasing companies, money lenders, insurance companies, pension funds, and foreign exchange firms.

Foreign direct investment: It is defined as the net inflow of investment to acquire a long-term management stake (10 per cent or more of voting stock) in a company operating in a different economy than the investor's. The balance of payments shows the sum of equity capital, earnings reinvestment, other long-term capital, and short-term capital. This statistic depicts net inflows (new investment inflows minus disinvestment) from foreign investors into the reporting economy, divided by GDP.

Consumer Price Index: The consumer price index measures changes in the average consumer's cost of acquiring a basket of goods and services, which can be set or changed at regular intervals, such as yearly. The Laspeyres formula is commonly utilized. The data are period averages.

Official Exchange Rate: The official exchange rate is the rate decided by national authorities or in a legally sanctioned currency market. It is computed as an annual average using monthly averages (local currency units relative to the US dollar).

Digital Economy Index: The digital economy index includes the percentage of people who use the internet (POPUI), mobile cellular subscription per hundred inhabitants (MCSPHI), compulsory education duration (Years) (COMEDU), secure internet servers per one million people (SISPOP), fixed telephone subscription per hundred inhabitants (FTSPHI), fixed broadband subscription per hundred inhabitants (FBBSPHI), and mobile cellular subscription per hundred inhabitants (MCSPHI).

3.4 Model Construction

To investigate the implications of integrating the digital economy into international trade for economic growth, panel data from selected G20 countries from 2000 to 2023. The following econometric model is employed for this analysis:

$$EG = \alpha_0 + \alpha_1 IT + \alpha_2 GFCF + \alpha_3 L + \alpha_3 DCFS + \alpha_5 FDI + \alpha_6 EXCH + \alpha_7 CPI + \alpha_8 DICONOMY \quad (5)$$

Here in equation 5, EG represents the economic growth of the selected G20 countries and India, IT represents international trade, GFCF represents the gross fixed capital formation, L represents labour, DCFS represents domestic credit provided by the financial sector, FDI represents the foreign direct investment, EXCH represents the official exchange rate, CPI represents the consumer price index, and DICONOMY represents the digital economy index.

Equation 5, is further extended to include the international trade and digital economy interaction (IT*DICONOMY). The estimated equation with the interactive term is shown below:

$$EG = \alpha_0 + \alpha_1 IT + \alpha_2 GFCF + \alpha_3 L + \alpha_3 DCFS + \alpha_5 FDI + \alpha_6 EXCH + \alpha_7 CPI + \alpha_8 DICONOMY + \alpha_9 IT * DICONOMY \quad (6)$$

In equation 6, IT*DICONOMY represents the interaction between international trade and the digital economy, and the other variables are already explained above in equation 1.

4. Empirical results and discussions

4.1 Descriptive statistical analysis

A descriptive statistical examination of these variables provides insight into the dynamics of the digital economy and international trade's combined impact on Indian economic growth. According to the descriptive study of economic variables, the Digital Economy Index (DICONOMY), with a mean of 192.58 and a standard deviation of 217.24, is highly variable. The average economic growth rate is 1362.09, indicating a range of economic growth rates. International trade averages 0.43, while labour participation remains stable at 53.83. The Consumer Price Index (CPI) is volatile, with a mean of 119.49, while Foreign Direct Investment (FDI) has an average of 1.61. There are also substantial fluctuations in the domestic credit supply and exchange rate. The average gross fixed capital formation (GFCF), which represents disparities in investment, is approximately 3.69e+10. The interaction term between international commerce and the digital economy (commerce*DICONOMY) has a mean of 11.96, indicating that the impacts differ by nation. Overall, our findings demonstrate how closely international trade dynamics, the digital economy, and economic growth are linked, emphasizing the importance of personalized growth plans.

Table 3. Descriptive statistical analysis

Variable name	Meaning of variable	Number of samples	Mean value	Standard deviation	Minimum value	Maximum value
DICONOMY	Digital Economy	24	192.5764	217.2418	12.6758	607.91

	Index					
EG	Economic growth	24	1362.09	644.4312	442.0353	2484.845
IT	International Trade	24	.4301094	.0854145	.259933	.557937
L	Labour	24	53.83429	1.830117	50.45	57.2
FDI	Foreign Direct Investment	24	1.612772	.6989677	.6058878	3.620523
CPI	Consumer Price Index	24	119.4944	52.68317	54.33832	216.862
Fd_EXCH	Exchange rate	24	1.63729	2.815579	-3.958473	6.766766
Fd_DCFS	Domestic Credit Provided by the financial sector	24	.9479394	2.279591	-4.363132	4.565536
Fd_GFCF	Gross Fixed Capital Formation	24	3.69e+10	3.63E+10	-5.64e+10	1.29e+11
IT* DICONOMY	International Trade & digital Economy Index interaction	24	11.96188	20.41981	-24.86072	70.99437

Source: Author analysis using STATA

4.2 Stationarity Test

The enhanced Dickey-Fuller test (ADF) is used in STATA to ensure the stationarity of India's time series data from 2000 to 2023. The augmented Dickey-Fuller (ADF) test detects the presence of unit roots. To test stationarity, the following hypothesis is proposed:

Null hypothesis (H0): The series is either non-stationary or has a unit root.

Alternate Hypothesis (H1): The series is stationary or does not have a unit root.

The calculated test statistics findings were compared to the appropriate critical value at a 5% level of significance. Statistical significance was validated by comparing the t-statistic's positive value to its significance value. The study rejects the null hypothesis, suggesting that the series values for economic growth (EG), international trade (IT), labour (L), digital economy (DICONOMY), international trade, and digital economy interactive term (IT* DICONOMY) do not have a unit root (Table 2). Hence, all the series are stationary. These findings suggest that the series is stable enough for further research.

Table 2. Stationarity Test				
	Test statistics	1% Critical value	5% critical value	10% critical value
DICONOMY	2.432	-2.660	-1.950	-1.600
MacKinnon's approximate p-value for Z(t) = 0.0178.				
EG	3.726	-2.660	-1.950	-1.600
MacKinnon's approximate p-value for Z(t) = 0.0168.				
IT	-2.061	-2.518	-1.721	-1.323
MacKinnon's approximate p-value for Z(t) = 0.0260				
L	-1.787	-2.518	-1.721	-1.323
MacKinnon's approximate p-value for Z(t) = 0.0442				

FDI	-2.434	-2.518	-1.721	-1.323
MacKinnon's approximate p-value for $Z(t) = 0.0120$				
CPI	4.250	-2.518	-1.721	-1.323
MacKinnon's approximate p-value for $Z(t) = 0.0120$				
F(EXCH)	-3.917	-2.528	-1.725	-1.325
MacKinnon's approximate p-value for $Z(t) = 0.0004$				
F(DCFS)	-4.424	-2.528	-1.725	-1.325
MacKinnon's approximate p-value for $Z(t) = 0.0001$				
F(GFCF)	-4.468	-2.528	-1.725	-1.725
MacKinnon's approximate p-value for $Z(t) = 0.0001$				
IT*	2.883	-2.660	-1.950	-1.600
DICONOMY				
MacKinnon's approximate p-value for $Z(t) = 0.0001$				

Source: STATA results calculated by Author

4.3 Regression results

This study contributes to the previous research work done in this area which focuses on the relationship between international trade and economic growth but overlooked the impact of the digital economy.

This study proposes the following hypothesis:

H_0 : Integrating the digital economy into international trade does not enhance economic growth in India.

H_1 : Integrating the digital economy into international trade enhances economic growth in India.

Table 4 displays the regression findings, which demonstrate that the independent variables explain a significant percentage of the variance in economic growth (EG), with an F-statistic of 239.78 and an R-squared value of 0.9940 indicating a robust model fit.

The extremely significant positive coefficient (1106.973) of international trade (IT) in the data indicates that trade expansion boosts India's economic growth. The coefficient (-0.2587) for the digital economy (DICONOMY) is negative, implying that expanding the digital economy may have an early negative influence on economic growth. Foreign Direct Investment (FDI) and the Consumer Price Index (CPI) have a large positive impact on economic growth, while labour (L) has a positive but marginally significant effect. The exchange rate has a significant negative effect on economic growth.

F statistics	239.78					
Prob > F	0.0000					
R-squared	0.9940					
Adj R-squared	0.9899					
EG	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
DICONOMY	-.2586648	.177276	-1.46	0.0168	-.6416463	.1243167
IT	1106.973	240.4703	4.60	0.000	587.4685	1626.478
L	46.84229	23.09423	2.03	0.064	-3.049753	96.73434
FDI	37.80862	24.74035	1.53	0.050	-15.63966	91.25691

CPI	13.15231	1.049982	12.53	0.000	10.88396	15.42065
F(EXCH)	-16.5231	6.470303	-2.55	0.024	-30.50134	-2.544856
F(DCFS)	.1868085	8.48163	0.02	0.083	-18.13664	18.51026
F(GFCF)	5.30e-10	5.84e-10	0.91	0.082	-7.31e-10	1.79e-09
IT* DICONOMY	3.80225	1.370357	2.77	0.016	.8417741	6.762725
Constant	-3254.228	1348.64	-2.41	0.031	-6167.804	-340.6522
Test for Heteroscedasticity check: Breusch-Pagan test:						
Ho: Constant variance; p-value= 0.5039; do not reject Ho at 5%; No Heteroscedasticity						
Autocorrelation Check: Durbin-Watson d-statistic = 2.124547; no autocorrelation						
Multicollinearity Check: VIF = 1.00; No Multicollinearity						

Source: STATA results calculated by Author

The interactive term (TRADE*DICONOMY) of the digital economy and international trade has a significant and positive influence, indicating that trade and the digital economy interact effectively to boost economic growth. Diagnostic tests support the model's robustness, with no sign of autocorrelation identified using the Durbin-Watson test, variance inflation factor testing to check multicollinearity, and the Breusch-Pagan test to verify heteroscedasticity. (The Durbin-Watson statistic is 2.124, the multicollinearity value of VIF is 1.00, and the heteroscedasticity p-value is 0.5039. Overall, these findings highlight the importance of trade and digital economy integration in driving India's economic growth. So, we reject the null hypothesis and accept the alternate hypothesis that integrating the digital economy into international trade enhances economic growth in India.

Conclusion

The regression study demonstrates a robust model for analysing the relationship between international trade, the digital economy, and India's economic growth. The findings indicate that international trade considerably enhances economic growth. On the other hand, the digital economy alone hurts economic growth. The interactive term findings reveal that international trade and the digital economy have a large positive influence on economic growth, emphasizing the need to integrate these two elements in fostering India's economic growth.

To summarize, these findings emphasize the importance of incorporating the digital economy into international trade to promote India's economic growth. These findings suggest that the government should prioritize developing digital infrastructure and making trade procedures easier and more transparent to maximize the potential benefits of merging the digital economy with international trade.

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