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Financial technology: The catalyst for BRICS' economic and financial leap

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ABSTRACT

This research attempts to ascertain how fintech contributes to the financial development and economic expansion of the BRICS nations. Samples were gathered between 2002 and 2021 using panel data analysis with fixed effects as the research approach. OLS regression was used for analysis. Variables are collected from World Development Indicators and data analysis is done using Gretl software. Three hypotheses are put out in the study and are validated based on the data collected. As per the first hypothesis, fintech is having a beneficial impact on the GDP which is used as a gauge for the nation's economic growth. A second hypothesis posits that fintech impacts the overall money supply which serves as a gauge for financial progress. The third hypothesis states that fintech impacts bank deposits relative to GDP; the second metric chosen to measure financial development is not favorable according to the results. The impact of fintech on financial development and economic growth shows positive impacts. Fintech can enhance the overall economic growth of emerging economies. Maximum utilization of upcoming technology can result in financial development. Emerging economies can benefit from the use of financial technologies to further their financial and economic development. The analysis highlights how crucial technology is to the financial industry.

Contribution/Originality: This research, which is novel in that it uses panel data analysis and ordinary least squares regression to assess the impact of fintech on the financial and economic development of the BRICS nations between 2002 and 2021 highlights the special relationship by creating a fintech index using the principal compound analysis method on economic growth and the financial development of emerging economies.

1. INTRODUCTION

The development of a nation's economy is dependent on several essential elements, one of which is financial technology or fintech. It is a technologically driven financial innovation changing the financial scene by creating products, business models, and procedures to provide easily accessible and affordable financial services (Awais, Afzal, Firdousi, & Hasnaoui, 2023). Growth and development are greatly aided by financial development, particularly in developing nations where it makes it easier for people to allocate their savings to profitable ventures (Ibrahim & Alagidede, 2018). Fintech is making a greater contribution to emerging countries' financial and economic development. Additionally, a fintech initiative that enables unbanked individuals to receive money straight into their mobile money accounts increases savings and improves their ability to endure economic shocks (Breza, Kanz, & Klapper, 2020). Digitalized financial services such as loans, investments, insurance, and payments reduce poverty, raise living standards, and boost economic outcomes and total factor productivity (Luo, Sun, Yang, & Zhou, 2022).

According to Schumpeter's ground breaking work in 1912, the relationship between financial development, innovation, and economic expansion has been the subject of much research in the literature. Another notable study is Kanga, Oughton, Harris, and Murinde (2022) quantifying the indirect impact of fintech through several mobile phone subscriptions and automated teller machines which discovered a favorable correlation with the rise of per capita income across a panel of 137 nations from 1991 to 2015. These past studies indicate that fintech can influence the economy's financial development and economic growth. Future outcomes of this approach ought to encompass financial inclusion and improved standard of living. Moving on to other dimensions of fintech include technologies like big data, cloud computing, blockchain, and artificial intelligence. It has developed effective ways to deal with economic growth challenges. It also deals with peer-to-peer lending and digital crowdfunding applications to provide substantial chances that assist financially marginalized and vulnerable families and small businesses, giving them access to financial resources in distant locations and communities (Umar, 2021).

Most of the fintech-oriented studies have been done in the area of mobile money. It states that the financial industry's future is now seen as being largely dependent on the widespread use of smartphones which have significantly contributed to closing the digital divide (Kabbiri, Dora, Kumar, Elepu, & Gellynck, 2018). There is a lack of studies that present the relationship between financial and economic development of the countries especially emerging economies. Therefore, it can directly contribute to sustainable development. In the case of developing countries, financial inclusion is being enhanced by mobile money. Fintech inventions are facilitating financial transactions without the need for a bank account (Senyo & Osabutey, 2020). As mentioned above, most of fintech studies focus on financial inclusion aspect of fintech. There is a need to analyse the effect of fintech which can create opportunities for the overall economic development; it is still a weakness of previous studies. Fintech pertains to the utilization of technology to offer enhanced and novel financial services which leads to financial development and economic growth (Gomber, Kauffman, Parker, & Weber, 2018). The lacking factor in the previous study is that it does not have a sample from 2002, the year in which the global economy tended to get back on track in terms of GDP (gross domestic product) after a terrorist attack in America.

Previous fintech-focused research are analyzed and their impact on financial inclusion are examined using primary data. Certain studies focus on established nations that have experience with both financial and economic development. The focus of this study is on opportunities and chances that can support the economic and financial growth of emerging economies which makes it unique. Mobile technology was selected in this study due to its accessibility to the more affluent segments of society. This commonality will yield a valid and dependable picture of the results obtained. Another contribution is that the focus of this study is on the BRICS (Brazil, Russia, India, China, and South Africa) group of economies, which account for over 35% of the global GDP than any one country or set of industrialized nations. Policymakers for the general economic development of emerging economies can benefit from more research in this field. The effects of fintech on financial development and economic growth in emerging economies need to be thoroughly studied.

2. LITERATURE REVIEW AND HYPOTHESES

Examining previous research results of fintech, Song and Appiah-Otoo's (2022) analysis found that fintech, together with its sub-measures of insurance, credit, and third-party payment are important factors in influencing China's economic expansion.

According to Liu and Chu's (2024) analysis which included 778 country-year observations from 193 nations between 2018 and 2021, the positive impact of fintech on economic growth is particularly pronounced during the pandemic. Investigations into how fintech affects banks' funding models and how banks' funding structures mediate the relationship between fintech and economic growth in Sub-Saharan Africa reveal that bank deposits are not significantly impacted by fintech development suggesting that banks are still able to withstand the entry of new fintech players (Mashamba & Gani, 2023). A statistically substantial and positive correlation exists between digital

lending and economic growth (Cevik, 2024). Fintech and green finance tremendously support the expansion of the green economy outside of the financial development space (Zhou, Zhu, & Luo, 2022). Digital financial inclusion has shown positive effects on economic growth and environmental sustainability in an empirical analysis of 42 OBRI (One Belt and Road Initiative Project) countries (Ozturk & Ullah, 2022).

In a recent literature review, a similar study has been done that shows the positive influence of fintech penetration on the financial development of developing and emerging countries (Aduba, Asgari, & Izawa, 2023). The impact of fintech, natural resources and business freedom on the economic growth of the CAREC (Central Asia Regional Economic Cooperation) region from 2000 to 2020 shows that there is a higher contribution towards the economic growth of the countries (Razzaq, 2024).

In developed economies, the correlation between fintech and economic growth is more pronounced but there is a lack of studies in the case of emerging economies especially in BRICS. Studies on the adoption of fintech and its development are limited to specific nations such as Ghana, China, and Indonesia. As a result, a thorough analysis of emerging economies like the BRICS which account for a large portion of the global GDP is lacking. Investigating how fintech affects sustainable development is necessary (Liu & Chu, 2024).

Financial inclusion and income inequality (Demir, Pesqué-Cela, Altunbas, & Murinde, 2022) fintech credit and entrepreneurial growth (Hau et al., 2024), fintech, financial inclusion, and sustainable development (Arner, Buckley, Zetzsche, & Veidt, 2020) are just a few of the related but distinct questions that previous studies have looked at. Other related but different questions center on fintech, financial inclusion and country-level financial stability (Ozili, 2018; Wolbers, 2017).

There was no clear correlation found between fintech and financial development or economic growth in any of the research that addressed the issues mentioned above. Studies examining the impact of fintech on the economies of emerging nations are relatively scarce despite the growing interest in this field. Research on the impact of fintech on financial development and economic growth is minimal. There exist studies that break down fintech's impact on financial development and growth by country. However, the literature does not pay enough attention to the group of rising nations that have had equally rapid growth in fintech.

Fintech-related studies with effect on economic growth should be encouraged to identify the opportunities for financial development and economic advancement. Second, it is the duty of governmental authorities to ensure that the infrastructure arrangements necessary for the efficient use of the technologies have been designed with the intention of aiding the socially disadvantaged segments of society. Thirdly, marketing managers have to highlight the benefits of technical items to increase their acceptance and appeal. Fourth, the banking industry might focus on providing services that make use of emerging technologies to retain and enhance its customers. The relationship between financial technologies and economic progress is seen in Figure 1.

Using various financial technology services will open up financial access which will help marginalized groups in society. By saving more money, using credit cards, and engaging in profitable investments, they can enhance their financial activity. Individual growth promotes the entire society allowing the economy to expand and diversify. The nation's sustainable development is being steered towards by the financial growth. This study takes into account the Economic Union of the BRICS, a collection of highly populated nations in the world as well as emerging economies with expanded fintech development to ascertain the effects of financial technologies on economic growth and financial development.

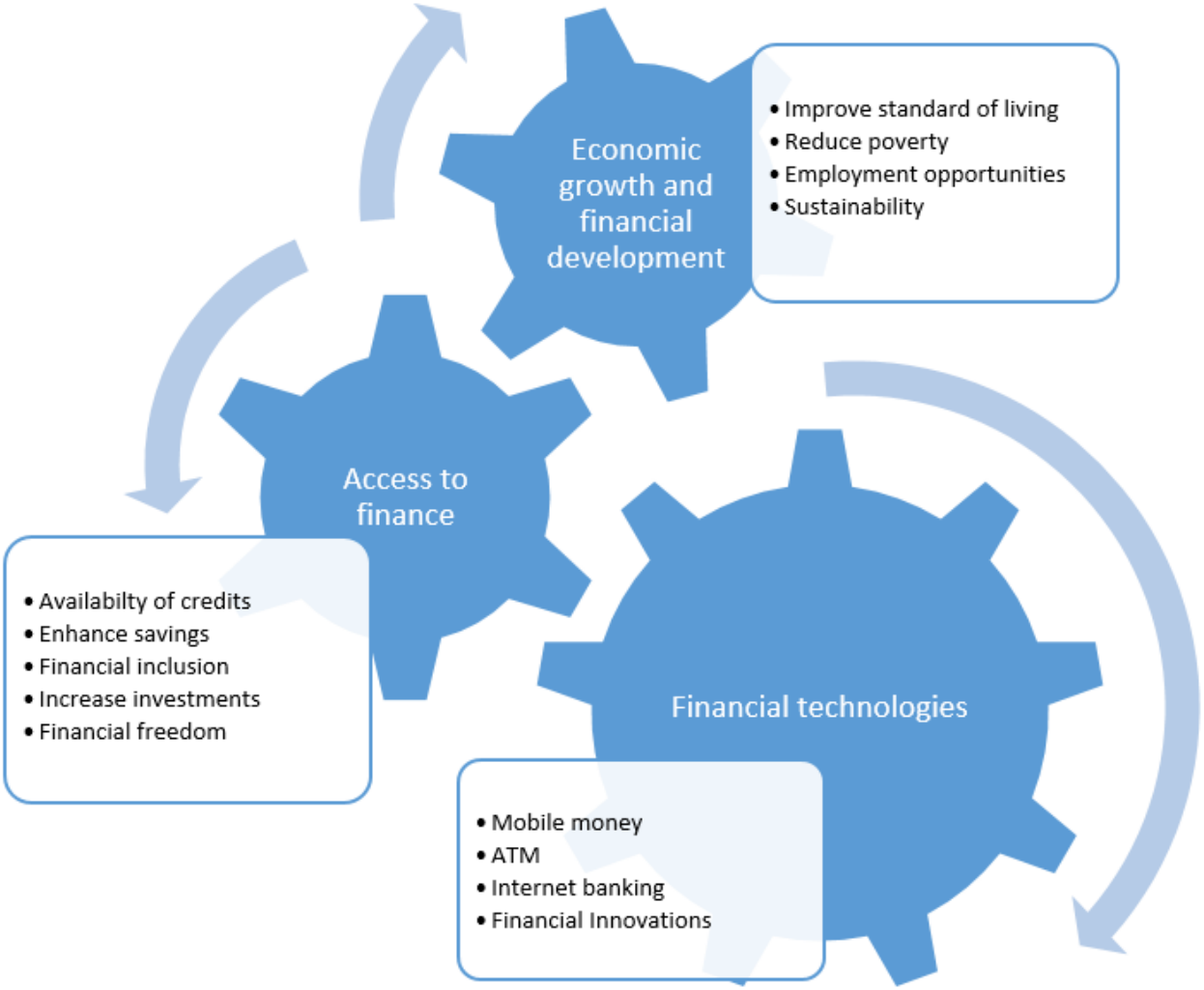

Figure 1. Conceptual framework.

Studies examining how financial technology services can be used to improve economic growth and financial development in emerging economies are conspicuously lacking. Sustainability achievement is an emerging and interesting area in the present scenario. The current study adds to our understanding of the importance of cutting-edge technologies in achieving sustainability and economic prosperity. For this reason, a theoretical contribution has been created. According to research, fintech can benefit the environment making it useful for achieving the objective of sustainable economic development (Tao, Su, Naqvi, & Rizvi, 2022). In developed economies, the correlation between fintech and economic growth is more pronounced. These findings support the Schumpeterian hypotheses that financial innovation may stimulate economic growth by expanding financial services and financial intermediation resources. The research on how financial technologies, especially financial technology indices affect economic growth in emerging economies is still in its initial stages. The following hypothesis has been developed based on the literature review and discussion.

H_1: Fintech and GDP are positively associated.

Financial development (FD) metrics such as bank deposits to GDP and broad money are driven by fintech and have a significant impact on the financial growth of nations with low financial inclusion and poor performance in the financial sector. This research endeavors to ascertain the impact of fintech variables on financial development metrics separately to provide dependable findings that may be used broadly a feature absent from previous studies.

H_2: Fintech and broad money supply are positively associated.

H_3: Fintech and bank deposits to GDP are positively associated.

3. METHODOLOGY

3.1. Data Collection

According to the United Nations World Economic Situation and Prospects 2002, the terrorist attacks in the United States of America have exacerbated a global economic slowdown that has resulted in the lowest growth of the gross world output. A swift and broad economic recovery was the main priority at that time. A modest rebound starting in 2002 is predicted in the UN report. It is anticipated that global gross production will increase starting this year. The global economy started to get back on track in terms of GDP by 2002. Consequently, this year has been chosen as the study's base year as it gives importance to the global level of economic growth. Based on the data availability, the end year 2021 has been set. Data from panels covering the years 2002–2021 was examined for this purpose.

The reason for choosing the BRICS economic union for the study is that between 2014 and 2017, the BRICS's overall financial inclusion rate rose by 9.6 percentage points. As the economies of the BRICS expand, financial inclusion levels appear to be rising mostly as a result of fintech growth (Vuković, Hassan, Kwakye, Febtinugraini, & Shakib, 2024). Given the rapid surge in fintech development, the BRICS region offers the best opportunities for studying economic growth and development. Details on the sample economies and their population details are given in Table 1.

Fintech is the independent variable in the study and it is measured using three proxies: the number of ATMs per 100,000 individuals, the percentage of people who use the Internet and the number of mobile phone subscriptions per 100,000 adults. Studies are using these variables but the creation of a fintech index to eliminate the correlation effects using the PCA method is the new introduction of this study. Dependent variables are GDP per capita as a measure of economic growth, the broad money supply and bank deposit to GDP (%) as indicators of financial development. Studies with GDP, broad money supply, and bank deposits to GDP are common but analyzing these variables with the fintech index is novel. These are the author's arguments for the selection of the variables. Table 2 shows the details regarding variables, definitions, and the sources obtained.

Table 1. Sample countries.

Countries	Population	Source
Brazil	21.53 crores (2022)	World bank
Russia	14.42 crores (2022)	World bank
India	141.72 crores (2022)	World bank
China	141.22 crores (2022)	World bank
South Africa	5.99 crores (2022)	World bank

Table 2. Dependent and independent variables.

Variables	Name of variables	Symbols	Definitions	Sources
Dependent variables	GDP	GDP	GDP growth (Annual %)	WDI
	Broad money	BM	Broad money (%GDP)	WDI
	Bank deposit to GDP	BD	Bank deposit (%GDP)	WDI
Independent variables	ATM	ATMs	ATMs per 100,000 adults	WDI
	Internet users	IU	Internet users (% of the population)	WDI
	Mobile subscription penetration	MS	Mobile phone coverage (Number of subscriptions per 100 adults)	WDI

Source: https://databank.worldbank.org/source/world-development-indicators.

3.2. Construction of Fintech Index

As the independent variables are highly correlated, an index is developed for fintech. Table 3 shows the correlation magnitude of the selected variables. ATM, Internet users, and mobile subscriptions are the variables that are highly correlated and considered for building a "fintech index" using the principal component analysis method. A new, uncorrelated variable will maximize the variance present in the initial data set. Highly correlated variables are

combined into a single index by PCA which aids in dimensionality reduction. No prior study has created a comprehensive fintech index and examined the impact of financial development and economic growth on it over an extensive 20-year period, particularly in BRICS countries.

Table 3. Correlation magnitude.

Variables	Correlation magnitude	Source
ATM	0.76	World development indicators
Internet users	0.83	World development indicators
Mobile subscriptions	0.63	World development indicators

The components of fintech have internal correlations and PCA reduces the bias caused by using one variable as a proxy for another which makes it the perfect technique. This will lessen the multicollinearity among the model variables. The factors in Table 3 have been used to develop a distinct index for fintech. PCA helps in lowering the dimensionality of the variables and reducing correlated features of the variables. The outcome of PCA is we can obtain an index value with uncorrelated data also without losing much information about the initial dataset (Chen, Luo, Shen, Han, & Cui, 2020).

Table 4. Eigenvalue analysis of the covariance matrix.

Components	Eigenvalue
PCA1	2.1604
PCA2	0.3145
PCA3	0.1558

From the results of PCA, we will have the eigenvalues of the covariance matrix. An eigenvalue larger than 1 is considered for the analysis with the component having the greatest eigenvalue retaining more standardized variance than the rest (Kaiser, 1960). Table 4 shows the results of eigenvalues. For our study, PCA 1 is selected for index development because its eigenvalues is 2.1604 which is greater than one. Values from PCA 1 are considered independent variables and named as the "Fintech Index". The study consists of three econometric models as each dependent variable are analyzed separately.

$$Model\ 1: GDP = \beta 0 + \beta 1\ Fintech\ Index + \varepsilon \quad (1)$$

$$Model\ 2: BM = \beta 0 + \beta 1\ Fintech\ Index + \varepsilon \quad (2)$$

$$Model\ 3: BD = \beta 0 + \beta 1\ Fintech\ Index + \varepsilon \quad (3)$$

Equation 1 examines the fintech index using GDP, a measure of economic expansion. Equations 2 and 3 analyze BD (bank deposits to GDP) and BM (broad money supply) to determine how fintech affects financial development. These three models illustrate how fintech is affecting the financial development and economic growth of the BRICS countries.

OLS regression and panel data analysis with fixed effects have been employed in the study. The OLS model is straightforward to comprehend and offers lucid explanations of the relationships between the variables. OLS is the best effective estimator under specific conditions among unbiased linear estimators. Panel data, particularly when there are many periods can be more effective than cross-sectional data. Fixed effects models account for time-invariant, nation-specific variables like institutional quality and cultural variances that may have an impact on both the uptake of fintech and economic growth. This lessens the bias caused by omitted variables. Fintech and economic growth in emerging economies may be studied with a strong basis due to OLS and panel data analysis with fixed effects models. They provide an equilibrium between ease of use, effectiveness, and the capacity to regulate the unobserved variation.

4. RESULTS

The detailed descriptive statistics for the variables are given in Table 5. The mean values for variables ATM, Internet users, GDP per capita, broad money supply, bank deposit to GDP, and mobile subscriptions are 69.02, 36.53, 63.32, 89.34, 52.55, and 91.12, respectively. Table 6 shows the correlation between each variable. GDP per capita is having a positive correlation with all the independent variables of the fintech index. Broad money and bank deposits to GDP have positive and negative correlations with the independent variables. Correlation between all the independent and dependent variables is provided in the table.

Table 5. Descriptive statistics.

Variables	Mean	Median	S.D	Min.	Max.
ATM	69.02	63.47	49.34	2.290	185.4
Internet users	36.53	34.13	26.06	1.538	88.21
GDP per capita	63.32	65.53	39.81	468.8	159.41
Broad money supply	89.34	72.28	48.13	26.41	211.9
Bank deposit to GDP	52.55	53.27	12.11	19.09	76.54
Mobile subscriptions	91.12	89.16	48.48	1.184	169.0

Table 6. Correlation matrix.

Variables	ATM	Internet users	Mobile subscriptions	GDP per capita	Broad money supply	Bank deposit to GDP
ATM	1	0.767**	0.640**	0.820**	-0.114	-0.176
Internet users	0.767**	1	0.833**	0.767**	0.171	0.142
Mobile subscriptions	0.640**	0.833**	1	0.779**	-0.091	0.036
GDP per capita	0.820**	0.767**	0.779**	1	0.009	-0.225*
Broad money supply	-0.114	0.171	-0.091	0.009	1	0.136
Bank deposit to GDP	-0.176	0.142	0.036	-0.225*	0.136	1

Note: * and,** indicates moderately significant values.

Table 7 presents the OLS regression results from model 1 and it is clear that the fintech index and GDP per capita have a positive link. Fintech instruments are useful for quickening economic expansion. ATMs, Internet users, and mobile subscriptions all work together as independent variables to support the economic growth of emerging economies. According to the outcomes, the findings support our hypothesis 1. The fintech index's positive determinants and GDP per capita are consistent with earlier studies.

Table 7. OLS regression.

Variables	Model 1	Model 2	Model 3
GDP	9.17×10^{23} ***	-	-
BM	-	3.10×10^{10} ***	-
BD	-	-	0.232
Constant	1.91×10^{46} ***	1.69×10^{36} ***	6.39×10^{59} ***
R squared	0.684	0.377	0.016
t-ratio	13.51	−7.140	−1.203

Note: *** indicates highly significant value.

The two models (2) and (3) that are analyzed as indicators of financial development are the broad money supply and bank deposits to GDP. The fintech index has a favorable impact on broad money supply and not favorable but moderate results with bank deposits to GDP. Our findings are consistent with prior research that suggests that the penetration of fintech can spur financial development. This could back up hypotheses (2) and (3). These projections lead us to conclude that digital financial services contribute to the BRICS nations' economic growth.

Table 8 shows the p-value counts that reject the null hypothesis which holds that the random effects model is consistent. It is in favor of the fixed effects model-based panel data analysis. The suitable model between the two available models can be identified with the use of the Hausman test. According to Hausman's test, a lower p-value

supports the fixed effects model and works against the null hypothesis that the random effects model is consistent. It can be concluded that the fixed effects model fits the three econometric models the best based on the presented data.

Table 8. Hausman statistics.

Variables	Hausman test
GDP	0.000000393
BM	0.00116
BD	0.000126

Tables 9, 10, and 11 present the fixed effects method's results. Fixed effects allow us to disentangle the effects of variations in independent factors on the dependent variable while studying the same person or group over time. For each of the BRICS countries between 2002 and 2021, shifts in fintech adoption affect shifts in GDP. The statistically significant coefficient p-value < 0.05 indicates that the changes are positively influenced by the interaction between fintech and financial and economic development. Technology development has a favorable impact on developing nations' economies. Fintech penetration greatly enhances financial development. In each of the three models, the result maintains its statistical significance. As a result, fintech plays a major role in determining financial development in emerging economies. Thus, fintech greatly enhances financial development with these variables. These findings suggest that technological advancements such as ATMs and the growing number of Internet users who have digital access to financial services along with the inescapable factor of mobile subscriptions which stand for mobile money are playing a significant role in the economic growth and development of emerging countries. The LSDV R squared values obtained from fixed effects demonstrate that all models have high R square values. A desirable positive outcome for the quoted models is indicated by GDP per capita (0.788), broad money supply (0.946188), and bank deposits to GDP (0.821033). LSDV R squared (Least Squares Dummy Variable) is calculated based on the demeaned independent and dependent variables. The time-invariant effects in panel data are eliminated by demeaning. Demeaning can help with coefficient interpretation by centering the data around it and can aid in lowering the variables' multicollinearity.

Results show that the created fintech index has positive effects on GDP in both OLS regression and fixed effects methods. This outcome supports our hypothesis (1). The fintech has the potential to influence the economic growth and the obtained results are similar to earlier studies (Ozturk & Ullah, 2022). The effects of the fintech index on bank deposits to GDP are moderately favorable in OLS regression and in fixed effects method the higher t-test ratio indicates a larger difference between the variables and effects on broad money supply show favorable results in OLS regression and the fixed effects methods. It indicates that the findings are similar to the prior research which suggests that the penetration of fintech can spur financial development (Aduba et al., 2023).

Table 9. Fixed effects with the GDP and fintech index.

Variables	Results
Fintech index	3.96×10^{11} ***
GDP	1.58×10^{25}
Constant	1.04×10^{50}***
LSDV R-squared	0.788
t-ratio	7.647

Note: *** indicates a highly significant value.

Table 10. Fixed effects with BM and fintech index.

Variables	Results
Fintech index	0.0004 ***
BM	3.16×10^{49}
Constant	7.47×10^{75} ***
LSDV R-squared	0.946
t-ratio	−3.697

Note: *** indicates a highly significant value.

Table 11. Fixed effects with BD and fintech index.

Variables	Results
Fintech index	7.65×10^{14} ***
BD	1.93×10^{28}
Constant	3.70×10^{85} ***
LSDV R-squared	0.821
t-ratio	9.031

Note: *** indicates a highly significant value.

5. DISCUSSION

The generated fintech index has favorable effects on GDP in both the fixed effects approach and OLS regression, according to the results which strengthens the study's proposed hypotheses. It shows that fintech accelerates the economic growth of emerging economies. In the case of financial development, fixed effects and OLS regression approaches yield positive results about the impact of the fintech index on the broad money supply. It gives the study strong support that fintech has positive effects on the financial development of the countries. The second indicator bank deposits to GDP demonstrates that the fixed effects method's higher t-test ratio denotes a larger difference between the variables and that the fintech index's effects on bank deposits to GDP are not favorable in OLS regression which is not advantageous for the research. The advent of digital wallets and payment applications which provide practical substitutes for conventional bank accounts is a result of fintech advancements. A typical bank deposit is frequently not required when using these services to keep and transfer money. The negative correlation between bank deposits to GDP and fintech may stem from this. Another reason can be the existence of increased financial inclusion which may result in negative effects on bank deposits to GDP. The findings show that the selected nations' financial development and economic growth are positively impacted by the fintech index that was developed. The financial and economic development of a nation can assist it in achieving sustainability. Fintech innovations have the potential to support future sustainable finance as well as help achieve sustainable development goals. Examining the possibilities for developing nations is one of the main concerns regarding the effects of fintech economic and financial development.

6. CONCLUSION AND POLICY RECOMMENDATIONS

6.1. Conclusion

The study aims to explore the relationship between fintech and financial development as well as economic growth in the BRICS economies. The study employed OLS and panel data analysis for the empirical work, and it used a data set that covered the years 2002 to 2021. Two proxies such as broad money and bank deposits to GDP are used to measure financial progress. Economic growth is quantified using GDP growth values from OLS regression which indicate that the broad money supply, bank deposits to GDP, the fintech index and the GDP are all positively correlated. A large amount of the variance in the variables is shown by the R-squared score of the FE model for panel data analysis. This suggests that the financial and economic development of emerging economies could be accelerated by fintech. The results show that bank deposits as a percentage of GDP have no beneficial effects on the fintech index or the overall money supply whereas the fintech index has a favorable effect on GDP. Increased financial inclusion or the growth of fintech which encourages consumers to lessen their reliance on traditional bank accounts may be the cause of the negative effects of bank deposits on GDP. The study highlights the role that fintech plays in the financial and economic development of emerging economies. This study adds to the fintech industry's potential for financial development and economic growth, both of which will lead to the nations' achieving sustainability since the world's nations are headed toward sustainability.

6.2. Policy Recommendations

There exists a requirement for growth and flexible policies to support fintech diversification in the countries. The need to verify the efficacy of new fintech products is unavoidable and it can help to further economic development.

Investments in digital infrastructure such as high-speed internet and mobile networks should be made in developing countries. The government should focus on and support collaboration among fintech companies, banks, and other financial institutions to promote economic growth. Protection is also required for the deployment and support of innovations. Stringent consumer protection measures such as data privacy should be implemented. Monitor the impact of fintech on financial stability and economic growth, and build contingency measures for potential fintech-related hazards. There are hurdles and risks involved with fintech adoption on a global scale; cooperation is required to address this issue. Best practices and experience in fintech regulation should be shared between countries. Financial technologies can be effectively utilized to include minority groups who are not banked. As a result, achieving sustainability development goals' objectives of economic development, the eradication of poverty, and income disparity will be simple. Within the framework of the BRICS economies which are composed of the world's most populous nations, these developing countries are also highly experienced in the development of fintech. A study on this population can be used as a foundation for further studies on other least developed nations as well.

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