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The Role of FinTech in Driving Sustainable Development: A Review of Recent Advancements (2020–2024)

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Abstract: *Financial services are going through an enormous change due to the rapid growth of financial technology, or fintech, which is encouraging innovation and sustainability. Ten recent studies (2020–2024) that look at the varied impacts of fintech technologies on sustainable development are summarized in this quick summary. The use of blockchain to boost efficiency and transparency, the development of digital payment methods for financial inclusion, and the rise of green fintech solutions for environmental sustainability are all significant themes. This study also highlights the revolutionary effects that machine learning and artificial intelligence are having on risk management and customized financial services. Collectively, these studies highlight how critical fintech is to enabling a sustainable future by promoting ethical financial practices, enhancing financial accessibility, and minimizing environmental consequences. This assessment highlights the fintech industry's potential to serve the Sustainable Development Goals (SDGs) of the UN by providing an in-depth review of current trends, obstacles, and forthcoming developments within the sector.*

Keywords: *Fintech, Sustainability, Financial Services, Digital Transformation*

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Introduction

Advances in technology such as green financing, renewable energy, and smart cities have surged due to frets about sustainability (Buckley, Arner and Zetzsche, 2019). Big data analytics predicts environmental trends, blockchain assures transparency, and robotic intelligence maximizes utilization of resources (Atayah et al., 2023). These innovations highlight the value of innovation in creating a sustainable future by fostering social justice and liquidity in the economy (Lisha et al., 2022). Relative to pre-industrial levels, the 2015 Paris Climate Agreement aims to keep global warming to two degrees Celsius, or better still, 1.5 degrees Celsius. However, the ongoing increase in greenhouse gas emissions is concerning especially for countries with economies that heavily depend on fossil fuels (Udeagha & Muchapondwa, 2023). The undeveloped economies prioritize the economy above the environment, sometimes experiencing delayed technical growth (Najaf et

al., 2021). The need to combine economic expansion with environmental preservation, especially by reducing CO2 emissions, is becoming increasingly apparent. Researchers are focusing on financial technology (fintech) and green finance (GFN) to create a more sustainable and eco-friendly future ((Hao & Chen, 2022).

Financial technology, or fintech, has brought unprecedented levels of innovation, accessibility, and efficiency to the global financial industry, completely changing it. Fintech includes a wide range of applications, such as digital payments, blockchain, robo-advisors, and crowdfunding websites (Bittini et al., 2022). The rise of technology has not only redefined traditional financial services but also created new avenues for resolving some of the most urgent worldwide issues like sustainability. Together, fintech and sustainability are becoming a powerful force that may promote social justice, prosperity, and commitment to the environment (Almaqtari, 2024). The rise of green fintech is yet another promising trend. Fintech that also seeks to improve environmental sustainability is called "green fintech." (Yang et al.,2021). These constitute platforms for financing renewable energy projects, apps to promote sustainable consumption procedures, and devices for tracking and evaluating carbon footprints (Yao 2021 et al.,). Fintech companies, for instance, are designing algorithms that analyze client spending and provide details regarding their carbon effect in order to encourage customers to make more environmentally friendly decisions (Muhairi & Nobanee, 2019). Additionally, by making ecological bonds and other sustainability investment products more accessible and appealing to an increased number of investors, fintech technologies are helping drive the rise in popularity of these products ((Ryu & Ko, 2020).

The fintech sustainability triad also calls for investigation of big data and artificial intelligence (AI) (Yang et al., 2021). These technologies facilitate the evaluation of immense amounts of data to identify developments and patterns that may help shape sustainable investment choices ((Liu et al., 2021). Environmental, social, and governance (ESG) factors may be evaluated using artificial intelligence (AI)-powered structures more swiftly and efficiently than by traditional methods, offering investors with reliable data to support sustainable investment choices (Zhang et al., 2022). Furthermore, predictive analytics has the capacity to anticipate environmental possibilities and threats, enabling organizations and policymakers to cope with sustainability-related issues in a proactive manner (Chin et al., 2022). There are hurdles in the way of the intersection of fintech and sustainability. Concerns have been voiced about fintech's own

impact on the planet, in particular in light of how much energy blockchain projects like Bitcoin mining use (Hao & Chen, 2022b). It is crucial to reconcile the benefits of financial innovations with their environmental effects. In order to ensure that innovations in finance advance sustainability goals without jeopardizing consumer safety or financial stability, regulatory frameworks must also alter(Lisha et al., 2022b).

This research comprises of ten articles about fintech and sustainability. The summary covers the introduction to the research problem methodology, the studies' literature review, the findings and evaluation of each study, suggested changes, and the final words. The process of assembling the papers will help with future research as well as providing readers an improved comprehension of the intersections between fintech and sustainability.

Research Methodology

We implemented an exhaustive multi-step approach that provided an effective and systematic procedure to collecting, assessing, and evaluating vital articles on the impact of FinTech to encourage sustainability. This methodology has been developed to identify up-to-date substantial, and high-quality studies (2020–2024) from trustworthy academic sources.

Data Collection Using specific keywords associated with FinTech, sustainability, green finance, blockchain, artificial intelligence, and financial inclusion, we carried out a thorough literature search. Some credible academic databases were searched, including: Employ Google Scholar, to create a variety of scholarly and grey literature sources. Scopus to guarantee the inclusion of highly rigorous, peer-reviewed research. Use the Social Sciences Research Network (SSRN), For early-stage research findings and working publications**.** These databases mentioned above were selected because they cover academic articles in great detail, assuring access to recent and significant research on this topic.

Selection Criteria After incorporting an important set of FinTech papers, we assessed their significance and impact based on the following criteria: Citation Count: Studies with a higher numeral of citations on Google Scholar were prioritized, as citations often indicate a research paper's impact and credibility. Publication in Scopus-Indexed Journals: To ensure the research met high academic standards, we cross-verified the selected papers with Scopus, which traces peer-reviewed publications known for their intellectual rigour. Recency and Relevance: We focused on studies published between 2020 and 2024 to incorporate the latest developments in FinTech

and sustainability. Thematic Fit: Analyzed only those studies which have head on addressed FinTech's impact on sustainability, environmental considerations were included.

Filtering and Final Selection We applied additional filters based on content relevance, research quality, and practical inference to refine our selection. Following rigorous review rounds, we identified ten high-impact articles, which were then evaluated to expose important insights. The selected works listed in Table 1 offer a broad perspective on the developing relationship between sustainability and FinTech. With ensuring that our findings have a basis in productive, thematic relevance and academically sound research, this arranged methodology adds substantial worth to discussions around FinTech's role in sustainable development.

Table 1: Distribution of Journals and Publishers

S.No	Article	Author(s)	Journal
1.	Fintech and Sustainability: Do They Affect Each Other?	Cristina, Chueca Vergara and Luis Ferruz Agudo	Sustainability
2.	Fintech firms and banks sustainability: Why cybersecurity risk matters?	Khakan Najaf, Md Imtiaz Mostafiz, Rabia Najaf	International Journal of Financial Engineering
3.	A RegTech Approach to Fintech Sustainability: The Case of Spain	Salvador Cruz Rambaud, and Ariana Exp ´osito Gázquez	European Journal of Risk Regulation
4.	Impact of Green financing, FinTech, and financial inclusion on energy efficiency	Hongda Liu, Pinbo Yao, Shahid Latif Sumaira, Aslam Nadeem Iqbal	Environmental Science and Pollution Research
5.	Green FinTech: sustainability of Bitcoin	Esra Kabaklarlı	Digital Finance
6.	The role of Fintech firms' sustainability during the COVID-19 period	Amina Toumi, Khakan Najaf, Mohamed M. Dhiaf	Environmental Science and Pollution Research
7.	The drivers of environmental sustainability in BRICS economies:	Maxwell Chukwudi Udeagha, Nicholas Ngepah	World Development Sustainability

	Do green finance and fintech matter?		
8.	Sustainability, market performance and FinTech firms	Osama F. Atayah, Khakan Najaf, Md Hakim Ali, Hazem Marashdeh	Sustainability
9.	Green finance, fintech, and environmental sustainability: fresh policy insights from the BRICS nations	Maxwell Chukwudi Udeagha, Edwin Muchapondw	International Journal of Sustainable Development & World Ecology
10.	The moderating role of IT governance on the relationship between FinTech and sustainability performance	Faozi A. Almaqtari	Journal of Open Innovation: Technology, Market, and Complexity

Table 2 provides a summary of these 10 papers includes Article name, Journal Name, Publisher, Google Scholar Citation, Year, and Scopus impact factor.

Table 2: Journal Quality

Journal	**Publisher**	**Year**	**Google Scholar Citation**	**Impact Factor**	**Article Name**
Sustainability	MDPI	2021	155	3.9	Fintech and Sustainability: Do They Affect Each Other?
International Journal of Financial Engineering	World Scientific	2021	75		Fintech firms and banks sustainability: Why cybersecurity risk matters?
European Journal of Risk Regulation	Cambridge University Press	2022	7	2.9	A RegTech Approach to Fintech Sustainability: The Case of Spain
Environmental Science and Pollution Research	Springer	2022	190	5.8	Impact of Green financing, FinTech, and financial inclusion on energy efficiency
Digital Finance	Springer	2022	25	1.8	Green FinTech: sustainability of Bitcoin

Environmental Science and Pollution Research	Springer nature	2023	12	5.2	The role of Fintech firms' sustainability during the COVID-19 period
World Development Sustainability	Elsevier	2023	69	6.2	The drivers of environmental sustainability in BRICS economies: Do green finance and fintech matter?
Sustainability	Emerald	2023	10	3.9	Sustainability, market performance and FinTech firms
International Journal of Sustainable Development &World Ecology	Taylor & Francis	2023	73	4.3	Green finance, fintech, and environmental sustainability: fresh policy insights from the BRICS nations
Journal of Open Innovation: Technology, Market, and Complexity	Elsevier	2024	10	2.8	The moderating role of IT governance on the relationship between FinTech and sustainability performance

Literature Review (Articles under this particular topic)

Since the beginning of the twenty-first century, fintech services have existed, and in 2010, their feature set grew. Because of this, many studies on the topic of fintech have been released after 2010. This article addresses the sustainability of modern technology and finance. In regard to this, Fintech has effectively cemented its position as the market leader in modern services and related fields, which is lucrative and beneficial to all shareholders. For every article, a summary of the literature reviews has been presented so that the readers can assess the writers' opinion on the literature analysis. Table 3 provides a summary and overview of these ten studies. In spite of this, multiple of these articles span various subject matter and regions.

1. Fintech and sustainability were examined in the study, with a focus on how they complement each other. Clarity AI and Pensumo are two fintech efforts that are the focus of case studies and a literature review, respectively. As a fintech company with an international track record, Clarity AI assesses the environmental and sustainability impact of investments and businesses using machine learning and large-

scale data. This lets investors boost the social impact of their portfolios. Pensumo is a fintech company situated in Spain which supports saving money and ethical behavior by rewarding green actions such as recycling and providing small businesses with micro-contributions to a private pension plan. The essay addresses how, through fostering accountability, effectiveness, and accessibility to finance, fintech may support environmentally friendly expenditures and equitable financing. The article highlights how important it is to stop fake news, improve customer safety and information in the finance industry, and regulate ESG measurements. It additionally provides a range of approaches that will improve sustainability reporting and make the most of modern technologies like blockchain and artificial intelligence (Cristina et al., 2021).

2. The article highlights the inherent hazards of cybersecurity while evaluating the effects of fintech companies on banking institutions and economic inclusion. Working with neighboring fintech companies results in faster customer service, lowered customer spending, and lower expenses for operations. Nonetheless, conventional banks are now more vulnerable to incidents due to the rise in cybercrimes. Cybersecurity incidents are on increasing frequency due to the growing conduct of financial institutions and compatibility issues between IT companies and financial institutions. Since fintech businesses transfer their inherent cyber-risk to partner institutions, the publication advises financial institutions to rapidly notify cyber-attacks that occur after partnering with them. The document urges regulatory agencies to find the perfect balance between funding companies involved in fintech while supporting innovation. But there is additionally an array of difficulties with the study that need to be solved in other examinations (Najaf et al., 2021).

3. Though an overly stringent data protection rule over the EU impedes fintech's expansion, it keeps being an important partner for sustainable development. This is a problem facing every technology that manages data or uses big data to improve services. In context with the widespread use and exploitation of data in the modern digital environment, the regulation known as the General Data Protection Regulation has to be updated. The European Data Strategy aims to implement rules that apply to businesses in an evolving data management economy, comprising cloud infrastructure, organizational structures, and European data spaces. The European Cloud of Open Science will be established, with a focus on sectors including commerce, the European Green Deal, accessibility, financial services, energy, farming, public administrations, and

qualifications. It is the responsibility of governments to provide a phased legal framework that strikes a balance between the rights of people to data protection and the needs of businesses. This might mean that users pay for the consumption of data, companies protect user privacy, or customers participate to digital services. A sustainable economy relies on public policies, and more research is required to change the framework for embedding these developments into existing legal frameworks (Rambaud & Gázquez, 2022).

4. As shown in the study, trade openness and carbon dioxide energy efficiency have major consequences by income classifications, including elevated, high-medium, and low-middle income. Trade openness impacts GDP's level of carbon in addition to other factors associated with foreign direct investment. GDP has a major influence on the carbon intensity of trade openness because of two factors: global economic integration, which encourages international collaboration; and the level of economic activity rising with global business growth, which has resulted in excessive consumption of resources and environmental damage. GDP facilitates the outsourcing of sustainably harmful industries from inadequate to developed nations, thereby boosting the energy efficiency of these countries. The connection between trade openness and the carbon intensity of the E7 nations is additionally investigated in the study (Liu et al., 2021).

5. From 1990 to 2020, the impacts of GFN and fintech on ecological health in the BRICS area are studied in this paper. In this case, evaluate the causal connections between these variables over different time frames by use the CS-ARDL technique. The resultant conclusions are: (1) GFN displays an adverse influence on pollutants per person at the one percent significance level in the upcoming future indicating the adverse impact of GFN on the decrease of carbon emissions. Fintech both immediately and in the long run improves environmental quality. (2) The EKC theory is supported by the fact that GDP declines while its quadratic term increases ecological integrity. (3) The energy industry's development fosters the development of green environments (Kabaklarlı, 2022).

6. During the outbreak, fintech businesses did significantly ethically than non-fintech enterprises. The increasing acceptance of technology gave origin to the controversy. Companies, particularly financial institutions, failed to maintain ecological standards during COVID-19. Throughout the worldwide epidemic, fintech businesses triumphed in terms of both financial and environmental sustainability. According to this report, during COVID-19, fintech companies performed better on the market as the consequence of

enhanced regulations pertaining to the environment. Environmental efforts make for 10.22% of the additional market performance. The report stresses that environmental disclosure is essential for the success and proliferation of financial technology enterprises in the market (Toumi et al., 2023).

7. The paper investigates how the surroundings in the BRICS countries has been adversely affected by fintech and green finance (GFN) between 1990 and 2020. Results show that although fintech promotes environmental quality, GFN lowers the release of carbon per person. GDP initially declines when environmental quality improves, but GDP squared has a positive effect. Creativity in the fossil fuel sector helps the environment, while resource exploitation contaminates the planet. The research states that the governments of the BRICS countries required to create and reinforce their regulatory frameworks in order to support green finance efforts, stimulate transparency, and utilize green financial instruments. The beneficial effects of fintech on environmental quality has effects on policy, that includes the growth of digital payment systems, platforms for sustainable investing, and supportive governing structures (Udeagha & Breitenbach, 2023).

8. Using 1,672 company-year data from 2010 to 2019, the study investigates the effect of ESG (Environmental, Social, and Governance) declarations on the achievement of FinTech companies. The study discovered a negative correlation amongst ESG disclosure and the stock performance of FinTech businesses, with non-FinTech companies outperforming FinTech businesses with respect to of performance. The results validate the theories and are invariant under various model and the procedure adjustments. According to the report, FinTech companies should implement a methodology that incorporates ESG as a fundamental component of their governance structure, and ESG disclosures should be given prominence with the aim to promote a sustainable financial system. Since that satisfactory level of ESG disclosure is often mentioned as the reason for objective variance, regulations and lawmakers should take this into mind. Investors may only build trust in FinTech organizations after analyzing their environmental disclosures, and they are often younger than non-FinTech firms. Managers have to provide more ESG data and foresee the detrimental impact of ESG on stock performance. the authors of the study's outcomes, ESG is important in exposing fintech companies' returns and should not be overlooked while making choices regarding investments (Atayah et al., 2023).

9. From 1990 to 2020, this essay focuses into the way GFN and fintech affected ecological health in the BRICS countries. Choose to assess

the relationships between these variables across various time periods in this instance by employing the CS-ARDL technique. Those conclusions are first, in both the short and long terms, GFN demonstrates a detrimental effect on emissions per individual at the significance level of one percent, confirming that it has contributed to the reduction of greenhouse gases. Second, once instantaneously and over time, fintech increases environmental quality. Third, GDP declines, but the squared term boosts ecological integrity, demonstrating that the EKC theory is correct. Forth, the growth of the energy business assists in the development of green ecosystems (Udeagha & Muchapondwa, 2023).

10. The final section of writing addresses the ways in which computer technology administration alters the relationship between FinTech (financial technologies) and sustainability achievement in India. Three types of factors are taken into account in the study approach: economic, social, and environmental. According to the research, FinTech significantly affects sustainability performance; businesses that use it see greater rates of environmental and social sustainability as well as economic growth. The adoption of fintech and technological advancements, which all have a positive effect on sustainability performance, as well as the development of banks' tactical strategies for sustainable operations, hinge in large part on IT governance. The study showed significant positive relationships connecting FinTech and the Fiscal Component of Sustainability, suggesting that FinTech adoption is positively correlated with financial inclusion and economic development. Encouraging long-term economic processes inside financial organizations requires IT governance. Robust IT governance in conjunction with FinTech solutions fosters extended, consistent economic growth. Decision-makers, legislators as well as and specialists in the IT and financial sectors will find the findings useful. Making strategic decisions about the adoption of technology and governance laws can be aided by having an improved awareness of how IT governance reduces the impact of fintech. Environmental and sustainability performance are part of the comprehensive sustainability strategy, which emphasizes the growing importance of environmental and sustainability performance across enterprises (Almaqtari, 2024)

Table 3: Summary of the Articles

S.No	Article name	Objectives	Findings	Future Recommendations
1	Fintech and Sustainability: Do They Affect Each Other?	This paper explores the link between Blockchain and sustainability, emphasizing interactions and demonstrations of Fintech ventures like Pensumo and Clarity AI. It also provides techniques for spotting false and greenwashing actions.	The study indicated that Fintech can support green finance in enhancing the sustainability of financial institutions, and that environmentally friendly banking and Fintech have similar traits. likewise, the publication underlines the necessity for global and European legislation, mostly from the standpoint of consumer protection.	Further studies will focus on regulatory frameworks at the European and global scales that tackle user and consumer protection concerns in sustainable Fintech enterprises. By investigating several Fintech examples and highlighting vulnerabilities, methods for remediation will be proposed. It will be essential to create a strategy on each platform for implementing these measures into reality.
2.	Fintech firms and banks sustainability: Why cybersecurity risk matters?	The research shows There are significant security risks as a result of the relationship between institutions and fintech companies. thereby, the question concerns if the bank should accept this kind	The discoveries of the study have both theoretical and practical uses. By identifying a new danger related to cybersecurity for commercial banks that arises from their agreements with fintech	Financial organizations prohibited access by omitting to reveal all security risks and by keeping information hidden. Later research projects aim to explore the relationship between partner

		of collaboration to preserve its margin of profit or if it is more practical to avoid putting on sustainability risk.	corporations, this study contributes to the collection of academic literature. This research suggests that simply being aware of a habitat is going to lead to a rise in cybercrime. Commercial financial institutions ought to prioritize cyber-security measures the most attention and reevaluate their association with fintech. Due to our study, all bank-fintech relationships are susceptible to cyberattacks, and the influence of fintech partnership has no bearing of country-level qualities. Conclusions of this study propose that the fintech sandbox structure should be altered by the regulatory agencies.	institutions' stability and fintech safety issues. By utilizing a methodical econometric model, such the probit or ordinary least squares model, future study on this subject can be expanded.
3.	A RegTech Approach to Fintech Sustainability: The Case of Spain	In order to encourage a RegTech that is acceptable and advances Fintech's	The most crucial matter that requires to be handled while maintaining contemplating all the	Currently, the tendency is for leaders to develop a data economy where citizens' rights and

		growth, it ought to look at the legal issues preventing its success via the use of an analytical methodology and an extensive collection of legislative resolutions.	protections associated with this fundamental right is the legal defense of personal data. Society might ready its courts for the Digital Transformation, in this way, should not be concerned about the decrease of rights or rising disparities.	certain protections are upheld. However, if attaining GDP growth is our ultimate aim, then the purpose of rigidly enforcing the legislation to safeguard sensitive information most especially is likely to disappear in the future. The next steps in data protection will be driven by policy implications and economic interests.
4.	Impact of Green financing, FinTech, and financial inclusion on energy efficiency	The real impact of financial inclusion, sustainable financing, and fintech on the fossil fuel consumption of the E7 economies was investigated in this study.	Findings from studies suggest these finance strategies have a big effect on energy efficiency. In contrast, green finance is the most beneficial and efficient financing method for energy efficiency among the three. The differences in traits, the primary factors that lessen the value of FinTech and financial integration for energy efficiency are financing methods,	Future research is advised to look at the Blockchain transaction system and money inclusion mandates such as green bonds in order to achieve energy efficiency.

			system finances, overlapping systems, and fluctuations in the financial institution's support.	
5.	Green FinTech: sustainability of Bitcoin	In an effort to shed light on the research being done in this area, this essay aims to bridge the disconnect between bitcoins and technology for finance, or FinTech. A cashless society is predicted to be advocated as digital currencies spread and eventually supersede notes and coins.	By providing less expensive financing options to individuals from lower socioeconomic classifications, green fintech aims to tackle poverty and protect the environment. Digital currencies, together with those of central banks and the application of blockchain technology, are the main pillars on which financial is built. But the significant energy consumption of mining bitcoins raises questions about these virtual currencies' long-term sustainability.	The chances for green lending will rise as more people seek out environmentally friendly cryptocurrencies with fewer environmental impacts. Future studies ought to look at which coins use the smallest amount of energy.
6.	The role of Fintech firms' sustainability during the COVID-19 period	This research investigates the moderating influence for ecological announcements on the	According to the report, Fintech companies performed well better on environmental metrics during the pandemic than	In order to evaluate their effect on performance in the market during the epidemic, future

		commercial profitability of 48 Blockchain and 140 non-Fintech enterprises during the pandemic using information ranging from 2011 to 2022.	non-Fintech companies (78.4%). Furthermore, the market performance of these companies was found to be significantly impacted by environmental disclosures, making them essential for shareholders. The comprehension of stockholders' sensitivity to sustainability statements is greatly improved by this study.	research should include other durability proxies, such as the social and governance elements of Fintech companies. The study's constricted sample size of 2020–2021 raises the chance of a longer time and a different proxy, such COVID-19 instances yearly. Furthermore, semi structural interviews and other qualitative methods may be capable to shed more light on associations.
7.	The drivers of environmental sustainability in BRICS economies: Do green finance and fintech matter?	The paper focuses at how, between 2000 and 2018, members of BRICS would be able to attain carbon neutral through the use of fintech and green financing (GFN). Discuss the effects of natural resource rent, economic development, and energy innovation likewise.	The research supports the Kuznets Curve for Environment theory, demonstrating that environmentally friendly banking, fintech, and energy innovation have a beneficial impact on environmental sustainability whereas mineral rent and economic development have a negative impact. Additionally, the analysis	There are numerous gaps in study coverage on ecological sustainability, fintech, and green finance in the BRICS countries. inadequate information accessibility and quality might limit the scope of the investigation. Identifying long-term consequences requires longitudinal data, which may not be

			shows a unidirectional relationship among GDP and energy innovation but a bidirectional causation connection between the two variables and CO2 emissions. The authors advise prioritizing green financial goods above everything else and expanding the ability of banking institutions to offer green financing solutions.	available. Additionally, the study might not fully capture external variables which affect the link between environmental sustainability, fintech, and green finance, as well as contextual elements affecting the relationship.
8.	Sustainability, market performance and FinTech firms	This study aims to provide empirical support for the relevance of a Goldman ESG, or environmental, social, and governance, transparency index designed for American corporations, as well as to examine the environmental sustainability quality and stocks performance of FinTech companies.	The findings demonstrated a clear relationship amongst performance of stocks and the Economist ESG disclosure index, indicating the index's validity as a viability indicator. Also, according to this research, non-FinTech businesses outperform FinTech businesses in terms of sustainability and stock performance. The results reflect the stakeholder speculation, which holds that increased exposure to	Other studies can look at the explanatory influence of ESG on the success of different economic sectors. Even if every jurisdiction is in a different market, researchers may continue to dig into this subject by utilizing a worldwide population to see if the results show that market variations in the pace of ESG endeavors are occurring.

			ESG data will mitigate the issue with agency and preserve shareholder interests.	
9.	Green finance, fintech, and environmental sustainability: fresh policy insights from the BRICS nations	This article examines the combined impacts of green financing (GFN) through financial technology (fintech), altering for electricity inventiveness, job creation, and rent from natural resources, in order to achieve the area's carbon neutrality, the goals between 1990 and 2020.	Fintech, energy innovation (ENI), and GFN foster environmental sustainability. Conversely, environmental quality declines with economic development and resources in rent (NRR). Further, it has been shown that GFN, fintech, NRR, and CO2 emissions have all been related in two ways. nevertheless, has been established that CO2 emissions and GDP and ENI have a linear correlation.	Prospective study has to take into account how the green economy is impacted by green funding. The study makes use of a restricted set of data collection, although it recommends using larger data sets for more research. It also recommends applying multivariate regression approaches while looking at how carbon wealth of resources, and green goods affect industrial pollution. Additionally, the article proposes to use carbon emissions as a stand-in for environmental harm in nations that are developing.
10.	The moderating role of IT governance on the relationship between FinTech	The purpose of this research is to determine whether or not information technology	The strategic planning of banks for profitable operation, Fintech innovation, and advances	The association between sustainability, IT governance, and fintech is discussed in

and sustainability performance	governance influences the connection between technology financing usage and long-term success.	in technology is greatly aided by IT governance. Performance in sustainability is enthusiastically impacted by these variables. IT governance increases adoption. Because fintech enhances performance in terms of sustainability it advances economic sustainability. By offering sustainable and technological procedures first priority, banks that employ IT governance to promote Fintech and sustainability may reap economic advantages.	the paper. Future studies could look in other subjects. forces both external and internal. The study's cross-sectional the approach, ease and snowballing sample usage, and other factors may limit its ability to generalize to a broader audience. Longitudinal data could be used in future study to monitor the evolution and trends of these illnesses throughout time.

Future Research direction

1. Sustainability and FinTech Trends: Future research should explore additional topics related to sustainability, IT governance, and FinTech, focusing on both internal and external influencing factors. To enhance generalizability, future studies could adopt a longitudinal approach, tracking trends and developments over time, and employ more robust sampling methods beyond snowballing and convenience sampling (Almaqtari, 2024).

2. Regulatory Frameworks for User Safety: Future studies can explore regulatory frameworks for user safety in sustainable FinTech, analyze case studies to identify weaknesses, offer remedial approaches, and create platform-specific implementation strategies (Cristina et al., 2021) .

3. Digital Economy and Data Privacy: Future study should look into the balance between developing a digital economy that respects citizens' rights and the influence of GDP development on data privacy rules. It should look into policy consequences, economic trade-offs, and ways for ensuring strong data protection while supporting economic objectives (Rambaud & Gázquez, 2022).

4. Energy-Efficient Cryptocurrencies: Future research should focus on identifying and analyzing energy-efficient cryptocurrencies, assessing their environmental impact, and exploring their potential to promote green lending and sustainable financial practices (Kabaklarlı, 2022).

5. FinTech Durability and Pandemic Performance: Future research should incorporate additional durability proxies, such as social and governance factors of FinTech companies, to evaluate their market performance during the pandemic. Expanding the study period beyond 2020–2021 and using proxies like annual COVID-19 cases could provide deeper insights. Qualitative methods, including semi-structured interviews, should also be employed to explore these associations further (Toumi et al., 2023).

Conclusion

This research offers an analysis and evaluation of "fintech and sustainable development," an exciting development in the financial sector. For analysis, ten articles have been selected and shortened. To provide a description of this problem, an evaluation of all the articles on this topic has been done. Prospective studies can be promoted with the aid of "fintech and sustainability". These results illustrate fintech's crucial role in driving financial sectors forward and expediting the creative and noteworthy benefits that technology and the financial industry experience. Establishing sustainable company success is primarily dependent on management. Studies have demonstrated that the application of innovations from fintech through banks has led to substantial savings in expenses and provided flexible monetary services for everybody involved. The majority of these research focused on issues related with the fintech industry as a whole. In real terms, commercial sustainability is not exclusively about fintech and sustainability. However, there are not many studies that address fintech and sustainability. The primary limitation of the present research is the lack of detailed analysis of the notion and phenomena references and highly qualified documents on the primary subject matter, as fintech continues to be relatively fresh and continues to grow rapidly.

Therefore, further research needs to be conducted to help understand the relationship among fintech and sustainability. will give you more data as soon as it gets available. I feel that our synopsis and visualization of the ten papers that address this topic will encourage and encourage more study on the subject at hand.

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