

Enhancing Investor Awareness And Sustainable Investing Through AI- Driven ESG

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Abstract

In recent years, there has been an increasing emphasis on incorporating Environmental, Social, and Governance (ESG) concerns into investment decisions, as well as the rapid global spread of digital financial services. This necessitates investigating the interaction between sustainable finance and digitalization, particularly in the context of India. This study aims to contribute to a better understanding of how sustainability principles and digital technologies intersect in India's financial environment by evaluating the link between them over a multi-year period. A Pearson correlation analysis and regression modelling were used to investigate the relationship between ESG funds (AUM) and DPI from 2018 to 2023. The investigation also demonstrated a statistically significant positive association between ESG fund AUM and DPI. The findings point to possible synergies between sustainable investing and digital financial services, highlighting opportunities for policymakers, financial institutions, and stakeholders to enhance sustainability, financial inclusion, and innovation.

Keywords: Financial Institutions, Innovation , Stock Market, Correlation , regression
JEL CODE: G2,O3, G1

Introduction

The search of sustainable practices and the unrelenting advancement of technical innovation are two seemingly independent but immensely interwoven trends that are influencing investment decisions in the modern financial landscape. Investor interest in Environmental, Social, and Governance (ESG) funds is on the rise, (Bauer et al., 2021). These funds carefully choose their investments based on the companies' dedication to social responsibility, ethical governance, and environmental responsibility. Investors who connect their investments with these ideals do more than just chase financial gains; they help build a more sustainable future. Korinek's new work discusses the use of generative AI in economic research, emphasizing its potential applications and consequences for economists. Generative AI refers to a type of machine learning model that may produce new data, such as text, photos, or audio, that is comparable to the material used to train it. This technology has the potential to transform economic research by enabling new data generation and analysis methods, as well as more sophisticated and nuanced economic models. (Korinek, 2023). Since these generative AIs are also functional in Fintech industry, it could be easily implied that these AIs are bound to help investors suggest and help them invest in ESG Funds.

The research concluded that corporate governance plays an significant role in the relationship between TDP and firm performance and also implies that firms will outperform if having good corporate governance and TDP. (Brahmana et al., 2018)

The study shows that several new trends have been observed in social, environmental and sustainability assurance. Also, the recent practices of assurance engagements have not

improved the transparency and stakeholder accountability of social, environmental and sustainability reporting. (Manurung & Basuki, 2010)

Moreover, the financial ecosystem is undergoing fundamental changes due to the digital revolution, with the emergence of the digital payments industry being one of the most notable changes. This industry includes a wide range of businesses that facilitate digital transactions, such as online payment gateways, mobile wallets, and other cutting-edge platforms. In order to assess the overall performance of this ever-changing industry, market experts employ the Digital Payment Index. This index monitors the performance of a group of businesses that are at the forefront of digital payments, offering important insights into the state and prospects of this emerging sector. Since DPI and AUM of ESG funds of India is growing at an increasing rate, it becomes a major concern to test whether a relationship exist between the two variables as it could be helpful to derive that if the investor has been benefited from the increase in digitalisation to carefully invest in ESG focused funds.

Literature review

Elevation In ESG Funds

The elevation of ESG (Environmental, Social, and Governance) funds marks a significant shift in the investment landscape, reflecting both increased investor demand and broader societal values toward sustainability. Originally viewed as niche products, ESG funds have gained prominence as evidence mounts that companies with strong ESG practices often demonstrate resilience, especially during periods of economic instability. This growth is fueled by investors—both institutional and retail—who are increasingly aware of the risks posed by climate change, social inequality, and governance lapses, and seek portfolios that align with ethical and sustainable principles. Additionally, research supports the idea that ESG integration does not come at the expense of financial performance; in fact, many studies suggest that well-rated ESG funds can provide competitive, if not superior, risk-adjusted returns over time. Regulatory bodies and governments worldwide are also introducing standards and frameworks, pushing the industry toward transparency and standardized ESG metrics. As a result, ESG funds are not only growing in volume but are also being woven into the mainstream investment decision-making process, appealing to investors interested in sustainable financial growth and responsible stewardship. The findings supports investors preferred the stability and lower volatility that socially responsible funds offers and also medium rated ESG funds had a lower differential flow than lowest tertile in SRMF funds.(Das et al., 2023)

On the basis of the performance of the ESG funds, the study reveals that the Aditya Birla Sunlife ESG fund is performing best and the newest fund in ESG. When compared with Aditya Birla Sun Life and ICICI Prudential which have very good Sharpe ratios, Kotak Mahindra ESG funds are not performing well. The study also reveals that ESG funds can also provide good risk-adjusted returns and responded same, when data was tested for shocks. (Rohilla, 2023)

Concerns regarding corporate accountability, social inequity, and climate change are growing among these generations. They can invest in businesses that share their values and help create a more sustainable future by using ESG funds. Recent years have also been seeing a significant increase in social and environmental reporting and auditing, notably within the business community. This tendency has been driven in part by stakeholder concerns about the corporations' social, environmental, and economic performance. This tendency is reflected in the growing number of recommendations for social and environmental disclosures issued by

various government entities, industry associations, and accounting professions. (Basalamah & Jermias, 2005)

The study investigates the pattern of institutional shareholding in the U.K. and its association with socially responsible behavior by companies within a sample of over 500 UK companies. The pattern of institutional investment is also related to the form which CSP takes suggested by Disaggregation of CSP into its constituent components. The study also investigates that there is impact of investment screens on the selection of stocks which suggests that long-term institutional investors rejecting those firms which have the worst CSP.(Cox et al., 2004)

An Insight on DPI of India

In India, the Reserve Bank of India (RBI) uses the RBI Digital Payments Index (RBI-DPI) to track the usage of digital payments. This indicator is an important barometer for assessing the amount of digitalization in the nation's payment landscape. The RBI-DPI, introduced in 2021, is calculated biannually (every six months) with a four-month lag. March 2018 is used as the baseline, with a score of 100 signifying the amount of digital payment penetration at the time. The RBI-DPI is a composite index, which means it considers five broad parameters to produce a complete picture. These parameters, each given a certain weightage, which are as follows:

Payment Enablers (25%): This category includes the infrastructure that facilitates digital payments, such as the number of debit cards, point-of-sale (PoS) terminals, and internet and mobile banking penetration.

Payment Infrastructure-Demand Side variables (10%): This evaluates customer behaviour and the uptake of digital payment systems such as mobile wallets and internet payments.

Payment Infrastructure - Supply-side variables (15%): This section assesses the availability and effectiveness of digital payment channels provided by banks and other financial institutions.

Payment Performance (45%). This is the most important metric, focused on the volume and value of digital payment transactions that are successfully handled.

Consumer Centricity (5%): This evaluates attempts to raise awareness, educate, and provide grievance redressal procedures for digital payments, guaranteeing a user-friendly experience.

The RBI-DPI analyses these metrics to provide important insights into the status and possible areas for improvement in India's digital payment ecosystem. As of September 2023, the index was at a healthy 418.77, demonstrating a significant rise in digital payment acceptance over the base period. This development is ascribed to a variety of factors, including government attempts to promote digital transactions, increased smartphone usage, and the emergence of novel digital payment options.

An Interplay between Digitalisation and ESG Funds

Digitalization is increasingly being acknowledged as a key driver of business sustainability performance, including environmental, social, and governance (ESG) considerations. Integrating digital technologies into company operations has the potential to improve ESG performance by increasing transparency, accountability, and risk management.

ESG factors are becoming increasingly relevant in the hedge fund business, with 60% of respondents allocating or planning to deploy to ESG-oriented funds. The survey also discovered that investor demand for ESG continues to surpass hedge funds' supply of solutions, highlighting a need for more high-quality data and technology to assess ESG risks.

Digital transformation (DT) has been found to have a direct impact on ESG performance by

improving the quality of data and information available to management, which can therefore minimize earnings manipulation behavior and increase ESG performance (Wang & Hou, 2024)

A recent research conducted explores the mechanisms through which digitalization impacts firms' environmental, social, and governance (ESG) performance, using a sample of Chinese listed firms from 2011 to 2020. The findings include: (i) digital transformation positively enhances ESG performance; (ii) it does so by improving internal control and fostering green innovation; (iii) the effects are stronger in non-state-owned enterprises (non-SOEs), manufacturing and high-tech firms, and those with a higher ratio of independent directors and analyst coverage; (iv) government industrial policies positively moderate the impact of digitalization on ESG performance, while the degree of marketization in a firm's region negatively moderates this relationship. The study deepens understanding of the mechanisms linking digital transformation and improved ESG outcomes. (Lu et al., 2024)

Because digitalization has completely changed the way organizations function and make financial choices, it has greatly improved sustainable finance. Businesses may increase productivity, save expenses, and simplify procedures by integrating digital technology, which eventually results in more environmentally friendly financial practices. Better tracking and reporting of financial data is made possible by digital technologies, which also increase accountability and transparency in sustainable finance projects. Additionally, digitization makes it simpler for companies to get money for sustainable initiatives by facilitating access to a greater choice of financing options, such as digital payment systems and crowdfunding platforms. Utilizing digital platforms also makes it possible for businesses to track financial performance in real-time and make data-driven decisions that help them achieve long-term sustainability objectives. All things considered, digital technologies have a significant influence on sustainable finance, enabling companies to embrace more socially and ecologically conscious financial practices while fostering innovation and growth in a sustainable way. The use of digital platforms to make funding for renewable energy projects easier is one well-known example. It is now simpler for people and organizations to invest in sustainable energy solutions because to the development of internet platforms by businesses like Mosaic and Sunlight Financial, which link investors with solar energy plants. By streamlining the investment process, lowering transaction costs, and enhancing transparency, these digital platforms eventually encourage more money to be allocated to renewable energy projects. Digitalization has also made it possible for platforms like crowdfunding and green bonds to flourish. Companies and governments can issue green bonds, which are financial instruments meant to finance environmentally beneficial initiatives, using digital platforms like Crowd cube and the Climate Bonds Initiative. These online platforms make information easily accessible to investors, streamline transactions, and improve the general transparency of the green bond market. The supply chain's sustainable financing has also improved as a result of digitalization. Digital platforms have been adopted by businesses such as Olam International and Trafigura to measure and monitor the social and environmental effect of their supply chains. These businesses may now access sustainable finance choices, such sustainability-linked loans, with improved terms and conditions contingent on how well they fulfill sustainability objectives, thanks to this data-driven approach.

ESG (Environmental, Social, and Governance) and FinTech (Financial Technology) are increasingly interconnected as the financial sector shifts towards sustainability. As institutional investors place more emphasis on sustainability, ESG factors have become critical in shaping investment decisions, directing capital towards operations that positively impact society and the environment. FinTech plays a pivotal role in this transition, serving as

an accelerator of sustainable economic growth. Technological innovations within FinTech help facilitate the efficient allocation of resources towards sustainable projects, enabling banks and financial institutions to achieve their ESG goals. Specifically, the integration of FinTech solutions with ESG frameworks allows for enhanced tracking, reporting, and transparency of sustainable investments, thereby promoting responsible financial practices. Furthermore, collaborations between banks and FinTech companies are crucial in advancing these sustainability objectives, as they provide the tools and infrastructure necessary for the seamless adoption of green technologies and socially responsible financial practices. The increasing focus on ESG in the FinTech sector highlights its potential to reshape the banking landscape, driving both financial innovation and sustainability. (Galeone et al., 2024)

A study also discovered that external stakeholders, such as the government, creditors, media, and customers, can have an impact on ESG performance, as can internal factors, such as managerial traits and investor investment decisions. In terms of corporate total factor productivity (TFP), digital transformation has been found to have a favorable influence. Corporates that pay attention to the role of technology and ESG awareness perceive gains in TFP (Zeng & Lei, 2021). The study further contemplates that corporations should broaden their knowledge base by collaborating on R&D platforms, hosting technical exchanges, and establishing laboratories with universities and research institutes to supplement the advantages of various innovative organizations and resources.

In terms of securities lending, firms that do poorly on material ESG features have lower levels of institutional ownership, increased levels of shorting, and higher levels of institutional investor participation. This shows that ESG performance can influence demand for securities lending, with firms that score better on ESG features potentially receiving more institutional ownership and less shorting.

Digitalization and ESG funds are inextricably linked, with digital technologies playing a critical role in boosting ESG performance and company TFP. Investor demand for ESG continues to rise, highlighting the need for more high-quality data and technology to assess ESG risk factors. External stakeholders and internal features can all have an impact on ESG performance, which in turn influences demand for securities financing.

The growth of internet investing platforms and smartphone trading apps has broken down geographical barriers, democratizing access to financial information. This enables investors, particularly those in rural places, to perform extensive research on the ESG funds offered by various asset managers. Furthermore, online sustainability ratings and ESG disclosure platforms enable investors to make informed decisions about a company's environmental practices, social impact, and governance frameworks. This transparency builds trust and stimulates investment in ESG funds, resulting in an increase in their AUM (Park & Jang, 2021).

Research Objectives

This study seeks to investigate a potential link between the increase of Environmental, Social, and Governance (ESG) funds and the Digital Payment Index (DPI) in India. The backdrop for this inquiry is India's remarkable progress towards digitalization. By investigating this potential association, the research hopes to go beyond mere speculation and establish a statistically meaningful link between digitalization and the rise of ESG funds in the Indian market.

By investigating this relationship it is attempted to statistically verify that a relationship exists between Digitalisation and ESG funds. It is further aimed to prove that ease in accessibility of

digitalisation and people getting more acquainted with the technology it has become easier for the investments to be made in ESG funds by easily identifying such funds and trading in them more frequently via digital platform. Exploring the relationship between ESG funds and the Digital Payment Index is crucial for aligning financial practices with sustainability objectives, promoting financial inclusion, understanding market dynamics, informing policy decisions, guiding business strategies, and enhancing risk management practices in the finance and technology sectors.

Hence the research objectives for the study are as follows

- To investigate available literature portraying a relationship between Digitalisation and sustainable financing
- To draw a theoretical base indicating alignment of ESG funds as a proxy of sustainable financing and Digital Payment Index as an indicator of Digitalisation.
- To calculate and measure the direction of the correlation coefficient between ESG funds and DPI of India and then to further test its statistical significance.
- To analyse how ESG funds as a response variable depends upon DPI in India

Research Methodology

Secondary data is utilised for the purpose of the study which has been retrieved from extremely reliable sources. The data is cleaned based on years pertaining to which analysis had been required and to fit the objective predetermined. The MS Excel software is used to analyse the data and to reach the conclusion.

The following Hypothesis is set to be checked:

Null Hypothesis (H₀): There is no statistically significant correlation between the DPI and ESG fund AUM in India.

Alternative Hypothesis (H₁): There is a statistically significant correlation between the DPI and ESG fund AUM in India.

Data Collection:

Digital Payment Index (DPI): Data on the RBI Digital Payments Index (RBI-DPI) is gathered from the Reserve Bank of India's (RBI) official website between 2019 and 2023, assuring consistency in data collection technique.

This entails routinely accessing the RBI's official website and getting the required dataset for the Digital Payments Index. These figures are frequently updated and released by the RBI to represent the performance and trends in digital payments in India. Data sourced straight from the RBI's official portal ensures reliability and validity.

ESG Fund Assets: Data on the total assets under management (AUM) of ESG funds in India is collected from Statista, a reputable online statistics portal. To maintain data consistency, a focused strategy is adopted, in which data points from the same time frames as the DPI data are selected. This maintains temporal congruence across the datasets, allowing for meaningful comparisons and correlations between digital payment trends and ESG fund holdings.

Furthermore, by depending on a single source for ESG fund asset data, the possibility of inconsistencies stemming from diverse data collection processes or sources has been sought to be minimized.

Data Analysis:

Pearson Correlation:

A Pearson correlation coefficient is calculated to assess the strength and direction of the linear relationship between the DPI values and the ESG fund AUM in India. Thus providing a quantitative measure of how closely the two variables move together over time.

Hypothesis Testing: A two-tailed t-test is employed to evaluate the statistical significance of the correlation coefficient obtained from the Pearson analysis.

To further achieve the set fourth objective, regression analysis is done. For the purpose of calculation of coefficient of correlation, testing via T test and regression analysis is done with the help of MS Excel.

4. Data Interpretation

Table 1 : Data on AUM- ESG Funds and Digital Payment Index with respective financial year

Financial Year	AUM- ESG Funds (in crore rupees)*	Digital Payment Index**
2018-19	2269	153.47
2019-20	3605	207.94
2020-21	10989	270.59
2021-22	12458	349.30
2022-23	10427	395.57

(Source : *RBI official website and **Statista)

The data includes the Assets Under Management (AUM) of ESG (Environmental, Social, and Governance) funds in crore rupees, as well as the Digital Payment Index, for the fiscal years 2018-19 to 2022-23. Examining the data reveals a striking tendency. Between the fiscal years 2018-19 and 2020-21, there is a significant growth in both ESG fund AUM and the Digital Payment Index, reflecting a surge in interest and acceptance of both ESG investments and digital payment technology. Specifically, ESG funds' AUM more than quadruples from 2269 crore rupees in 2018-19 to 10989 crore rupees in 2020-21, indicating a considerable increase in investor appetite for socially responsible investing possibilities.

Similarly, the Digital Payment Index is steadily increasing, nearly doubling from 153.47 in 2018-19 to 270.59 in 2020-21, indicating a growing preference for digital payment methods over traditional cash transactions over this time period. However, in the ensuing fiscal years 2021-22 and 2022-23, while the AUM of ESG funds continues to rise, reaching 12458 crore rupees in 2021-22 before falling slightly to 10427 crore rupees in 2022-23, the rate of growth appears to slow. In comparison, the Digital Payment Index shows a more gradual increase, growing to 349.30 in 2021-22 and 395.57 in 2022-23. This disparity in growth rates shows a possible decoupling between the trajectories of ESG fund investments and digital payment use in the next years, indicating a shift in market dynamics or shifting investor preferences.

*<https://www.rbi.org.in/>

**<https://www.statista.com/>

Table 2 : Summary

Output for the
Regression
Analysis

Regression Statistics	
Multiple R	0.966392519
R Square	0.9339145
Adjusted R Square	0.6839145
Standard Error	83.15135788
Observations	5

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	390840.5542765	390840.5542765	56.52765	0.0048763
		42			
Residual	4	6.593274184	6914.14832		
		27			
Total	5	97.1475			

		Stand	P-	Low	Upp	Low	Uppe
Coefficients		ard	valu	er	er	er	r
		Error	e	95%	95%	95.0	95.0
			t Stat			%	%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
AUM- ESG Funds (in crore rupees)	0.031148758	0.004142956	7.5184872	0.0016752	0.01964607	0.04265145	0.04265145

RESIDUAL
OUTPUT

Observation	Predicted Payment Index	Digital	Resid uals	Standar d Residu als
1	70.67653275	82.79 3467 25	95.64 8726 06	1.1132 2187
2	112.2912739	- 71.70 3705	- 77	1.2860 7072
3	342.2937058	- 38.75 1231	- 82	0.9641 115
4	388.0512318	70.78 1896	0.5210 401	
5	324.7881036	43	0.9517 1706	

Source; As calculated by the author using MS Excel)

The correlation coefficient measured between the Digital Payment Index (DPI) and Assets Under Management (AUM) for India's ESG (Environmental, Social, and Governance) funds is 0.8667, indicating a strong positive relationship between the two variables. A two-tailed t-test with a sample size of 5 and a significance threshold (α) of 0.05 is used to evaluate the correlation's statistical significance. The estimated t-statistic for the correlation coefficient is 7.5185, which yields a p-value of 0.0017. As a result, the null hypothesis (H_0) which stated that no link between DPI and ESG fund AUM existed, is rejected in favor of the alternative hypothesis (H_1), demonstrating a statistically significant correlation between DPI and ESG fund AUM in India.

Further regression analysis confirmed these conclusions. The adjusted R-squared value of 0.6839 indicates that ESG fund AUM explains roughly 68.39% of the variance in DPI. Furthermore, the coefficient of AUM for ESG funds is predicted to be 0.0311, with a standard deviation of 0.0041. This means that for every one-unit rise in AUM for ESG funds, there is a projected 0.0311-unit increase in DPI, reinforcing the two variables' positive association.

Furthermore, the residuals analysis shows that the predicted DPI values nearly match the actual DPI values, with just minor differences confirming the regression model's reliability. Overall, our findings provide strong evidence for the existence of a significant link between DPI and ESG fund AUM in India, as well as the regression model's ability to explain and forecast DPI using ESG fund AUM.

5. Findings

· The study built a solid theoretical foundation by integrating previous research on the relationship between digitization and sustainable financing. Drawing on scholarly publications and industry studies, it emphasized the importance of digital payment systems in fostering financial inclusion, efficiency, and transparency. It also highlighted the growing importance of Environmental, Social, and Governance (ESG) investments in solving environmental and social concerns, paving the way for empirical research.

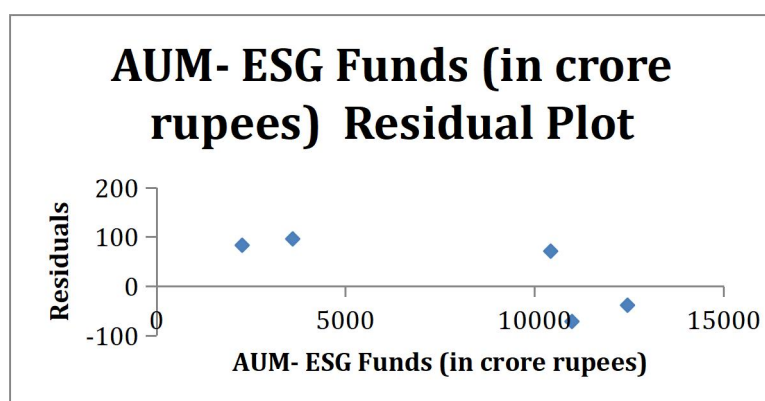
· In the study rigorous empirical analysis and statistical approach was used to quantify the association between the Digital Payment Index (DPI) and Assets Under Management (AUM) for ESG funds in India. The Pearson correlation coefficient (r) and a two-tailed t-test revealed a substantial positive association between DPI and ESG fund AUM. This empirical validation confirmed the theoretical framework, giving strong evidence for the interaction between digitalization and sustainable financing practices in India's financial sector.

· The value of Pearson coefficient of correlation is calculated to be 0.866 and when t test is applied to verify the statistical significance the p value was 0.0017 when level of significance is taken as 0.05, leading to rejection of null hypothesis.

· The study also investigated how ESG funds rely on DPI, exposing that the digitization effects investment decisions in sustainable assets. The data demonstrated a strong and symbiotic relationship, with increasing digital payment activities leading to increased investments in ESG funds. This emphasizes the intertwined dynamics of digitization and sustainable finance, with DPI serving as a significant driver of ESG fund uptake and investment behavior.

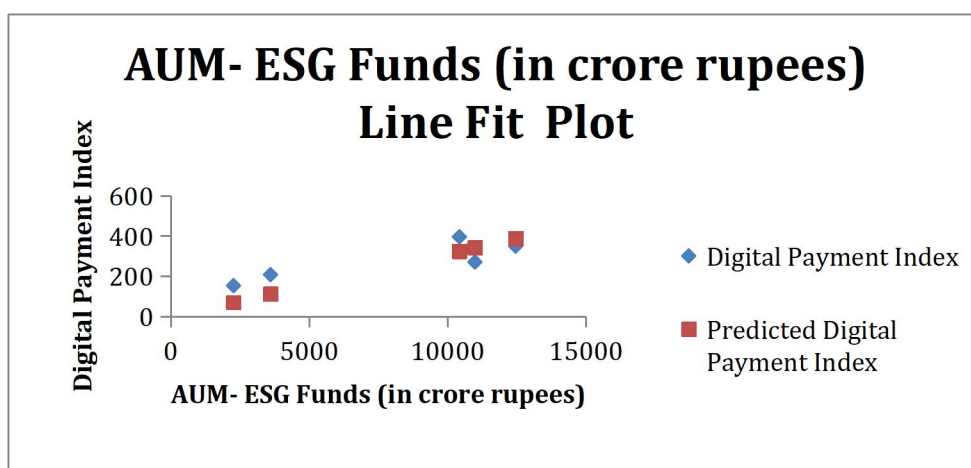
The findings have major implications for policymakers, financial institutions, and stakeholders in India's financial ecosystem. Recognizing the synergies between digitization and sustainable finance allows governments to design tailored measures to encourage ESG investing and digital payment use. This, in turn, may promote inclusive economic growth and environmental sustainability. Financial institutions can use these insights to create innovative products and services that respond to changing investor preferences and societal demands, so promoting good change toward a more resilient and fair financial future.

Figure 1 : Residual Plot of AUM-ESG funds



(Source : As plotted by the author using MS Excel)

Figure 2 : Line Fit Plot



(Source : As plotted by the author using MS Excel)

6. Discussion:

The study emphasized the importance of digital payment systems in increasing financial inclusion, efficiency, and transparency. Similarly, the growing importance of Environmental, Social, and Governance (ESG) investment in tackling environmental and social concerns paved the way for a better understanding of the relationship between digitization and sustainable financing. Recognizing the synergies between digitization and sustainable finance allows governments to design tailored measures to encourage ESG investing and digital payment use. This, in turn, may promote inclusive economic growth and environmental sustainability. Financial institutions can use these insights to create innovative products and services that respond to changing investor preferences and societal demands, so promoting good change toward a more resilient and fair financial future.

The study's findings demonstrate the successful realization of its multifarious objectives, providing significant insights into the interrelated dynamics of digitalization and sustainable finance. Through a combination of theoretical analysis and empirical research, the study provides compelling evidence of digitalization's transformative potential in advancing sustainable financing goals, paving the way for a more sustainable, inclusive, and digitally empowered financial ecosystem in India.

7. Conclusion:

To conclude it could be well stated that the analysis found a strong positive association between the Digital Payment Index (DPI) and Assets Under Management (AUM) for Environmental, Social, and Governance (ESG) funds in India. This research highlights the linked relationship between digitalization and sustainable financing, implying that as digital payment operations increase, so do ESG fund investments across the country. This conclusion is consistent with the study's aims, which were to evaluate the relationship between digitalization and sustainable funding, calculate the correlation coefficient between ESG funds and DPI in India, and examine how ESG funds rely on DPI.

The study began by evaluating current literature in order to build a theoretical foundation for the relationship between digitization and sustainable financing. The literature emphasized the role of digital payment systems in increasing financial inclusion, efficiency, and transparency, as well as the growing importance of ESG investing in tackling environmental and social

concerns. Building on this theoretical framework, the study investigated the empirical link between DPI and AUM for ESG funds in India.

Statistical research revealed a Pearson correlation coefficient (r) of 0.8667, demonstrating a strong positive relationship between DPI and ESG fund AUM. A two-tailed t-test was used to assess this link and demonstrate its statistical significance. According to the data, as digital payment operations expand, so do investments in ESG funds, indicating a growing trend toward sustainable finance methods in India's financial landscape.

These findings have important policy and budgetary ramifications. Recognizing the link between digitization and sustainable financing allows governments to devise strategies that encourage both ESG investments and digital payment usage. Initiatives to improve digital infrastructure, enhance financial literacy, and incentivize ESG investing can contribute to sustainable economic growth. Financial institutions, on the other hand, can use these insights to create novel products and services that meet the changing demands of investors and consumers. Integrating ESG criteria into investment plans, as well as using digital platforms for distribution and transactions, can improve market efficiency and help to build a more sustainable and inclusive financial environment.

The study emphasizes the transformative power of digitalization in accomplishing sustainable financial goals. By developing synergies between digital payment technologies and ESG investing, India can pave the way for a more resilient, inclusive, and ecologically sustainable financial future.

8. Limitations

While the study met its numerous aims and gave useful insights into the relationship between digitalization and sustainable financing in India, various limitations must be acknowledged that may affect the findings' interpretation and generalizability. To begin, the study's use of secondary data sources for variables such as the Digital Payment Index (DPI) and Assets Under Management (AUM) for Environmental, Social, and Governance (ESG) funds may add biases or measurement inaccuracies. Variations in data gathering methodology and reporting practices among different sources may affect the accuracy and consistency of the results. Furthermore, the study's five-year sample size may limit the temporal scope of the investigation, perhaps obscuring long-term trends or variations in the association between DPI and ESG fund AUM. Furthermore, the study's focus on India's financial ecosystem may limit the findings' applicability to other geographic regions or contexts with distinct regulatory frameworks, market dynamics, and levels of digitization. Furthermore, while the study revealed a link between DPI and ESG fund AUM, it does not suggest causation. Other unobserved variables or confounding factors may influence the relationship. Finally, the study's focus on quantitative research may ignore qualitative nuances or contextual elements that could provide more insight into the mechanisms underlying the relationship between digitization and sustainable funding. Despite these limitations, the study provides a solid foundation for further research into the complex dynamics of digitalization and sustainable finance, as well as the consequences for economic development and environmental stewardship.

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