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The Role of Financial Technology in Enhancing ESG Performance through Reducing Financial Constraints

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ABSTRACT

The rapid development of Financial Technology (FinTech) has significantly transformed modern financial systems and created new opportunities for firms to enhance sustainability practices. This study aims to examine the role of FinTech in improving Environmental, Social, and Governance (ESG) performance through the reduction of financial constraints faced by firms. The study employs a literature review approach by analyzing reputable scholarly articles indexed in Google Scholar published over the last five years. The analysis was conducted through the identification, classification, and synthesis of literature discussing the relationships among FinTech, financial constraints, and ESG performance. The findings indicate that FinTech enhances firms' access to financing, reduces information asymmetry, and improves the efficiency of financial services. These improvements contribute to the alleviation of financial constraints, enabling firms to allocate greater resources toward environmental, social, and governance initiatives. Furthermore, stronger ESG implementation is associated with higher firm value, improved investment efficiency, increased innovation, and long-term sustainability. The study concludes that the integration of FinTech and ESG represents an important strategic approach for creating sustainable value and strengthening corporate competitiveness in the digital economy era.

Keywords: *ESG, Financial Constraints, Financial Technology, Sustainability.*

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1. | INTRODUCTION

The development of digital technology has driven significant transformations in various sectors of the economy, including the financial sector. The emergence of financial technology (FinTech) is one of the innovations that changes the way financial services are provided, accessed, and utilized by companies and the public. FinTech leverages technologies such as big data, artificial intelligence, cloud computing, and blockchain to improve the efficiency of financial services and reduce various obstacles that have arisen in the conventional financial system (Chen et al., 2019). The presence of FinTech not only provides economic benefits through increased efficiency and productivity, but also has the potential to support the achievement of sustainable development goals through wider and more inclusive access to finance (Demir et al., 2022).

At the same time, attention to the company's sustainability issues continues to increase. Investors, regulators, and various stakeholders are increasingly considering environmental, social, and governance (ESG) aspects as important indicators in assessing the quality and long-term prospects of companies. ESG is no longer seen as a voluntary activity, but rather has evolved to become an integral part of modern business strategy. Companies that have good ESG performance tend to gain a more positive reputation, a higher level of investor trust, and more sustainable growth opportunities than companies that ignore these aspects (Fatemi et al., 2018). In addition, ESG performance has also been shown to have a positive relationship with company value and long-term competitiveness (Avramov et al., 2022).

Nonetheless, ESG implementation often faces various obstacles. Activities related to environmental protection, social responsibility, and strengthening governance require a lot of investment. Many companies face limited resources and difficulty obtaining adequate financing to support various ESG programs. This condition causes companies to prioritize operational activities that are oriented towards short-term profits over sustainability investments whose benefits can only be felt in the long term (Tan & Zhu, 2022). Thus, financial constraints are one of the main factors that can hinder the improvement of a company's ESG performance.

In this context, FinTech is seen as having the potential to help companies overcome various financing constraints. The use of digital technology allows financial institutions to obtain more accurate information about the risk profile of borrowers so that they can reduce information asymmetry and reduce transaction costs. In addition, FinTech also increases companies' access to funding sources that were previously difficult to reach through traditional financial systems (Ding et al., 2022). Through this mechanism, FinTech has the potential to create a more conducive environment for companies to implement various ESG initiatives more effectively and sustainably.

Although the literature on ESG and FinTech has grown rapidly in recent years, most research still focuses on the impact of ESG on company value, cost of capital, and financial performance. On the other hand, research on the factors driving the increase

in ESG, especially from the perspective of FinTech development, is still relatively limited. Wang et al. (2022) emphasized that the relationship between FinTech developments and ESG performance still needs further exploration, especially regarding the mechanisms that explain how FinTech can improve ESG implementation in companies. The research gap shows the need for a more comprehensive study on the role of FinTech as a driving factor for corporate sustainability.

Based on this description, this study aims to examine the relationship between FinTech developments and corporate ESG performance through a literature review approach. In particular, this study seeks to explain how FinTech can contribute to improving ESG performance through reducing financing constraints and increasing access to financial resources. The results of the research are expected to make a theoretical contribution to the development of the literature on sustainability and digital finance and become the basis for further research that discusses the integration of financial technology and corporate sustainability practices.

2. | LITERATURE REVIEW

Financial Technology

Financial Technology (FinTech) refers to the use of digital technology to improve the efficiency, accessibility, and quality of financial services. Technological developments such as artificial intelligence, big data analytics, cloud computing, and blockchain have encouraged the emergence of various innovations in the financial sector that allow transactions to be carried out faster, cheaper, and more transparently. FinTech is not only changing the way individuals access financial services, but it also provides significant benefits for companies through increased access to financing sources and reduced transaction costs. The presence of FinTech allows financial institutions to obtain more accurate information about customer risk profiles so that they can reduce information asymmetry that has been an obstacle in the financing process (Chen et al., 2019).

In addition to improving the efficiency of the financial system, FinTech also plays a role in expanding financial inclusion and strengthening companies' ability to gain access to capital. The digitalization of financial services allows companies to obtain a more flexible funding alternative to conventional financing mechanisms. In the context of organizations, easy access to financing can support long-term oriented investment, innovation, and business development activities (Demir et al., 2022). Previous research has shown that the development of FinTech is able to reduce the financial constraints faced by companies, thereby increasing the ability of companies to make strategic investments that require large resources (Ding et al., 2022). Therefore, FinTech is seen as one of the important factors that can support the achievement of corporate sustainability goals through strengthening financial capacity and increasing operational efficiency.

ESG Performance

Environmental, Social, and Governance (ESG) is a concept used to measure a company's level of sustainability based on environmental performance, social responsibility, and corporate governance practices. ESG is developing into one of the main indicators used by investors and stakeholders in evaluating the quality of management and the long-term prospects of a company. The environmental dimension includes natural resource management and environmental impact reduction, the social dimension relates to the company's relationship with employees, consumers, and society, while the governance dimension focuses on transparency, accountability, and the effectiveness of organizational decision-making. Companies that have good ESG performance tend to gain a higher level of trust from various stakeholders so that they are able to create a sustainable competitive advantage (Fatemi et al., 2018).

Previous literature shows that ESG implementation provides a variety of benefits for companies. Good ESG performance can increase company value, strengthen an organization's reputation, and reduce risks faced in the long run. In addition, ESG also contributes to improving investment efficiency and the quality of corporate decision-making as it encourages more responsible and transparent business practices (Benlemlih & Bitar, 2018). More recent research has found that companies with high ESG performance tend to have better innovation capacity as well as greater ability to create sustainable value for stakeholders (Tang, 2022). Therefore, ESG is not only seen as a compliance instrument, but also as an important strategy to support the sustainability and growth of companies in an increasingly competitive business environment.

Financial Constraints and ESG Performance

Financial constraints are conditions when companies face limitations in obtaining external financing sources needed to support operational and investment activities. Financing constraints generally arise due to high capital costs, limited access to credit, and information asymmetry between companies and fund providers. From a sustainability perspective, financial constraints are one of the main obstacles for companies to implement various ESG programs because most activities related to environmental protection, social development, and governance improvement require long-term investments at relatively large costs. When companies experience limited funds, management priorities are often more focused on achieving short-term financial goals than sustainability investments whose economic benefits can only be felt in the future (Zhai et al., 2022).

A number of studies show that financial constraints have a negative relationship with ESG implementation. Companies that have difficulty obtaining funding tend to have lower ability to develop green innovations, improve the quality of governance, and run social responsibility programs in a sustainable manner. In contrast, companies that have adequate access to finance can allocate greater resources to support ESG

activities and create long-term value for stakeholders (Tan & Zhu, 2022). In the context of digital finance, the development of FinTech is seen as able to reduce financing barriers through increased access to sources of funds, reduced transaction costs, and reduced information asymmetry. Therefore, financial constraints are often positioned as an important mechanism that explains the relationship between FinTech developments and improved ESG performance of companies (Wang et al., 2022).

3. | RESEARCH METHOD

This study uses a qualitative approach with a literature review method to examine the relationship between the development of Financial Technology (FinTech), financial constraints, and Environmental, Social, and Governance (ESG) performance. Literature studies were chosen because they allow researchers to gain a comprehensive understanding of the development of concepts, theories, and empirical findings that have been produced by previous research related to the topic being studied. Through this approach, the research seeks to identify patterns of relationships between variables, find research gaps, and formulate conceptual synthesis that can explain the role of FinTech in supporting the improvement of corporate ESG performance.

The data used in this study are secondary data from various scientific sources, especially reputable international journal articles that are at least indexed by Google Scholar and published over the last five-year period. The selection of the period was made to ensure that the study used represents the latest developments regarding FinTech and ESG. The collected literature includes research that discusses Financial Technology, ESG performance, financial constraints, digital finance, sustainability, corporate governance, and stakeholder theory. Literature sources are obtained through searching various academic databases by considering the relevance of the topic, the quality of the publication, and the theoretical and empirical contribution to the discussion of the research.

The analysis process is carried out through several stages. The first stage is the identification and selection of literature that is in accordance with the research objectives. The second stage is in the form of literature classification based on the main theme, namely FinTech, ESG performance, and financial constraints. The third stage is carried out by examining the concepts, theories, methodologies, and research results contained in each article. Furthermore, a comparative analysis was carried out to identify similarities, differences, and trends in previous research results. The final stage is a synthesis of literature that aims to build a conceptual framework on how FinTech developments can affect ESG performance through the reduction of financial constraints faced by companies.

Through the literature study method, this study not only presents a summary of the results of previous research, but also integrates various theoretical and empirical perspectives to produce a deeper understanding of the relationship between financial technology innovation and corporate sustainability. Thus, the research results are

expected to make an academic contribution to the development of the digital finance and sustainability literature and become a reference for future research that examines similar themes.

4. | RESULTS

The results of the literature study show that the development of Financial Technology (FinTech) has a close relationship with the improvement of the company's Environmental, Social, and Governance (ESG) performance. Various studies published over the past five-year period indicate that digital transformation in the financial sector not only generates economic benefits in the form of increased transaction efficiency and access to financing, but also contributes to the achievement of corporate sustainability goals. These findings show that FinTech has evolved from just an instrument of financial innovation to one of the strategic factors that can support the implementation of sustainable business practices.

Literature review shows that FinTech plays an important role in reducing barriers to access to funding sources. Chen et al. (2019) explained that the use of digital technology allows the process of collecting and processing information to be faster and more accurate so that it can reduce information asymmetry between companies and financial institutions. The reduction of information asymmetry has an impact on increasing the trust of fund providers in the company so that the opportunity to obtain financing becomes greater. These findings are reinforced by Wang et al. (2020) who found that digital finance contributes to improving the efficiency of the financial system through more effective transaction processes and lower costs.

In addition to improving financial efficiency, FinTech developments have also proven to be able to expand financial inclusion. Demir et al. (2022) explain that financial technology innovations allow access to financial services to be more open to various user groups, including companies that previously experienced limited access to formal financing sources. This condition provides greater opportunities for companies to obtain the necessary capital to support various long-term investments, including investments related to ESG activities. Thus, FinTech plays an instrument that strengthens the financial capacity of companies while improving their ability to execute sustainability strategies.

The results of the study also show that financial constraints are one of the factors that are most often identified as obstacles to ESG implementation. Various activities related to environmental protection, social development, and governance improvement require a relatively large allocation of resources. Tan and Zhu (2022) explained that limited financing can reduce the ability of companies to make green investments, environmental innovations, and improve the quality of corporate governance. This condition causes the company to focus more on achieving short-term financial goals than sustainability investments whose benefits can only be felt in the long term.

Other findings show that companies with low levels of financial constraints tend to have better ESG performance than companies that experience financing difficulties.

Zhai et al. (2022) found that companies' ability to obtain adequate sources of funding affects their capacity to develop green innovations and improve the quality of ESG implementation. These results indicate that the availability of financial resources is an important factor in supporting the success of the company's sustainability program.

The relationship between FinTech and ESG is increasingly visible through the mechanism of reducing financial constraints. Ding et al. (2022) show that the development of FinTech contributes to the reduction of financing constraints faced by companies through increased access to credit and the provision of alternative sources of more flexible funding. When financing barriers are reduced, companies have a greater ability to allocate resources to ESG-related activities. Thus, financial constraints can be understood as a mechanism that explains how FinTech is able to drive the improvement of a company's ESG performance.

The results of the literature synthesis also show that ESG has become an important indicator in assessing company quality. Fatemi et al. (2018) stated that companies with good ESG performance tend to obtain higher corporate value because they are considered to have better ability to manage long-term risks. In addition, ESG also increases investor confidence in the company, thereby strengthening the attractiveness of investment. These findings show that ESG not only provides social and environmental benefits, but also generates significant economic benefits for companies.

Other research shows that ESG implementation contributes to improving a company's investment efficiency. Benlemlih and Bitar (2018) found that companies that effectively implement social responsibility practices have better ability to allocate resources so as to generate more efficient investments. The findings reinforce the view that ESG can be a strategic instrument that supports a company's long-term success.

In the context of financial markets, ESG also has an influence on investors' risk perceptions. Eliwa et al. (2021) show that companies with good ESG practices tend to earn lower debt costs than companies with weak ESG performance. This is because investors and creditors value companies with high ESG quality as more responsible entities and have lower risk. Thus, increasing ESG can help companies gain access to more favorable financing.

The results of the study show that the relationship between ESG and corporate innovation is also quite strong. Tang (2022) found that companies with high ESG performance have a greater tendency to produce innovations that support sustainability. ESG encourages companies to develop new technologies, processes, and strategies that can improve efficiency while reducing negative impacts on the environment. These findings indicate that ESG is not only the result of a company's success, but can also be a driver of innovation that creates added value for organizations.

In addition, Broadstock et al. (2021) show that companies with good ESG performance have stronger resilience in the face of economic uncertainty. Effective ESG practices help companies build better relationships with stakeholders, thereby improving the organization's ability to deal with various external challenges. These

results strengthen the argument that ESG is an important element in a company's sustainability strategy.

Studies that specifically address the relationship between FinTech and ESG show consistent results. Wang et al. (2022) found that the development of FinTech has a positive influence on ESG performance through the reduction of financial constraints faced by companies. The study shows that companies operating in an environment with a high FinTech development rate tend to have better ESG performance than companies that are in an environment with a low FinTech development rate. These findings are empirical evidence that strengthens the relationship between digital finance and sustainability.

Similar findings were also found by Du et al. (2022) who stated that FinTech developments are able to improve the quality of corporate ESG through increasing financing efficiency and strengthening the company's ability to carry out sustainability investments. The research shows that the benefits of FinTech are not only limited to economic aspects, but also include the social and environmental dimensions that are a major part of ESG.

Overall, the results of the literature study show a consistent pattern of relationships between FinTech development, the reduction of financial constraints, and the improvement of ESG performance. FinTech acts as a driving factor that strengthens access to financial resources, while the reduction of financial constraints allows companies to allocate resources more optimally to support sustainability activities. At the same time, effective ESG implementation produces various benefits for companies, ranging from increasing company value, investment efficiency, innovation, to strengthening organizational resilience. The findings indicate that the integration of financial technology and sustainability strategies is one of the increasingly important approaches in supporting long-term value creation for companies and stakeholders.

5. | DISCUSSION

The results of the literature study show that the development of Financial Technology (FinTech) has a significant role in supporting the improvement of Environmental, Social, and Governance (ESG) performance of companies. These findings reinforce the view that digital transformation in the financial sector not only generates economic benefits, but also creates a positive impact on the achievement of corporate sustainability goals. FinTech's ability to speed up transaction processes, improve information quality, and expand access to financing allows companies to obtain more adequate resources to run various ESG programs. Thus, the development of financial technology can be seen as one of the external factors that support the creation of more sustainable business practices.

The findings of this study are in line with Wang et al. (2022) who stated that FinTech developments contribute to improving ESG performance through the reduction of financial constraints faced by companies. In this perspective, FinTech not only serves as a financial transaction tool, but also as a mechanism that helps companies gain access

to a wider and more efficient source of financing. When financing barriers are reduced, companies have a greater capacity to make environmental investments, strengthen social programs, and improve the quality of corporate governance. Therefore, financial constraints can be understood as the main pathway that explains the relationship between FinTech and ESG.

The results of this study also support the argument put forward by Ding et al. (2022) that FinTech is able to reduce information asymmetry between companies and fund providers. The use of digital technology allows the risk evaluation process to be carried out more accurately, thereby increasing investor and financial institution trust in the company. Increased access to financing ultimately provides space for companies to allocate greater resources to sustainability activities. In this context, FinTech plays an enabler that strengthens the company's ability to create economic value as well as social and environmental value.

From a theoretical perspective, the findings of this research can be explained through Stakeholder Theory which states that companies need to pay attention to the interests of various stakeholders to achieve long-term sustainability. ESG implementation is a form of corporate responsibility to stakeholders, while FinTech provides the necessary resource support to realize these goals. When companies are able to improve the quality of ESG, the level of stakeholder trust will also increase, providing benefits in the form of better reputation, wider access to capital, and increased company competitiveness (Fatemi et al., 2018).

In addition, the results of this study show that ESG not only functions as a compliance instrument, but also as a strategy that is able to create a competitive advantage. Companies that successfully integrate ESG into their business activities tend to have higher innovation capacity and better ability to deal with changes in the business environment (Tang, 2022). These findings are also in line with Broadstock et al. (2021) who affirm that companies with good ESG performance have a higher level of resilience to various risks and uncertainties. Therefore, the integration between FinTech and ESG can be seen as a strategic combination that supports long-term value creation as well as the sustainability of companies in the digital economy era.

6. | CONCLUSION

This study aims to examine the relationship between the development of Financial Technology (FinTech), financial constraints, and Environmental, Social, and Governance (ESG) performance through a literature review approach. Based on the results of the synthesis of various studies published in the 2018–2022 period, it can be concluded that FinTech has an important role in supporting the improvement of corporate ESG performance. The development of financial technology is able to improve the efficiency of the financial system, expand access to sources of financing, and reduce the obstacles that companies have faced in obtaining capital to support sustainability activities.

The results of the study also show that financial constraints are one of the main factors that affect the success of ESG implementation. Companies that experience financing limitations tend to have lower ability to carry out environmental, social, and governance programs. Conversely, companies that gain better access to financing have a greater chance of allocating resources to sustainability investments. In this context, FinTech plays a role as a mechanism that helps reduce financing constraints so as to support the improvement of ESG performance.

Overall, the study shows that the integration between financial technology and sustainability strategies is an increasingly relevant approach in the modern business environment. FinTech not only contributes to improving the company's financial performance, but also supports long-term value creation through strengthening environmental, social, and governance aspects. These findings underscore the importance of developing a financial digital ecosystem that is able to drive more sustainable and competitive business practices.

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The authors declare that there is no conflict of interest.

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Ethical approval was obtained for this study. The manuscript represents original work and has not been previously published, nor is it under consideration by another journal.

Data Disclosure Statement
The data that support the findings of this study are available from the corresponding author upon reasonable request.

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